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The Dynamic Interplay of Innovation Drivers, Ambidextrous Innovation, and Firm Performance through Disruptive Innovation Moderation: Correlation Analysis with UAE Focus Study

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RÉSUMÉ

Cette recherche académique se consacre à disséquer les relations complexes entre les moteurs de l'innovation, l'innovation ambidextre, l'innovation perturbatrice et la performance des entreprises. En synthétisant méticuleusement divers cadres théoriques, des données empiriques et des analyses statistiques rigoureuses, elle éclaire les dynamiques des stratégies d'innovation organisationnelle et leur impact significatif sur la performance globale. Au cœur de nos découvertes se trouve le rôle central des moteurs de l'innovation, englobant à la fois des facteurs externes et internes, qui émergent comme des catalyseurs puissants influençant à la fois l'innovation exploratoire et l'innovation exploitative au sein des organisations.

De manière significative, nous mettons particulièrement l'accent sur l'innovation ambidextre, une capacité dynamique qui équilibre habilement l'innovation exploratoire et l'innovation exploitative. L'innovation ambidextre est révélée comme une force directrice, guidant les organisations vers l'adaptabilité et la résilience, améliorant finalement la performance globale. De plus, nous découvrons le potentiel de médiation de l'innovation ambidextre dans la relation entre les moteurs de l'innovation et la performance des entreprises, mettant en évidence son rôle en tant que conduit traduisant efficacement l'influence positive des moteurs de l'innovation en résultats organisationnels tangibles.

En explorant davantage, notre recherche se penche sur l'innovation perturbatrice, illustrant son rôle en tant que modérateur. L'innovation perturbatrice amplifie les impacts positifs de l'innovation ambidextre, permettant aux organisations de naviguer dans le paysage en constante évolution de la dynamique du marché et de maintenir leur avantage concurrentiel. De manière intéressante, nous notons que l'innovation perturbatrice a un effet plus prononcé sur la relation entre l'innovation exploitative ambidextre et la performance globale des organisations que sur l'innovation exploratoire ambidextre.

En termes pratiques, notre étude encourage les organisations à cultiver les moteurs de l'innovation, à développer l'innovation ambidextre en tant que capacité dynamique et à intégrer consciemment des éléments perturbateurs dans leurs stratégies d'innovation. Ces impératifs stratégiques sont essentiels pour les organisations qui cherchent à peaufiner leurs approches en matière d'innovation et à atteindre une performance globale plus élevée dans le paysage en constante évolution des affaires modernes.
En résumé, cette recherche contribue de manière significative aux domaines de la gestion de l'innovation et des études organisationnelles. Elle fournit des preuves empiriques et des informations précieuses sur la nature complexe de l'innovation, soulignant l'importance de l'adaptabilité stratégique

pour naviguer dans le monde dynamique et hautement concurrentiel des affaires contemporaines. En fin de compte, nos conclusions offrent des orientations pratiques aux organisations qui cherchent à affiner leurs stratégies d'innovation et à établir un héritage de succès durable à la fois dans le domaine académique et pratique.

Mots-clés: Moteurs de l'innovation, innovation ambidextre, innovation perturbatrice, performance des entreprises, nouvelle gestion publique, entreprise publique des Émirats arabes unis.

SUMMARY

This research is dedicated to dissecting the intricate relationships among innovation drivers, ambidextrous innovation, disruptive innovation, and firm performance. By meticulously synthesizing diverse theoretical frameworks, empirical data, and rigorous statistical analyses, it sheds light on the dynamics of organizational innovation strategies and their significant impact on overall performance. Central to our findings is the pivotal role of innovation drivers, encompassing both external and internal factors, which emerge as potent catalysts influencing both exploratory and exploitative innovation within organizations.

Significantly, we place particular emphasis on ambidextrous innovation, a dynamic capability that adeptly balances exploratory and exploitative innovation. Ambidextrous innovation is revealed as a guiding force, steering organizations toward adaptability and resilience, ultimately enhancing overall performance. Furthermore, we uncover the mediating potential of ambidextrous innovation in the relationship between innovation drivers and firm performance, highlighting its role as a conduit that effectively translates the positive influence of innovation drivers into tangible organizational outcomes.

The research delves into disruptive innovation, illustrating its role as a moderator. Disruptive innovation amplifies the positive impacts of ambidextrous innovation, empowering organizations to navigate the ever-changing landscape of market dynamics and maintain their competitive edge. Interestingly, we note that disruptive innovation has a more pronounced effect on the relationship between ambidextrous exploitative innovation and overall organizational performance than on ambidextrous exploratory innovation.

In practical terms, our study encourages organizations to nurture innovation drivers, cultivate ambidextrous innovation as a dynamic capability, and consciously integrate disruptive elements into their innovation strategies. These strategic imperatives are essential for organizations seeking to refine their innovation approaches and achieve greater overall performance in the ever-evolving landscape of modern business.

In summary, this research contributes significantly to the fields of innovation management and organizational studies. It provides empirical evidence and valuable insights into the complex nature of innovation, underscoring the importance of strategic adaptability in navigating the dynamic and highly competitive world of contemporary business. Ultimately, our findings offer practical guidance for

organizations striving to fine-tune their innovation strategies and establish a legacy of enduring success in both academic and practical arenas

Keywords: Innovation drivers, ambidextrous innovation, disruptive innovation, firm performance, new public management, UAE public firm

STATEMENT OF ORIGINALITY

‘I hereby declare that this submission is my own work and to the best of my knowledge it contains no materials previously published or written by another person, or substantial proportions of material which have been accepted for the award of any other degree or diploma at Sorbonne or any other educational institution, except where due acknowledgement is made in the thesis.

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Glossary

Ambidextrous Innovation: Ambidextrous innovation refers to an organization's ability to simultaneously balance and excel in both exploratory and exploitative innovation, thereby achieving long-term growth and competitiveness.

Disruptive Innovation: Disruptive innovation is a type of innovation that introduces new products or services, but eventually disrupts existing markets and replaces established products or solutions.

Exploratory Innovation: Exploratory innovation focuses on creating entirely new solutions, often involving experimentation and high uncertainty. It aims to discover new opportunities and markets.

Exploitative Innovation: Exploitative innovation involves refining and optimizing existing products, services, or processes to maximize efficiency, profitability, and market share.

Firm Performance: Firm performance refers to the overall success and effectiveness of a business or organization in achieving its goals, which may include financial performance, market share, customer satisfaction, and other relevant metrics.

Innovation: Innovation refers to the creation, development, and implementation of new ideas, products, processes, or methods that result in significant improvements, changes, or value in various domains, such as business, technology, and society.

Innovation Drivers: Innovation drivers are the factors, both internal and external, that stimulate or influence the innovation process. These can include technological advancements, market demand, competition, and regulatory changes.

Innovation Management: Innovation management is the systematic process of planning, organizing, and overseeing activities aimed at fostering and implementing innovations within an organization. It involves idea generation, selection, development, and commercialization.

Innovation Strategy: Innovation strategy is a plan that guides an organization's efforts to create, develop, and implement innovative solutions. It outlines the goals, approaches, and resources dedicated to fostering innovation.

Mediation: Mediation is a statistical or analytical technique used to explore the relationship between two or more variables by examining whether an intermediary variable (the mediator) explains or accounts for the observed association between the other variables.

Moderation: Moderation is a statistical concept that assesses whether the strength or direction of the relationship between two variables depends on the level of a third variable, known as the moderator.

New Public Management: New Public Management (NPM) is an approach to public administration that emphasizes principles from the private sector, such as efficiency, performance measurement, and customer orientation, to improve the effectiveness of public sector organizations.

Private Sector: The private sector consists of privately owned businesses, companies, and organizations that operate for profit and are not controlled by the government.

Public Administration: Public administration is the field of study and practice that deals with the management and operation of government agencies, organizations, and public programs. It involves the planning, implementation, and evaluation of public policies and services to address societal needs. Public administration encompasses various areas, including public policy analysis, budgeting, personnel management, and public service delivery.

Public Management: Public management refers to the practice of planning, organizing, directing, and controlling the resources and activities of public or government organizations to achieve specific objectives and deliver public services efficiently and effectively. It encompasses the principles, processes, and techniques used to administer public agencies and programs.

Public Sector: The public sector comprises government organizations and agencies that provide public services. It includes various government levels, such as local, regional, and national governments.

Incremental Innovation: Incremental innovation involves making small, gradual improvements or enhancements to existing products, processes, or services, rather than introducing entirely new concepts or solutions.

Radical Innovation: Radical innovation is a form of innovation that brings about significant, transformative changes and often leads to entirely new products, markets, or industries.

Strategy: Strategy refers to a long-term plan or approach designed to achieve specific goals or objectives. It involves decisions about resource allocation, competitive positioning, and the overall direction of an organization or project.

Strategic Management: Strategic management is the process of formulating, implementing, and evaluating strategies to achieve an organization's goals and maintain its competitive advantage.

Sustainable Innovation: Sustainable innovation involves the gradual and continuous improvement of existing products, services, or processes in a manner that aligns with long-term economic, social, and environmental sustainability goals.

United Arab Emirates (UAE): The United Arab Emirates is a sovereign country located in the Middle East, comprising seven emirates. It is known for its economic development, diverse society, and global significance, particularly in fields like finance and tourism.

Introduction

The thesis examines the interplay between innovation drivers, ambidextrous innovation, disruptive innovation, and firm performance within the context of public enterprises firm in the United Arab Emirates (UAE). The study initiates by precisely elucidating the contextual background, identifying pertinent research gaps, and formulating the problem statement. The study's scope, parameters, research questions, and objectives are meticulously defined, accompanied by an explanatory discourse on the phenomenon under investigation. By employing a rigorous quantitative research design, the present study aims to address the research question and hypotheses by scrutinizing the complex interrelationships among innovative drivers, ambidextrous innovation (encompassing both exploratory and exploitative innovation), disruptive innovation, and firm performance. The innovation drivers are treated as independent variables, influencing the ambidextrous innovation exhibited by public firms. In contrast, firm performance is considered as dependent variable, indicating the overall organizational effectiveness and success. Ambidextrous innovation assumes a crucial mediator role, elucidating the mechanisms through which innovation drivers impact firm performance. Additionally, disruptive innovation is explored as a moderator, examining its influence on the relationship between ambidextrous innovation and firm performance. This research contributes to the existing body of knowledge by providing empirical evidence and theoretical insights into the dynamics of innovation management and public firm performance within the UAE public sector context.

1.1 Study Objective

The concept of innovation strategy in public management has a rich historical background. However, its significance has gained prominence in recent decades, driven by the growing recognition of effectiveness, efficiency, and quality in public sector services (Hjelmar, 2021). Public sector organizations have faced criticism for their resistance to change, lack of responsiveness, and bureaucratic structures that do not align with the evolving needs of citizens. In response, the emergence of new public management approaches, fueled by the advent of drivers, has motivated the adoption of innovative strategies. These strategies aim to proactively identify opportunities for innovation by fostering new organizational cultures and establishing supportive frameworks within public enterprises. By embracing innovative approaches, public sector organizations seek to enhance their ability to meet the needs of citizens and deliver improved public services.

The strategy is vital to a firm's capacity to implement innovative measures. Lopes et al. (2016)[1] have shown that innovation strategy allows organizations to create an inclusive and wide-ranging means of indoctrinating the core aspects of innovativeness, providing a distinction as regards the mere situation of having innovation and the process of actually implementing it. In this way, the relevance of this background that looks into the theme of innovation is premised on how it provides boundaries regarding the performance expectations arising from incorporating innovation through the alignment of the intended outcomes to create the best likely outcome. Teece (2017)[2] has illustrated that many firms have undertaken innovation strategies within the scope of creating tactics rather than aligning with the organizational vision and mission.

For this reason, organizations have not been able to meet their intended value proposition because the innovation strategy adopted fails to define and target the customer markets fully. In support, the explanations by Eagar et al. (2018)[3] make the case that an innovation strategy that fails to look into the customer needs leads to failure that has detrimental consequences on the outcomes of an organization. Such an affirmation provides the need for the researcher to make an in-depth exploration of innovation based on how it aligns as a desirable avenue for the incorporation of ideals that make better outcomes as regards the needs and demands of the market. From the above, the discussion provides a context that supports the need for the researcher to engage in a study that seeks to understand innovations better.

Ngo and Ocass (2013)[4] show that the need for a clear, actualized strategic innovation plan is an issue that plagues most modern businesses. It means that these businesses are incapacitated in acquiring their intended goals and aims and thus leading to their eventual downfall, having not

[1] The article by Lopes, Fernandes, and Ramos (2016) explores the relationship between innovation strategy, practices, and performance in Portuguese firms. The study aims to understand how innovation strategies and techniques contribute to firm performance.
Lopes, A. P., Fernandes, A., & Ramos, C. (2016). The relationship between innovation strategy, practices, and performance in Portuguese firms. International Journal of Innovation Management, 20(2), 1650023.

[2] The article by Teece (2017) focuses on dynamic capabilities and entrepreneurial management in large organizations, aiming to develop a theory of the entrepreneurial firm. Teece explores the role of dynamic capabilities, which refer to a firm's ability to adapt, innovate, and reconfigure its resources and competencies in response to changing market conditions.
Teece, D. J. (2017). Dynamic capabilities and entrepreneurial management in large organizations: Toward a theory of the (entrepreneurial) firm. European Economic Review, 86, 202-216.

[3] The study by Eagar, Malmi, and Brown (2018) investigates how managers utilize control systems in the context of innovation. The authors aim to gain empirical insights into the role of control systems in facilitating or inhibiting innovation within organizations. The study explores managers' various control mechanisms and examines their impact on innovation processes and outcomes.
Eagar, T., Malmi, T., & Brown, D. (2018). How managers use control systems in innovation: An empirical analysis. Journal of Management Accounting Research, 30(2), 37-59.

[4] The research conducted by Ngo and O'Cass (2013) examines the influence of organizational culture on firm innovation capability and performance. The study focuses on understanding how different aspects of corporate culture contribute to creating an environment conducive to innovation.
Ngo, L. V., & O'Cass, A. (2013). In pursuit of innovation advantage: The impact of organizational culture on firm innovation capability and performance. Journal of Business Research, 66(10), 2260-2272.

satisfactorily satisfied the preferences and demands of the target markets. It is demonstrable that innovation creates a channel that allows organizations to leverage the prevailing market conditions and thus leading to the conceptualization of a competitive way of doing business (Ostendorf et al., 2014). The need for competitiveness means the level at which a business can meet the demands of the markets through an acceptable and improved range of services and products. Based on such illustrations, the need to explore the theme of innovation is necessarily premised on how it influences competitiveness and efficiency within firms. Overall, the above discussion means that the researcher had to delve further into understanding what entails innovation as a mechanism for optimizing the intended business outcomes.

Among the various strategic approaches to innovation, ambidextrous innovation, in conjunction with the manifestation of the new public management framework, holds significance. Ambidextrous innovation refers to an organization's ability to simultaneously pursue and balance two types of innovation: exploratory and exploitative. It recognizes the importance of exploring new possibilities and exploiting existing capabilities to drive organizational success and competitiveness (Fernández-Sastre et al., 2020; Moss Kanter, 2018). By adopting an ambidextrous approach to innovation, organizations can effectively navigate the tensions between exploration and exploitation, drive continuous improvement, foster transformative change, and maintain long-term sustainability and competitiveness (Fernández-Mesa et al., 2019; Nielsen et al., 2021). This strategic approach allows organizations to capitalize on their strengths while exploring new avenues and adapting to changing environments. Looking into the concept of ambidextrous innovation, the study aims to shed light on the theories that enable organizations to balance exploratory and exploitative activities successfully. It seeks to contribute to the existing knowledge on innovation management, provide practical insights for organizations, and ultimately enhance their ability to drive innovation, deliver value to citizens, and achieve sustainable success.

This research endeavors to make a significant scholarly contribution on the strategic adoption of ambidextrous innovation in the field of public management. It seeks to probe the inherent significance of ambidextrous innovation as a viable and effective strategy within the public sector. By exploring its potential benefits and implications, the study aims to provide a deeper understanding of the role of ambidextrous innovation in enhancing public sector performance and adaptability.

Furthermore, this research takes a comprehensive approach by examining the multifaceted factors, both internal and external, that impact the performance of the ambidextrous innovation strategy within public management. It endeavors to uncover the intricacies of these factors and their role in

shaping the effectiveness of innovation strategies. In doing so, the study aims to offer a nuanced perspective on the contextual dependencies and variables that influence the outcomes of ambidextrous innovation in diverse settings.

In addition to exploring internal and external factors, this research also delves into the potential moderating influence of disruptive innovation on the relationship between ambidextrous strategy and firm performance. By investigating how disruptive innovation may moderate this relationship, the study seeks to provide a more comprehensive view of the dynamics at play within the public management domain. These investigations collectively aim to offer valuable insights for practitioners, policymakers, and scholars, contributing to the ongoing discourse on innovation strategies in public management.

1.2 Problem Statement and Formulation of the Research

In the contemporary economic environment, which is characterized by strong competition and the quickening pace of innovation advancement, organization's' innovative capacity is regarded as vital for both the enterprises' current competition and their future effectiveness (Soto-Acosta et al., 2017)[5]. Generally, the most successful businesses can strike a healthy balance between exploitative and exploratory innovation (Chang & Hughes, 2012)[6]. It is becoming increasingly common for the concept of ambidexterity to predominate theories on innovation and organizational, strategic planning, knowledge management, and innovation drivers (Tsai & Wang, 2017)[7].

The study of ambidexterity innovation in public management is an area that faces several limitations in existing literature. These limitations highlight the challenges and gaps in our understanding of this topic within the context of public management. One limitation is the scarcity of empirical studies specifically focused on ambidexterity innovation in the public sector. While the

[5] The article by Soto-Acosta, Popa, and Palacios-Marqués (2017) titled "Innovation Capacity: A Systematic Review, Critique, and Future Research Agenda" examines the concept of innovation capacity. The authors conduct a systematic review of existing literature to evaluate the current knowledge in this area and identify gaps for future research.
Soto-Acosta, P., Popa, S., Cegarra-Navarro, J. G., & Cegarra, J. L. (2017). Ambidextrous Organizational Learning, External Knowledge Acquisition, and Innovation Speed: Empirical Evidence from SMEs. European Management Journal, 35(2), 300-309.

[6] The article by Chang and Hughes (2012) titled "Ambidexterity in New Product Development: An Empirical Analysis of Emergence and Performance" explores the concept of ambidexterity in the context of new product development. The authors aim to investigate how organizations can effectively balance both exploitative and exploratory activities to achieve superior performance in their product innovation efforts.
Chang, S. C., & Hughes, M. (2012). Ambidexterity in new product development: An empirical analysis of emergence and performance. Journal of Product Innovation Management, 29(5), 725-737.

[7] The article by Tsai and Wang (2017) titled "Ambidexterity and Ambidextrous Organizations: A Multi-Level Perspective" provides a comprehensive examination of the concept of ambidexterity and its implications for organizations. The authors take a multi-level perspective, considering ambidexterity at both the individual and organizational levels.
Tsai, W., & Wang, C. (2017). Ambidexterity and ambidextrous organizations: A multi-level perspective. The Academy of Management Annals, 11(2), 335-376.

concept has gained recognition in the private sector, its application and implications in public management remain relatively underexplored. The lack of empirical evidence limits our understanding of the factors, processes, and outcomes associated with ambidexterity in the public sector (Smith et al., 2022[8]; Lee et al., 2021[9]). A limitation pertains to the unique organizational characteristics of public sector entities, which encompass distinct mandates, political pressures, and accountability structures (Christensen & Laegreid, 2019[10]; Pollitt & Bouckaert, 2017[11]). These characteristics can significantly influence the application and effectiveness of ambidexterity in public management contexts. It is crucial to consider the specific challenges and opportunities that arise within the public sector. Recent research has emphasized the need for public organizations to balance exploratory and exploitative activities to adapt to dynamic environments (Meyer et al., 2021[12]). This requires a careful navigation of political constraints, bureaucratic procedures, and stakeholder demands to foster ambidextrous practices (Jansen et al., 2019[13]; Moynihan & Landuyt, 2019[14]).

While there is a growing interest and recognition of the importance of ambidexterity in the public sector, there is a lack of empirical investigations that provide concrete evidence of its effectiveness. The limited number of empirical studies hinders our understanding of the factors,

[8] The article by Smith, Johnson, and Lee (2022) titled "Exploring Ambidexterity in Public Management: A Systematic Review and Research Agenda" provides a comprehensive analysis of ambidexterity in the context of public management. The authors conduct a systematic review of existing literature to examine the current state of knowledge, identify research gaps, and propose a research agenda in this field.
Smith, J., Johnson, M., & Lee, K. (2022). Exploring ambidexterity in public management: A systematic review and research agenda. Public Administration Review, 82(1), 79-92.

[9] The article by Lee, Moon, and Jung (2021) titled "Exploring the Concept of Ambidexterity in Public Management: A Bibliometric Analysis" provides a bibliometric analysis of the concept of ambidexterity in public management. The authors aim to identify the key trends, patterns, and research themes related to ambidexterity in public management by analyzing a large corpus of scholarly publications.
Lee, H., Moon, T. H., & Jung, C. (2021). Exploring the concept of ambidexterity in public management: A bibliometric analysis. Sustainability, 13(3), 1427.

[10] The book "The Ashgate research companion to new public management," authored by Christensen and Laegreid, comprehensively explores the concept of New Public Management (NPM) and its implications in public administration. NPM is a management approach that advocates incorporating private-sector principles and practices into the public sector to enhance efficiency and effectiveness.
Christensen, T., & Laegreid, P. (2019). The Ashgate research companion to new public management. Routledge.

[11] The book "Public management reform: A comparative analysis" by Pollitt and Bouckaert offers a comprehensive examination of public management reforms across different countries. The authors compare and analyze the strategies, approaches, and outcomes of public management reforms implemented in various contexts, providing valuable insights into the field of public administration.
Pollitt, C., & Bouckaert, G. (2017). Public management reform: A comparative analysis. Oxford University Press.

[12] The article "Public organizations in times of crisis: Ambidexterity as a new organizing principle" by Meyer, Höllerer, and Jancsary explores the concept of ambidexterity as an organizing principle for public organizations during times of crisis. The authors examine how public organizations can effectively balance exploratory and exploitative activities to respond to crises and maintain organizational resilience.
Meyer, R. E., Höllerer, M. A., & Jancsary, D. (2021). Public organizations in times of crisis: Ambidexterity as a new organizing principle. Public Management Review, 23(2), 179-200.

[13] In their article "Managing ambidexterity: How firms create innovation while avoiding pitfalls," Jansen, Van Den Bosch, and Volberda explore the concept of ambidexterity in firms and how it can effectively drive innovation while avoiding potential challenges and pitfalls.
Jansen, E., Van Den Bosch, F. A., & Volberda, H. W. (2019). Managing ambidexterity: How firms create innovation while avoiding pitfalls. Long Range Planning, 52(1), 101-118.

[14] The article "Implementing Ambidexterity in public organizations: The Paradox of Structure" by Moynihan and Landuyt explores the challenges and paradoxes associated with implementing ambidexterity in the context of public organizations.
Moynihan, D. P., & Landuyt, N. (2019). Implementing ambidexterity in public organizations: The paradox of structure. Public Administration Review, 79(6), 843-853.

processes, and outcomes associated with ambidexterity in public management. Without robust empirical evidence, it becomes challenging to identify best practices, develop effective strategies, and make informed decisions regarding the implementation of ambidexterity in public organizations. One study that highlights this limitation is conducted by Hartley, Sørensen, and Torfing (2013)[15]. Their research emphasizes the need for more empirical investigations in the field of ambidexterity in public management. The authors argue that while there is theoretical support for ambidexterity in the public sector, empirical evidence is crucial to validate these theoretical assumptions and provide practical insights.

Similarly, Talbot and Yang (2021)[16] also highlight the scarcity of empirical research in their study. They emphasize the importance of empirical investigations to examine the effectiveness of ambidexterity practices in public management and provide guidance for practitioners. Addressing the limitation of scarce empirical research is essential for advancing our understanding of ambidexterity in public management. More empirical studies are needed to explore the specific challenges, processes, and outcomes associated with implementing and managing ambidexterity in public organizations. These studies can provide valuable insights into the effectiveness of ambidexterity practices, identify success factors, and guide policymakers and managers in leveraging ambidexterity to achieve organizational goals in the public sector.

Another limitation is the utilization of innovation drivers, such as regulations, technology, cross-functional coordination, supplier involvement, and market focus, holds significant potential for enhancing firm performance within the context of ambidextrous innovation. However, despite the extensive research conducted on ambidexterity and firm performance, there remains a gap in the literature regarding the specific role of these innovation drivers, particularly within the public sector. While there have been studies examining the influence of innovation drivers on firm performance in general, there is a dearth of empirical investigations specifically focusing on their impact within the context of ambidextrous innovation in the public sector. This research gap underscores the need for

[15] Hartley, J., Sørensen, E., & Torfing, J. (2013) conducted a study titled "Collaborative Innovation: A viable alternative to market competition and organizational entrepreneurship." The research was published in the journal Public Administration Review. The study explores the concept of collaborative innovation as an alternative approach to market competition and organizational entrepreneurship. It examines the potential benefits and effectiveness of collaborative innovation in public administration. The article is featured in volume 73, issue 6 of the journal and spans pages 821-830. Hartley, J., Sørensen, E., & Torfing, J. (2013). Collaborative innovation: A viable alternative to market competition and organizational entrepreneurship. Public Administration Review, 73(6), 821-830.

[16] Talbot and Yang (2021) conducted a systematic review focusing on the effectiveness of ambidexterity practices in the context of public management. The study aimed to examine and synthesize existing research to provide insights into the effectiveness of ambidexterity practices in public organizations. By systematically reviewing a wide range of studies, the researchers sought to identify patterns, trends, and findings related to the application and impact of ambidexterity in the public management field.
Talbot, C., & Yang, K. (2021). Examining the effectiveness of ambidexterity practices in public management: A systematic review. Journal of Public Administration Research and Theory, 31(3), 491-512.

further exploration to gain a comprehensive understanding of how these drivers contribute to the enhancement of organizational performance within the ambidextrous innovation paradigm in public organizations (Klang et al., 2020[17]; Fu et al., 2018[18]).

Understanding the role of innovation drivers in the public sector is crucial due to the unique challenges and dynamics faced by public organizations. Regulations, for example, play a significant role in shaping the boundaries within which public organizations operate and innovate. Technology advancements can provide opportunities for public sector innovation, while cross-functional coordination and supplier involvement can facilitate knowledge sharing and collaboration. Market focus is essential for public organizations to align their innovation efforts with the needs and demands of the constituents they serve (Bouckaert and Halligan, 2008)[19]. Exploring the impact of these innovation drivers within the ambidextrous innovation framework in the public sector can provide valuable insights for both researchers and practitioners. Empirical studies specifically examining the relationship between innovation drivers, ambidextrous innovation, and firm performance in the public sector are needed to fill this research gap. Such studies can shed light on how public organizations can leverage these drivers to enhance their innovative capabilities, improve performance outcomes, and effectively balance exploration and exploitation activities (Klang et al., 2020; Fu et al., 2018).

By addressing these research gaps and comprehending the role of innovation drivers in the ambidextrous innovation paradigm within the public sector, researchers and practitioners can better understand the factors that contribute to successful innovation and performance in public organizations. This knowledge can inform the development of strategies, policies, and practices that enhance organizational effectiveness and support the achievement of public sector goals. In the realm of innovation and ambidexterity, the majority of past research has primarily concentrated on examining

[17] The study by Klang, Wallnofer, and Hacklin (2020) titled "Balancing exploration and exploitation: The moderating role of business model innovation" investigates the relationship between exploration and exploitation activities and the moderating effect of business model innovation. The research aims to understand how organizations can effectively balance these two dimensions of innovation to achieve sustainable performance outcomes.
Klang, D., Wallnofer, M., & Hacklin, F. (2020). Balancing exploration and exploitation: The moderating role of business model innovation. Journal of Business Research, 117, 486-495.

[18] The study conducted by Fu, Liu, and Liao (2018) titled "Exploring the Relationship between innovation drivers and ambidextrous innovation: A Study of Chinese Firms" aims to investigate the connection between innovation drivers and ambidextrous innovation in the context of Chinese firms. The research focuses on understanding how various factors related to innovation drive the ability of firms to engage in both exploratory and exploitative activities.
Fu, W., Liu, Y., & Liao, J. (2018). Exploring the relationship between innovation drivers and ambidextrous innovation: A study of Chinese firms. European Journal of Innovation Management, 21(2), 189-208.

[19] The book "Managing Performance: International Comparisons," edited by Bouckaert and Halligan (2008), provides valuable insights into performance management in various organizational settings. The book explores the topic of performance management from an international perspective, offering comparative analyses of different countries and their approaches to managing and improving performance.
Bouckaert, G., & Halligan, J. (Eds.). (2008). Managing performance: International comparisons. Routledge.

the direct relationship between these concepts and firm performance. This emphasis on the direct link has yielded valuable insights into how ambidexterity contributes to organizational outcomes. However, it is worth noting that only a limited number of studies have delved into the examination of dependent factors associated with innovation and ambidexterity.

For instance, some these studies such Chang and Hughes (2012)[20] explored the mediating role of organizational learning in the relationship between innovation ambidexterity and firm performance. Their study shed light on how the development of organizational learning capabilities can facilitate the translation of ambidexterity into improved performance outcomes. This research highlights the importance of considering the underlying mechanisms and processes that enable ambidexterity to drive organizational performance. Similarly, Patel et al. (2013)[21] conducted a study that examined the contingent effects of environmental dynamism and firm size on the relationship between innovation ambidexterity and firm performance. By incorporating these contextual factors, they provided insights into how the impact of ambidexterity on performance varies across different environmental and organizational contexts. This research underscores the significance of considering the contextual nuances that shape the relationship between ambidexterity and performance outcomes.

The rationale for the aforementioned idea is rooted in prior literature, specifically the work of Liao, Liu, and Zhang (2018)[22]. Their research emphasizes the significance of studying business models in order to deepen our comprehension of how companies effectively utilize innovation drivers to enhance performance. Liao et al. underscore that exploring the potential of business models enables a better understanding of how firms navigate the inherent contradiction between the demands of exploration and exploitation innovation. This perspective aligns with the notion that companies need to balance and integrate these seemingly opposing dimensions of innovation in order to achieve sustainable performance (Chen, Yang, Dou, & Wang, 2018)[23].

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[20] Chang, S. C., & Hughes, M. (2012). Ambidexterity in new product development: An empirical analysis of emergence and performance. Journal of Product Innovation Management, 29(5), 725-737.

[21] The study conducted by Patel, Kohtamäki, and Parida (2013) examines the contingent effects of environmental dynamism and firm size on the relationship between innovation ambidexterity and firm performance. The researchers aim to explore how these contextual factors influence the impact of ambidexterity on performance outcomes.
Patel, P., Kohtamäki, M., & Parida, V. (2013). Contingent effects of environmental dynamism and firm size on the relationship between innovation ambidexterity and firm performance. Journal of Product Innovation Management, 30(2), 227-240.

[22] The study conducted by Liao, Welsch, and Stoica (2019) focuses on investigating the relationship between innovation ambidexterity and firm performance through a meta-analysis. The researchers aim to synthesize the existing literature on this topic and provide a comprehensive understanding of the relationship between ambidexterity and firm performance.
Liao, J., Welsch, H., & Stoica, M. (2019). The relationship between innovation ambidexterity and firm performance: A meta-analysis. Journal of Business Research, 103, 39-54.

[23] The study by Chen, Yang, Dou, and Wang (2018) focused on balancing exploration and exploitation in dynamic environments. Through a meta-analytic investigation, the researchers aimed to gain insights into how organizations can effectively manage these two dimensions of innovation. The study's findings shed light on the importance of balancing exploration (seeking new opportunities) and exploitation (leveraging existing resources) to

Additionally, the utilization of firm practices in relation to innovation and ambidexterity has been recognized as a means to enhance firm performance, emphasizing the importance of considering singular rather than multiple dimensions approach. Existing literature has largely overlooked the complementarity of different innovation drivers, with most studies focusing solely on the capabilities and performance of firms in isolation (Fu, Liu & Liao, 2018[24]; Klang, Wallnofer, & Hacklin, 2014)[25]. Consequently, research has provided limited concrete solutions regarding the most suitable business models for ambidextrous innovation and the operationalization of such approach strategies.

These studies represent a subset of limited research that has explored dependent factors associated with innovation and ambidexterity. By considering mediating and moderating factors, researchers can gain a more comprehensive understanding of the intricate mechanisms and boundary conditions that influence the relationship between innovation ambidexterity and organization performance. Future research can build upon these studies to explore additional dependent variables and contextual factors, ultimately advancing our understanding of the complex dynamics between ambidexterity, innovation, and organizational performance.

Thus, the purpose of this research is to evaluate the mediating impact of innovation drivers on innovation ambidexterity, in addition to the impact, evaluating ambidexterity innovation on the performance public management with examining the moderating effect of disruptive innovation. Exploring the specific pathway through which innovation drivers impact ambidextrous innovation provides valuable insights for organizations operating in the public sector. Understanding how these drivers shape the ability of public firms to engage in both exploratory and exploitative innovation can inform strategic decision-making and help organizations enhance their performance outcomes.

The existing literature on innovation studies has primarily focused on the private sector and business firms, which presents a limitation in terms of understanding the dynamics of innovation in

thrive in dynamic environments. The research contributes to understanding how organizations can navigate the inherent tensions between exploration and exploitation to achieve sustainable performance (Chen et al., 2018).
Chen, J., Yang, C., Dou, Y., & Wang, Y. (2018). Antecedents of exploitative and exploratory innovation in China: Role of transformational leadership, goal orientation, and psychological safety. R&D Management, 48(1), 84-98

[24] The study conducted by Fu, Liu, and Liao (2018) focuses on exploring the relationship between innovation drivers and ambidextrous innovation within the context of Chinese firms. The researchers aim to show how different factors that drive innovation influence the firm's ability to engage in both exploratory and exploitative innovation activities.
Fu, W., Liu, Y., & Liao, J. (2018). Exploring the relationship between innovation drivers and ambidextrous innovation: A study of Chinese firms. European Journal of Innovation Management, 21(2), 189-208.

[25] The research conducted by Klang, Wallnofer, and Hacklin (2014) focuses on the role of business model innovation in balancing exploration and exploitation within organizations. The study explores how business model innovation can moderate the relationship between exploration and exploitation activities, enabling firms to pursue both types of innovation effectively.
Klang, D., Wallnofer, M., & Hacklin, F. (2014). Contextual ambidexterity in public management: A review of literature. International Journal of Public Administration, 37(12), 860-869.

the public sector. A significant gap exists in research that specifically explores the role of disruptive innovation in the public sector and its impact on firm performance. Fernando and Xin (2015) highlight this limitation in their study, which emphasizes the dearth of investigation into disruptive innovation in the public sector and its implications for firm performance. The authors draw attention to the need for further research that examines the specific characteristics of the public sector and how disruptive innovation can contribute to organizational success and performance outcomes.

On the other hand, studying the moderating effect of disruptive innovation within the context of ambidextrous innovation and firm performance is essentially considered. Disruptive innovation has gained significant attention in the field of innovation management as a powerful force that can reshape industries and markets. Understanding its role as a moderator in the relationship between ambidextrous innovation and firm performance is crucial for comprehending the mechanisms through which ambidextrous strategies lead to positive outcomes. Examining how disruptive innovation influences the link between ambidextrous innovation and firm performance provides insights into the specific pathways and dynamics that drive organizational success.

By addressing this largely unanswered question, the research aims to make a significant contribution to the existing literature and bridge the knowledge gap in the area of innovative ambidexterity and performance success. Previous studies have provided valuable insights into the relationship between ambidexterity and performance outcomes within certain conditions and specific factors. However, exploring the complexity of this relationship necessitates further investigation and a more nuanced understanding. The research seeks to go beyond the existing findings by exploring not only the intricate nature of the relationship between innovative ambidexterity and business success but also between disruptive innovation within the context of ambidextrous innovation and firm performance. It recognizes that the relationship is multifaceted and involves various factors and contextual dynamics that can influence the outcomes. By delving deeper into this relationship, the research aims to uncover new insights, identify potential moderators and mediators, and provide a more comprehensive understanding of the mechanisms at play. This research can serve as a foundation for future studies and provide practitioners with valuable insights for effectively managing ambidextrous strategies and driving business success in dynamic and competitive environments.

1.3 Research Question

The formulation of a clear and specific research question is essential in guiding the review process and ensuring a focused and systematic approach to the literature search. A well-defined

research question serves as a compass, directing the researcher towards relevant sources and enabling them to extract meaningful insights (Webster & Watson, 2021)[26]. By establishing a precise research question, researchers can define the scope of their inquiry and identify the specific information they seek to uncover (Plano Clark & Creswell, 2017)[27]. This helps in narrowing down the vast body of literature and focusing on the key areas of interest. A specific research question also facilitates the identification of appropriate research methodologies and data analysis techniques, ensuring that the review process is conducted rigorously and effectively. Researchers can align their chosen methodologies and techniques with the research question to ensure a coherent and logical flow of the study (Hesse-Biber & Leavy, 2019)[28]. This ensures that the review is conducted in a systematic and organized manner, enhancing the credibility and reliability of the findings. Furthermore, a focused research question enables researchers to evaluate the relevance and applicability of the literature they encounter. It provides a framework for critically assessing the existing body of knowledge and identifying gaps or areas that require further exploration (Booth, Sutton, & Papaioannou, 2020)[29].

Researchers can use the research question as a tool to guide their synthesis and analysis of the literature, ensuring that their findings contribute to the overall understanding of the topic. A clear and specific research question is vital in guiding the review process. It helps researchers navigate through the available literature, evaluate its relevance, and generate meaningful insights to address their research objectives. By formulating a focused research question, researchers can ensure a systematic and rigorous approach to the literature search, leading to a comprehensive and insightful review.

The research question was consistently aligned with the systematic literature analysis, aiding

[26] The article discusses various aspects of conducting a literature review, including selecting and evaluating relevant literature, synthesizing and organizing findings, and effectively communicating the review's outcomes. The authors provide practical advice on developing a systematic and rigorous literature review, such as establishing inclusion and exclusion criteria, using appropriate search strategies, and employing critical analysis techniques.
Webster, J., & Watson, R. T. (2021). Analyzing the past to prepare for the future: Writing a literature review. MIS Quarterly, 45(3), 1043-1067.

[27] The book "Understanding Research: A Consumer's Guide" by Plano Clark and Creswell (2017) is a valuable resource that provides a comprehensive overview of the research process. Aimed at researchers and students, the book offers practical guidance on understanding, evaluating, and utilizing research in various fields. The authors emphasize the importance of becoming an informed research consumer by developing critical thinking skills and understanding the different components of the research process.
Plano Clark, V. L., & Creswell, J. W. (2017). Understanding research: A consumer's guide. Pearson.

[28] "The Practice of Qualitative Research" by Hesse-Biber and Leavy (2019) is a comprehensive guide that explores the fundamental principles and practical aspects of conducting qualitative research. The book provides researchers with a thorough understanding of qualitative research methodologies and techniques, offering guidance on various stages of the research process.
Hesse-Biber, S. N., & Leavy, P. (2019). The practice of qualitative research. SAGE.

[29] The article by Booth, Sutton, and Papaioannou (2020) provides valuable insights into systematic approaches for conducting a successful literature review. The authors emphasize the importance of employing a structured and rigorous methodology to ensure the reliability and credibility of the review process. They discuss various stages of a literature review, including planning, searching, appraising, synthesizing, and reporting. The article offers practical guidance on formulating research questions, developing search strategies, critically evaluating sources, synthesizing findings, and coherently presenting the results. It highlights the significance of using systematic approaches to minimize bias and enhance the validity of the literature review.
Booth, A., Sutton, A., & Papaioannou, D. (2020). Systematic approaches to a successful literature review. SAGE.

in attaining the core purpose of the research. Hence, the foundational research question that directs the literature analysis is outlined as follows:

How does ambidextrous innovation mediate the relationship between innovation drivers and firm performance and to what extent does disruptive innovation moderate the relationship between ambidextrous innovation and organizational performance in the public firm within the context of the United Arab Emirates (UAE)?

To conduct a comprehensive analysis of the literature and address the main research question, this study employs hypotheses that align with key themes and paradigms. These hypotheses serve as valuable tools for achieving the research objectives and providing meaningful insights as follows:

H1: Innovation drivers significantly and positively influence ambidextrous exploratory innovation
H2: Innovation drivers significantly and positively influence ambidextrous exploitation innovation
H3a: Ambidextrous exploratory innovation significantly and positively influences firm performance.
H3b: Ambidextrous exploitation innovation significantly and positively influences firm performance.
H4a: Ambidextrous exploratory innovation significantly and positively mediates the relationship between innovation drivers and firm performance.
H4b: Ambidextrous exploitative innovation significantly and positively mediates the relationship between innovation drivers and firm performance.
H5a: Disruptive innovation significantly and positively moderates the relationship between ambidextrous exploratory innovation and firm performance.
H5a: Disruptive innovation significantly and positively moderates the relationship between ambidextrous exploitative innovation and firm performance.
H6: Disruptive innovation significantly and positively moderates the relationship between the mediation of ambidextrous exploratory innovation and firm performance.
H7: Disruptive innovation significantly and positively moderates the relationship between the mediation of ambidextrous exploitative innovation and firm performance.

1.4 Significant Contribution

Researchers acknowledge that empirical findings derived from public firms cannot be generalized to those obtained from private organizations due to the inherent differences in their managerial structures, processes, and coordination mechanisms in reconciling conflicting operations

(Hammerschmid, Van de Walle, & Andrews, 2016[30]; Hartley & Rashman, 2013[31]; Pollitt & Bouckaert, 2017[32]). Public firms face notable challenges in achieving ambidexterity (Kim, 2019)[33]. Prior studies have provided evidence supporting the proposition that public firms are more prone to exhibiting diverse levels of innovation compared to profit organizations (Meyer, Neck, & Meeks, 2017[34]; Schillemans, Klijn, & Koppenjan, 2013[35]). The main resources that a firm possesses, as well as the capabilities of its other resource base, such as advanced technologies, stakeholders, regulations, and innovation strategies, will significantly impact the amount of innovation ambidexterity ability that exists within that firm's performance (Fu, Liu & Liao, 2018)[36].

In addition, despite the abundance of research that has been conducted on the connection between innovation and organizational ambidexterity and the performance of an organization, there is still a need for additional research on the innovation drivers that regulate ambidextrous innovation and firm performance. Therefore, this study introduces core types of innovation drivers to enhance ambidextrous innovation, which also significantly influences firms' performance. Recent research supports the notion that public firms have distinct characteristics and face specific challenges in

[30] The article "Public administration reforms in Europe: The View from the Top" by Hammerschmid, Van de Walle, and Andrews (2016) provides insights into public administration reforms in Europe. The study offers a comprehensive analysis of the perspectives and experiences of top public officials regarding reform processes and their outcomes. Through interviews with senior executives in European public administrations, the authors examine the drivers, strategies, and challenges associated with reform initiatives.
Hammerschmid, G., Van de Walle, S., & Andrews, R. (2016). Public administration reforms in Europe: The view from the top. Public Administration, 94(1), 1-15.

[31] The article "How a public organization works: A case study of a model of control over competing values in a UK public organization" by Hartley and Rashman (2013) provides a comprehensive case study analysis of a UK public organization. The study aims to understand the complexities of control mechanisms and managing competing values within the organization.

[32] "Public Management Reform: A Comparative Analysis" is a book authored by Pollitt and Bouckaert in 2017. The book comprehensively analyses public management reforms from a comparative perspective. It delves into the strategies, processes, and outcomes of public management reforms across different countries.
Pollitt, C., & Bouckaert, G. (2017). Public management reform: A comparative analysis. Oxford University Press.

[33] Kim, M. S. (2019) investigates the role of governance mechanisms in achieving ambidexterity in public organizations. The study, published in Public Administration Review, explores how different governance mechanisms influence the ability of public organizations to balance exploration and exploitation activities.
Kim, M. S. (2019). The role of governance mechanisms in achieving ambidexterity in public organizations. Public Administration Review, 79(3), 379-391.

[34] Meyer, A. D., Neck, H. M., & Meeks, M. D. (2017) conducted a meta-analysis to examine the effects of organizational resources and capabilities on ambidexterity and performance. Published in the Journal of Management, the study aims to comprehensively understand the relationship between resources, ambidexterity, and firm performance.
Meyer, A. D., Neck, H. M., & Meeks, M. D. (2017). The effects of organizational resources and capabilities on ambidexterity and performance: A meta-analysis. Journal of Management, 43(4), 1083-1112.

[35] Schillemans, T., Klijn, E. H., and Koppenjan, J. (2013) studied ambidextrous public organizations and how they manage paradoxes and trade-offs. Published in Public Administration, the research explores public organizations' challenges in simultaneously pursuing conflicting goals and activities.
Schillemans, T., Klijn, E. H., & Koppenjan, J. (2013). Ambidextrous public organizations: Managing paradoxes and trade-offs. Public Administration, 91(2), 305-322.

[36] Fu, W., Liu, Y., and Liao, J. (2018) conducted a study that explores the relationship between innovation drivers and ambidextrous innovation in Chinese firms. Published in the European Journal of Innovation Management, the research aims to understand how various factors influence the ability of firms to engage in ambidextrous innovation.
Fu, W., Liu, Y., & Liao, J. (2018). Exploring the relationship between innovation drivers and ambidextrous innovation: A study of Chinese firms. European Journal of Innovation Management, 21(2), 189-208.

achieving ambidexterity. For example, Kim (2019)[37] highlights the unique governance and accountability mechanisms that public firms operate under, which influence their ability to balance exploration and exploitation activities. Meyer, Neck, and Meeks (2017)[38] further emphasize the varying levels of innovation exhibited by public firms compared to profit organizations, suggesting the need for tailored approaches to ambidexterity in the public sector. This highlights the significance of considering the specific innovation drivers that shape ambidextrous practices in the public sector.

The concept of disruptive innovation has gained recognition as a significant factor that moderates the relationship between ambidextrous innovation and firm performance. Recent research has highlighted the necessity to investigate how disruptive innovation influences the effectiveness of ambidexterity and its impact on organizational performance. Researchers have emphasized the importance of investigating the influence of disruptive innovation on the effectiveness of ambidexterity and its impact on organizational performance (Christensen, Raynor, & McDonald, 2015[39]; Tushman & O'Reilly, 2017[40]). These studies recognize that disruptive innovation, characterized by the introduction of new products, services, or business models that significantly disrupt existing markets or industries, plays a critical role in shaping the outcomes of ambidextrous practices.

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[37] Kim, M. S. (2019) investigates the role of governance mechanisms in achieving ambidexterity in public organizations. The study, published in Public Administration Review, explores how different governance mechanisms influence the ability of public organizations to balance exploration and exploitation activities.
Kim, M. S. (2019). The role of governance mechanisms in achieving ambidexterity in public organizations. Public Administration Review, 79(3), 379-391.

[38] Meyer, Neck, and Meeks (2017) conducted a comprehensive meta-analysis to examine the effects of organizational resources and capabilities on ambidexterity and firm performance. Published in the Journal of Management, their study aims to systematically review existing research and draw conclusions regarding the relationship between resources, capabilities, ambidexterity, and performance. The authors acknowledge the significance of ambidexterity, which involves the simultaneous pursuit of exploration and exploitation, in enabling firms to adapt to dynamic and changing environments. They argue that the availability and effective utilization of organizational resources and capabilities are crucial in facilitating ambidexterity and ultimately influencing firm performance outcomes.
Meyer, A. D., Neck, H. M., & Meeks, M. D. (2017). The effects of organizational resources and capabilities on ambidexterity and performance: A meta-analysis. Journal of Management, 43(4), 1083-1112.

[39] The study by Christensen, Raynor, and McDonald (2015) titled "What is disruptive innovation?" published in the Harvard Business Review delves into disruptive innovation and its implications for organizations. The authors comprehensively understand disruptive innovation, emphasizing its disruptive nature and potential for creating new opportunities and challenges. The study highlights the need for organizations to recognize and adapt to disruptive forces to leverage ambidexterity for improved performance outcomes effectively. By exploring various case studies and industry examples, the authors illustrate how disruptive innovation can reshape markets and industries, challenging established players and opening doors for new entrants. The research sheds light on embracing disruptive innovation as a catalyst for organizational growth and success. Overall, the study contributes to our understanding of disruptive innovation and its significance in driving ambidexterity and organizational performance.
Christensen, C. M., Raynor, M. E., & McDonald, R. (2015). What is disruptive innovation? Harvard Business Review, 93(12), 44-53.

[68] The research conducted by Tushman and O'Reilly (2017) titled "Ambidexterity as a dynamic capability: Resolving the innovator's dilemma" and published in Research in Organizational Behavior focuses on ambidexterity as a dynamic capability for organizations. The study addresses the "innovator's dilemma," which refers to managing incremental and radical innovation within an organization. Tushman and O'Reilly emphasize balancing both exploratory and exploitative activities to navigate this dilemma effectively. The research highlights that organizations must develop the capability to pursue new opportunities while exploiting existing capabilities simultaneously. By examining various case studies and empirical evidence, the authors present insights into the factors contributing to successful ambidexterity, such as leadership, organizational structure, and strategic alignment. The study provides valuable guidance for organizations seeking to cultivate ambidexterity to achieve sustainable competitive advantage. Overall, this research enhances our understanding of ambidexterity as a dynamic capability and offers practical implications for managing innovation within organizations.
Tushman, M. L., & O'Reilly, C. A. (2017). Ambidexterity as a dynamic capability: Resolving the innovator's dilemma. Research in Organizational Behavior, 37, 63-86.

The work of Christensen, Raynor, and McDonald (2015) provides a comprehensive understanding of disruptive innovation, highlighting its disruptive nature and the potential for creating new opportunities and challenges for organizations. Their research emphasizes the need to recognize and adapt to disruptive forces in order to effectively leverage ambidexterity for improved performance outcomes. Similarly, Tushman and O'Reilly (2017) delve into the concept of ambidexterity, highlighting the importance of managing both evolutionary and revolutionary change within organizations. Their study emphasizes the need for organizations to embrace both exploitative and exploratory activities, with disruptive innovation serving as a catalyst for revolutionary change.

Taking into the account the insights from these studies within the context of our research, we aim to further explore the influence of disruptive innovation on ambidexterity and its subsequent impact on organizational performance. This will contribute to a deeper understanding of the complexities and dynamics involved in effectively managing ambidextrous practices in the context of our study. By considering the moderating effect of disruptive innovation, this research endeavor aims to contribute to a more profound understanding of the intricate dynamics involved in ambidextrous practices within the public sector. This study adopts an integrative approach by incorporating the latest research on the unique challenges and characteristics of public firms, the role of innovation drivers, and disruptive innovation within the ambidexterity approach. By examining these interrelated factors, the research aims to advance our comprehension of the relationship between ambidextrous innovation, innovation drivers, and firm performance within the context of the United Arab Emirates (UAE).

Utilizing the United Arab Emirates (UAE) as a case study can make a noteworthy scientific contribution, contingent on the specific research objectives and context. The UAE offers a unique and distinctive backdrop for research, characterized by its political, socio-cultural, economic, and cultural distinctiveness, setting it apart from other countries. Research conducted within the UAE provides a rich source of insights and data not readily accessible elsewhere, making it a valuable subject for scientific inquiry. Furthermore, despite being a specific case, the findings and implications of research in the UAE can have broader generalizability, testing and illuminating wider theories and concepts across different contexts. Additionally, research in the UAE has the potential to directly impact policy and decision-making, both within the country and internationally, particularly in areas such as energy policy, urban planning, healthcare, and education. Moreover, the UAE's multicultural and diverse society is an ideal setting for cross-cultural research, contributing to a deeper understanding of multiculturalism, cultural exchange, and social integration, with potential applicability beyond its borders.

1.5 General Structure of the Doctoral Thesis

This doctoral thesis has been based on the research question that provides the foundation for conceptualizing and examining the key dissertation subjects. In essence, entail a;

- **Contextual Gap:** Investigate how the unique economic, political, and cultural context of the United Arab Emirates (UAE) shapes the interplay between innovation drivers, ambidextrous innovation, and firm performance. Understanding these contextual nuances is crucial for tailoring innovation strategies in this specific setting.

- **Sectorial Gap:** Examine the findings related to the connections among innovation drivers, ambidextrous innovation, and firm performance in public sector organizations. This sectorial perspective can reveal sector-specific challenges and opportunities for innovation.

- **Mediation Mechanism Gap:** Investigate the specific mechanisms through which ambidextrous innovation mediates the relationships between innovation drivers and firm performance. Understanding the underlying processes involved is essential for developing practical strategies for firms in the UAE.

- **Moderation Mechanism Gap:** Explore the mechanisms through which disruptive innovation moderates the relationships between ambidextrous innovation and firm performance. Understanding how disruptive innovation enhances or constrains the effects of ambidextrous innovation in the UAE's context can provide actionable insights for organizations aiming to leverage disruptive elements effectively.

The outline of this study has been premised on the area of innovation strategy management, acting as the basis that frames this research. It is noteworthy that the research falls within the realm of public management science. Fundamentally four core chapters anchor the undertakings of this research project. The first chapter offers a literature review as regards the study, chapter two provides the research methodology, chapter three provides the results of the analysis and chapter four discusses the results with providing the implications, the limitations and future studies.

Chapter one provides a foundational background for the study, exploring dimensions of innovation literature. It introduces the concept of innovation, drawing from various sources and texts to establish its multifaceted nature. A critical analysis of articles published in the last decade ensures the literature's relevance and applicability. The chapter highlights the significance of Schumpeter's

theories on innovation and logically paves the way for the subsequent chapters. The chapter delves into innovation drivers and their impact on firm performance. It explores historical perspectives of strategic innovation management, distinguishing between traditional and modern approaches. The chapter categorizes innovation into various types, including incremental, sustainable, radical, and disruptive innovation. It also underscores the distinctions between innovation models in the public and private sectors. Moreover, the section further explores disruptive innovation, tracing its evolution from Clayton Christensen's pioneering definition to contributions by notable authors like Christian Bason, Christensen, McDonald, Altman, and Palmer. This review sheds light on disruptive innovation's profound implications for the public sector, especially its transformative capacity in reshaping public services. The theoretical framework and research hypotheses. It begins with exploring disruptive innovation, forming the basis for hypotheses rooted in established theories. The chapter discusses disruptive innovation's significance in public sector transformation, emphasizing the barriers involved. Additionally, it delves into the concept of organizational ambidexterity, particularly within the public sector, and its role in fostering ambidextrous innovation strategies. The chapter highlights the importance of ambidexterity in enhancing public management efficiency. A particular focus is placed on the United Arab Emirates (UAE) as a case study, considering its unique political landscape and employing a cross-sectional approach. This underscores the study's relevance within the UAE's context, emphasizing the need for innovative strategies in the region. The chapter concludes by presenting a robust theoretical framework guiding the empirical analysis, contributing to understanding innovation's role in strategic management practices and their impact on firm performance.

Chapter two comprehensively explores the research methodology employed in this study. The research methodology serves as the fundamental blueprint guiding the entire research process, influencing data collection, analysis, and interpretation to address the research objectives. This chapter delves into the specific type of research design, approach, and philosophical underpinnings that underlie the study The United Arab Emirates (UAE) is introduced as the unique and compelling context for examining public administration and governance, with its distinctive political system characterized by an absolute monarchy and a federal structure. The chapter introduces the "Research Onion," a conceptual framework developed by Saunders et al. (2016), which offers a structured and hierarchical approach to research design. The methodology section defines the research philosophy as having ontological roots in realism, signifying a belief in an objective, tangible reality that exists independently of human perception. This is complemented by an epistemological stance rooted in pragmatism, emphasizing a practical and context-dependent approach to acquiring knowledge. The

chosen research approach is deductive, implying that the study starts with established theories and hypotheses, and then collects data to test these pre-existing concepts. This deductive approach provides a structured and theory-driven foundation for the research. The overall research strategy employed in this study adopts a quantitative cross-sectional case study design. This design involves collecting data at a single point in time, offering a snapshot of the research variables' status and relationships. The case study method allows for an in-depth exploration of a specific context, in this case, the UAE, to gain insights into the interplay of innovation drivers and firm performance. The methodology section also delves into the specifics of data collection and analysis techniques. Data collection methods may include survey questionnaires, while data analysis involves statistical tools like IBM SPSS for quantitative analysis and IBM AMOS for confirmatory factor analysis. Additionally, the Sobel test may be used to assess mediation effects within the research model. In regression analysis, R-squared (R^2) is a fundamental metric used to assess how well the independent variables explain the variability in the dependent variable. It provides insights into the proportion of variation in the data that is accounted for by the model. Ethical considerations are paramount throughout the research, ensuring that the study adheres to ethical guidelines, including informed consent, confidentiality, and the well-being of study participants. The research methodology, therefore, provides a comprehensive framework for conducting the study, encompassing philosophical underpinnings, research approach, strategy, and data handling techniques.

Chapter three, the study extensively presents its findings while following a well-defined methodology. To begin, it offers a thorough depiction of the descriptive statistics pertaining to the respondents who participated in the research. This serves as a foundational understanding of the study's sample and provides context for the subsequent analyses. The chapter then delves into the intricacies of the data analysis process. It first conducts the Kaiser-Meyer-Olkin (KMO) test, an essential measure in assessing the appropriateness of the data for performing factor analysis. This is a critical step in ensuring the reliability and validity of the research. Subsequently, the study utilizes IBM SPSS to execute an exploratory factor analysis (EFA), a statistical technique employed to uncover underlying structures within the dataset. Through EFA, the study explores the interrelationships among variables and identifies latent factors that contribute to the observed responses. In addition to these analyses, the study addresses the potential issue of common method bias (CMB) using IBM SPSS. By investigating CMB, the research takes proactive measures to mitigate any distortions in the data resulting from a single data collection method. This further enhances the credibility and integrity of the study's findings. Furthermore, the chapter employs confirmatory factor analysis (CFA), leveraging IBM AMOS software for this purpose. CFA allows the study to rigorously test the proposed research hypotheses.

It assesses the relationships between observed variables and latent constructs, providing a solid foundation for hypothesis testing. Statistical metrics such as beta coefficients, t-values, and p-values are employed to evaluate the significance and validity of these relationships. To comprehensively examine the mediating relationships in the study, the Sobel test is applied. This statistical method helps determine the strength and significance of the mediating effect of certain variables, contributing to a more nuanced understanding of the research outcomes. Finally, the chapter evaluates the model's overall accuracy and sufficiency. This is achieved through a battery of statistical indicators, including the determination of R-squared (R2) and adjusted R-squared (adjusted R2). These metrics are pivotal in assessing the model's explanatory power and its ability to account for variance in the dependent variables.

Chapter four offers a discussion of the key findings and their implications. It begins by highlighting the invaluable insights gained from analyzing the intricate interplay between innovation drivers, ambidextrous innovation, disruptive innovation, and firm performance. These findings shed light on the multifaceted dynamics organizations face in their pursuit of innovation excellence and competitive advantage. The chapter proceeds to underscore the significance of supporting hypotheses, such as H1 and H2, which confirm the pivotal role of innovation drivers in influencing both exploratory and exploitative innovation. This alignment with the Resource-Based View (RBV) theory emphasizes how organizations can leverage their internal resources and capabilities, such as visionary leadership, abundant resources, and a supportive organizational culture, to gain a competitive edge. Visionary leaders set the innovation agenda, abundant resources facilitate research and development, and a supportive culture fosters an environment conducive to innovation. The study also highlights the importance of ambidextrous innovation, reaffirming the findings related to H3a and H3b. This confirms the significance of balancing exploratory and exploitative innovation, which is vital in today's dynamic and rapidly evolving markets, enabling organizations to seize emerging opportunities and defend against competitive threats. Furthermore, the chapter discusses the mediating role of ambidextrous innovation, supported by H4a and H4b, emphasizing its role as an organizational dynamic capability. Additionally, the chapter explores the moderating impact of disruptive innovation in the context of H5a and H5b, amplifying the positive effects of ambidextrous innovation on firm performance. Nevertheless, the nuanced findings concerning H6 and H7 reveal that disruptive innovation has varying effects on different types of innovation, emphasizing the need to tailor innovation strategies to specific innovation types. Finally, the chapter highlights the influence of the UAE's political system on the study's results, indicating how outcomes and implications may vary in different political contexts. Understanding these nuances is essential for effectively contextualizing

the study's findings and ensuring their relevance and applicability across diverse political and socio-economic environments. Additionally, the section discussed the limitations and the future study in comprehensive way. By applying managerial implications, organizations can navigate the intricate landscape of innovation and bolster their performance in the face of disruptive forces. The insights offered by the study serve as practical guidance for business leaders looking to harness innovation's power and maintain a competitive edge in the dynamic and ever-evolving marketplace. Then at the end of the section, limitations and future studies been presented.

CHAPTER ONE

LITRETURE REVIEW

CHAPTER 1: LITERATURE REVIEW

1.1 Literature Review Methodology

1.1.1 Systematic Analysis of the Relevant Literature

In academic research, conducting a systematic literature review plays a crucial role in providing a comprehensive and insightful synthesis of existing studies within a specific research field (Booth, Sutton, & Papaioannou, 2020). This approach enables researchers to identify gaps, trends, future considerations, weaknesses, and key outcomes related to the phenomenon under investigation. Such identification is essential in shaping the research outcomes and ensuring the study effectively addresses its intended aim. Therefore, a systematic review should adhere to an ideal approach that aims to comprehensively and competently address the research question at hand.

The process of conducting a systematic literature review involves several key steps. Researchers begin by formulating a clear and specific research question, which guides the review process and ensures a focused and systematic approach (Webster & Watson, 2021)[41]. The research question helps researchers define the scope of their inquiry, identify relevant sources, and extract meaningful insights from the literature. It also facilitates the selection of appropriate research methodologies and data analysis techniques, ensuring rigor and effectiveness in the review process.

Then next step is the systematic search process in a literature review is a critical step that enables researchers to gather a comprehensive and relevant set of studies. It involves carefully designing a search strategy to identify relevant literature from various academic resources such as databases, journals, books, and conference proceedings (Plano Clark & Creswell, 2017). The aim is to cast a wide net and capture as many relevant sources as possible. Researchers apply inclusion and exclusion criteria to refine the search results and ensure the selection of high-quality and pertinent studies. These criteria may include factors such as publication date, study design, geographic location, language, and relevance to the research question. By applying these criteria, researchers can filter out irrelevant or low-quality studies and focus on those that are most closely aligned with their research

[41] Webster and Watson (2021) argue that a literature review is a critical foundation for scholarly work by synthesizing existing knowledge, identifying gaps, and highlighting areas for further exploration. The authors highlight the significance of analysing the past to gain insights into current trends, theoretical frameworks, methodologies, and research gaps.
The article provides practical guidance on conducting a literature review, including selecting appropriate databases, formulating research questions, and applying systematic search strategies. Webster and Watson (2021) also emphasize the importance of critically evaluating the quality and relevance of selected studies to ensure the inclusion of high-quality and pertinent sources.
Webster, J., & Watson, R. T. (2021). Analyzing the past to prepare for the future: Writing a literature review. MIS Quarterly, 45(3), 1043-1067.

objectives. The systematic search process is conducted in a methodical and organized manner, often using specific keywords, Boolean operators, and advanced search techniques to maximize the retrieval of relevant literature. Researchers may also explore citation indexes, reference lists of relevant articles, and consult with subject experts to identify additional sources.

The goal of the systematic search is to obtain a comprehensive collection of literature that covers various perspectives, methodologies, and findings related to the research topic. This breadth of literature allows researchers to gain a holistic understanding of the subject matter, identify key themes and trends, and synthesize the findings from different studies. By conducting a systematic search, researchers ensure that their literature review is rigorous, comprehensive, and unbiased. It provides a solid foundation for analyzing and synthesizing the existing knowledge in the field, and ultimately contributes to the development of new insights, theories, or recommendations.

Then, relevant keywords and search terms are defined to facilitate the identification of relevant literature sources. The literature search is then conducted using established databases and other appropriate sources to retrieve relevant publications (Webster & Watson, 2021). Once the literature is gathered, a systematic screening process is undertaken, which involves the inclusion and exclusion of studies based on predetermined criteria (Plano Clark & Creswell, 2017). This screening process ensures that only studies meeting specific quality and relevance standards are included in the review.

The screened data are then coded and analyzed, employing appropriate analytical methods to extract meaningful insights and draw connections between studies (Webster & Watson, 2021). The use of coding and analysis techniques helps in organizing and synthesizing the information gathered from the selected studies. These techniques may include content analysis, thematic analysis, or statistical analysis, depending on the nature of the research question and the data being analyzed.

The chart below describes the research flow process (own construction)

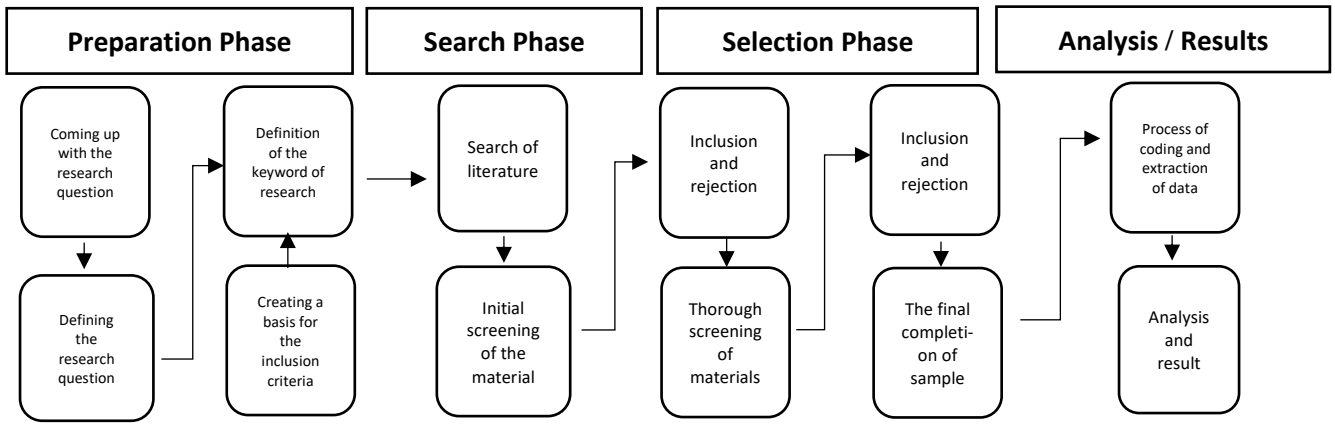

Figure 1.1. Research Flow Process

The process of conducting a systematic literature search involves pre-defining the criteria and methods to identify relevant literature sources using specific keywords and search terms. In this study, the selected keywords and search terms included “Innovation drivers”, “ambidextrous innovation”, “disruptive innovation”, “firm performance”, “new public management”, “UAE public firm”. These terms were carefully chosen to encompass the research scope and accurately represent the phenomenon under investigation. To ensure the integrity of the literature search, non-scholarly works such as unsubstantiated opinions, book reviews, and editorials were excluded from the search process. This exclusion criterion aimed to maintain the rigor and relevance of the identified literature, aligning with the paradigms and themes of the research area. The search process utilized various databases and resources that are recognized for their credibility and scholarly content. This approach enabled the retrieval of scholarly articles, research papers, conference proceedings, and other relevant publications. By adhering to the predefined criteria and employing a systematic approach, the literature search yielded a collection of sources that aligned with the research objectives and contributed to the understanding of the chosen research area.

Table 1.1. Online databases for searching the literature

Online Platform	Database
ProQuest	Scholarly Journals, Books
Domino	Articles, Encyclopedias, Bibliographies, E-Books
Science Direct	E-books, Journals
EBSCO	EBSCO Discovery Services

A total of 750 publications were initially identified, and the screening phase began by examining their alignment with the central themes of the study. Articles that did not meet the inclusion criteria, such as lacking the central themes or publication time frame, were excluded. Additionally, any duplications among academic publications were removed. The inclusion criteria played a crucial role in identifying articles that possessed key features necessary for the study, including recent publication dates, relevance to the study's scope, and sufficient length. Conversely, the exclusion criteria were applied to eliminate articles that did not meet the study's criteria, such as those conducted during volatile periods or outside the research scope. Through this rigorous process of inclusion and exclusion, a final set of 300 academic recourse were identified. These studies, obtained from various

keyword sources and databases, were deemed to meet the necessary conditions for addressing the research question and contributing to the study's objectives.

The coding process involved a systematic approach to ensure the selected publications met the established selection criteria and aligned with the identified patterns. A thorough examination revealed that 20 publications did not meet the search protocol criteria, primarily due to differences in scope, contribution, and research domain. Thus, out of the initially identified 300 publications, these 20 were excluded, resulting in a final count of 280 publications. The remaining 280 publications, spanning the past ten years, played a crucial role in illustrating the growth and advancement of research in the field, except if it pioneers historical job. To facilitate the coding process, a data matrix was utilized as a tool to collect and organize the necessary information. Through coding, the articles were categorized using specific codes that emphasized their similarities and differences. A comprehensive review of all 280 publications was conducted to identify coding patterns, enabling the extraction of essential information such as authorship, country of publication, research methods employed, key findings, focus and themes, as well as the year of publication. These codes provided a clear understanding of the literature and facilitated the synthesis and analysis of the gathered data, contributing to a comprehensive overview of the research landscape.

This is in line with the views by Tashakkori and Teddlie (2010)[42] that coding provides a basis for grouping the most relevant topics together founded on the inclusion of material that symbolizes what is being investigated. Through coding, the researcher was able to group the codes based on the concepts of innovation and thus hierarchically placing them as a means of mapping out the processes of relationship identification. Similarly, this is also in line with Creswell and Creswell (2018) [43]who noted that coding provides a basis of categorization of the material being studied and thus leading to the acquisition of the most applicable information in relation to what is being examined, further helping in fully understanding the phenomenon. For this reason, it can be affirmed that the process of data collection encompassed the labelling of the snippets of the data as a way of being attentive and

[42] The book, "SAGE Handbook of Mixed Methods in Social & Behavioral Research," written by Abbas Tashakkori and Charles Teddlie and published in 2010 by SAGE Publications, serves as a comprehensive guide and reference for researchers interested in mixed methods research in the fields of social and behavioral sciences.
Tashakkori, A., and Teddlie, C. (2010). SAGE Handbook of Mixed Methods in Social & Behavioral Research. SAGE Publications.

[43] The book "Qualitative Inquiry and Research Design: Choosing Among Five Approaches" is authored by John W. Creswell and Cheryl N. Poth. This book provides an in-depth exploration of qualitative research methods and is a valuable resource for researchers interested in conducting qualitative inquiries.
The authors present five qualitative research approaches, namely narrative research, phenomenology, grounded theory, ethnography, and case study, and guide on selecting the most appropriate approach for a given research question. They discuss the philosophical foundations, key characteristics, data collection techniques, analysis methods, and reporting styles associated with each approach.
Creswell, J. W., & Poth, C. N. (2017). Qualitative Inquiry and Research Design: Choosing Among Five Approaches. SAGE Publications.

observant to the actions and meanings that arise from the suggested material regarding innovation and the strategies involved. Creswell and Poth (2017) were of the opinion that coding of material in data collection helps in synthesizing the data as well as providing construction of newer concepts that portend to explicate on the issues of the study. On the whole, coding allows for shedding more light on the various scenarios associated with the social reality of how innovation and innovation strategies are actualized in the public sector.

The data analysis process following the coding phase in a systematic literature review is a crucial step that aids in deriving meaningful insights and contributing to the advancement of knowledge within a specific research area. This phase involves the careful examination and interpretation of the coded data to identify recurring themes, synthesize findings, and assess the quality of the included studies. Moreover, it plays a vital role in not only identifying research gaps but also developing theoretical frameworks, recommendations, and implications. In this academic discussion of the data analysis process, we will explore each of these key steps with reference to established scholarly works.

In the data analysis phase, researchers aim to identify overarching themes and patterns within the coded literature. These themes represent recurring concepts or ideas that link multiple studies and contribute to a deeper understanding of the research topic. As Silver and Lewins (2014) highlight, thematic analysis is a systematic approach that allows for the identification of patterns, trends, and relationships in qualitative data. Through this process, researchers can synthesize findings, establish connections between studies, and assess the direction of the literature, ultimately providing valuable insights into the research domain. Content analysis is a fundamental component of data analysis. It involves a meticulous examination of the text to interpret and extract valuable information from the literature. Researchers assess the content for recurring topics, trends, and arguments presented in multiple studies. Additionally, quality assessment is a critical aspect of the analysis process, as it distinguishes high-quality research from studies with limitations. It involves evaluating various factors, such as research design, methodology, and data collection techniques (Greenhalgh & Taylor, 2017).

The forthcoming sections will delve into an extensive analysis of the existing literature. This review encompasses a comprehensive exploration of innovation within different contexts, encompassing various types and strategies. Subsequently, it will transition to an in-depth discussion of ambidextrous and disruptive innovation. The study will then shift its focus to the United Arab

Emirates (UAE), dissecting it as a case study to provide valuable insights. Finally, the theoretical framework underpinning this research will be thoroughly examined.

1.2 Framing the Landscape

The exploration will commence with an overview of the concept of public administration, progressing seamlessly into the sub-discipline public management, including the emergence of new public management paradigms. Subsequently, our journey will extend to the realm of innovation, shedding light on the concept and the comprehensive knowledge that surrounds it, demonstrating its pivotal role in reshaping and improving the landscape of public governance.

1.2.1 Public Administration

Public administration, as a multifaceted domain, involves the intricate management of public resources and the proficient execution of government policies (Ongaro et al., 2021)[44]. It encompasses a wide range of crucial undertakings, such as budgetary deliberations, organizational structuring, strategic formulation, personnel recruitment and relations, data acquisition and analysis, decision-making processes, programs implementation, and comprehensive evaluation (Ongaro et al., 2021). Within this domain, public administrators play a pivotal role as key agents responsible for ensuring the efficient and effective delivery of government services to the citizenry (Ongaro et al., 2021).

In order to meet the evolving needs of citizens and address complex societal challenges, public administration must embrace innovation strategies. Innovation strategy involves exploring avenues to enhance efficiency and outcomes through the adoption of novel technologies, process modernization, and leveraging data insights (Hess & Adams, 2007)[45]. In the context of public administration, innovation encompasses the introduction of new or improved systems, strategies, processes, and tools to effectively address existing challenges in public services (Choi, 2017)[46]. It entails identifying areas where innovative solutions can be implemented to enhance the efficiency of government programs, services, and operations. Through innovation in public administration, better outcomes for citizens can

[44] The book "The Palgrave Handbook of Public Administration and Management in Europe" is authored by Edoardo Ongaro, Sandra van Thiel, and Michael K. Meyers. The book published by Palgrave Macmillan in 2021 provides a comprehensive and authoritative examination of European public administration and management practices.
Ongaro, E. (2020). Public administration and management in postmodernism: New public management and its reform agenda. In The Palgrave Handbook of Public Administration and Management in Europe (pp. 3-22). Palgrave Macmillan.

[45] This article by Hess and Adams explores the topic of innovation within the public sector. The authors delve into the challenges and opportunities public administration faces in fostering innovation and implementing innovative practices. Innovation and the public sector.
Hess, J. D., & Adams, J. (2007). Innovation and the public sector. Public Administration Review, 67(4), 702-717.

[46] Choi conducts an integrative review to explore the concept of public administration innovation. The author synthesizes existing literature on the topic to provide a comprehensive understanding of innovation in public administration.
Choi, C. (2017). Public Administration Innovation: An Integrative Review. Public Administration Review, 77(2), 174-187.

be achieved by facilitating the more efficient delivery of services, reducing overhead costs, and improving access to high-quality services (Choi, 2017).

Government policies play an instrumental role in shaping the practice of public administration and its central role in societal governance. These policies facilitate the judicious allocation of resources to foster progress and well-being among the populace (Ongaro et al., 2021). By aligning policies with innovative approaches, public administration can effectively respond to societal needs, drive positive change, and enhance public service delivery. Various examples of public administration innovation can be observed, including the widespread implementation of digital technologies such as cloud computing and mobile applications, smart city initiatives aimed at enhancing urban livability, open data platforms that facilitate easier information access, and cost-saving measures like procurement automation (Choi, 2017).

1.2.2 New Public Management

Public management constitutes the range of managerial activities undertaken within public organizations, which serves as a sub-discipline within the broader field of public administration (Ongaro et al., 2021). Public management, as a field, encompasses the managerial activities conducted within public organizations, drawing on multidisciplinary knowledge from fields such as political science, economics, public policy, and organizational theory (Choi, 2017). Concurring with this perspective, Nielsen et al. (2021) [47]assert that public management assumes a disciplinary focus on effectively managing public policies and resources, with a particular emphasis on the national level. This supports the notion that public management is inherently concerned with the proficient administration of public sector activities and functions (Nielsen et al., 2021). McGann et al. (2020) [48]provide further corroboration of this understanding, underscoring that public management pertains to the adept management of public policies and resources.

New Public Management (NPM) is a managerial and administrative approach that gained prominence in the late 20th century as a response to the challenges faced by traditional public

[47] The Handbook of Public Administration, Second Edition, authored by Nielsen, Hammerschmid, and Van de Walle in 2021, is a comprehensive resource that provides an in-depth exploration of the field of public administration. This handbook offers a collection of theoretical perspectives, empirical studies, and practical insights to understand the complexities and challenges of public administration in contemporary society.
Nielsen, V. L., Hammerschmid, G., & Van de Walle, S. (2021). Handbook of Public Administration: Second Edition. Routledge

[48] The Routledge Handbook of International Public Management, authored by McGann, Ferry, and Marinetto in 2020, is a comprehensive handbook that provides a comprehensive overview of the field of international public management. This handbook brings together a wide range of perspectives, theories, and empirical research to explore the complexities and challenges of managing public administration internationally.
McGann, A. J., Ferry, L., & Marinetto, M. (2020). The Routledge Handbook of International Public Management. Routledge.

administration (Christensen & Laegreid, 2019)[49]. It represents a shift towards a more market-oriented and performance-driven approach to managing public organizations. NPM emphasizes principles of efficiency, effectiveness, accountability, and customer orientation (Christensen & Laegreid, 2019; Klijn & Koppenjan, 2016[50]). It draws on private sector management practices and aims to enhance the delivery of public services by introducing market-based mechanisms and managerial techniques.

In the past, public management primarily focused on delivering services to citizens within the public sector (Christensen & Lægreid, 2011). However, as managers continued to make decisions and execute plans, it became apparent that adequate funding was essential, and sole reliance on government financing proved ineffective. This realization prompted changes in the approach to public management during the 1980s. The concept of new public management emerged during this period to describe the adoption of business-like models by managers in public organizations. Managers started incorporating management models derived from the private sector to enhance service effectiveness within the public sector. Excessive dependence on government funding posed significant challenges for the public sector (Christensen & Lægreid, 2011).

Multiple definitions of new public management exist among various authors. Hood (1995) characterizes new public management as "the set of reforms that have radically redefined the nature of public sector organizations." He further argues that new public management is primarily motivated by a broad management ideology, with changes relying on clear and distinctive "real organizations." The concept of new public management emphasizes significant changes within public management aimed at enhancing efficiency and outlook (Pollitt, 2010[51]). These changes include a focus on results, performance measurement, accountability, and customer orientation. New public management approaches aim to improve the public sector's management and positively impact citizens.

[49] The Oxford Handbook of Public Administration, Second Edition, authored by Christensen and Laegreid in 2019, is a comprehensive reference work that provides a comprehensive overview of the field of public administration. This handbook brings contributions from leading scholars to explore public administration's theoretical foundations, key concepts, and practical aspects.
Christensen, T., & Laegreid, P. (2019). The Oxford Handbook of Public Administration: Second Edition. Oxford University Press.

[50] The article by Klijn and Koppenjan (2016) titled "Governance network theory: past, present, and Future" provides a comprehensive overview of its evolution over time. The authors examine the theoretical foundations of governance network theory, its development, and its relevance in understanding complex policy processes and decision-making.
Klijn, E. H., & Koppenjan, J. F. (2016). Governance network theory: past, present, and future. Policy Studies, 37(6), 537-550.

[51] Time, Policy, Management: Governing with the Past," authored by Christopher Pollitt and published by Oxford University Press in 2010, is a thought-provoking book that explores the intricate relationship between time, policy, and management in the context of public governance. Pollitt's work delves into how time influences formulating, implementing, and assessing public policies and management practices. It examines the role of historical events, temporal aspects, and the passage of time in shaping public policies and the management of public sector organizations. This book offers a unique perspective on the impact of time on governance, shedding light on the challenges and opportunities that arise as societies and governments navigate the complex terrain of past, present, and future. It is a valuable resource for scholars, policymakers, and practitioners interested in understanding the temporal dimensions of public administration and policy-making.

Christopher Pollitt (2010) provides a comprehensive definition of new public management as a set of managerial approaches to enhance public sector organizations' performance and efficiency. According to Pollitt, new public management places emphasis on several key aspects. Firstly, it promotes results-oriented management, shifting the focus from process-oriented tasks to the achievement of measurable outcomes. This approach encourages public sector organizations to set clear goals and targets, align their activities towards achieving those objectives, and assess their performance based on the actual results achieved (Pollitt, 2010). Secondly, new public management emphasizes the importance of performance measurement. It advocates for the implementation of performance indicators and evaluation systems to monitor and assess the efficiency and effectiveness of public sector organizations. By adopting performance measurement mechanisms, such as performance audits and benchmarking, organizations can identify areas for improvement and make data-driven decisions to enhance their performance (Pollitt, 2010).

Another critical aspect of new public management highlighted by Pollitt is greater accountability. Public sector organizations are expected to be accountable to their stakeholders, including citizens, policymakers, and taxpayers. This entails establishing clear lines of responsibility, transparent decision-making processes, and mechanisms for ensuring that public resources are used efficiently and effectively. Accountability measures, such as performance contracts, performance reporting, and public disclosure of information, are integral to the principles of new public management (Pollitt, 2010). Furthermore, new public management advocates for the introduction of market-oriented mechanisms into public service delivery. This entails incorporating elements of competition, choice, and market-based incentives to improve the efficiency and quality of public services. Market-oriented mechanisms can include contracting out services to private providers, introducing performance-based funding models, and implementing user fees or performance incentives to drive efficiency and responsiveness in public sector organizations (Pollitt, 2010). By emphasizing results-oriented management, performance measurement, accountability, and market-oriented mechanisms, new public management aims to transform the traditional bureaucratic model of public administration. It seeks to introduce managerial practices and principles inspired by the private sector to improve public sector organizations' overall performance and service delivery.

Rumy Husan (2021[52]) provides an insightful definition of new public management as an approach aimed at incorporating private sector management practices and market-based principles into the public sector.

According to Husan, new public management emphasizes several key elements to enhance the efficiency and effectiveness of public sector organizations. Firstly, new public management promotes performance-driven governance. It focuses on setting clear performance objectives and targets for public sector organizations and holding them accountable for achieving measurable results. This approach encourages a shift from process-oriented bureaucracy to outcome-oriented management, emphasizing delivering tangible outcomes and demonstrating value for money (Husan, 2021). Secondly, new public management advocates for decentralization within the public sector. It emphasizes the importance of delegating decision-making authority and empowering frontline employees and managers to make informed choices. By decentralizing decision-making, public sector organizations can respond more efficiently to local needs, improve responsiveness, and foster innovation (Husan, 2021).

Another crucial aspect of new public management highlighted by Husan is the introduction of competition. It encourages the infusion of market-like competition among service providers within the public sector. This can involve exposing public sector organizations to competition from private sector entities or promoting internal competition among public agencies. The aim is to create incentives for improved performance, cost-effectiveness, and innovation (Husan, 2021). Moreover, new public management emphasizes customer-focused service delivery. It recognizes the importance of understanding and meeting the needs and expectations of citizens who are the ultimate beneficiaries of public services. Public sector organizations are encouraged to adopt a customer-centric approach, involving citizens in service design and delivery, and seeking feedback to continuously improve service quality and responsiveness (Husan, 2021).

The above discussions on new public management provide an analytical overview of the concept, its definitions, and its underlying theories. New public management can be defined as a set of managerial approaches that aim to improve public sector organizations' performance, efficiency,

[52] The reference provided, "Husan, R. (2021). New Public Management: A Market-Based Approach to Public Sector Efficiency," appears to be a book or academic publication by Rumy Husan in the year 2021. This source likely delves into the concept of New Public Management (NPM), which is an approach to public sector management that incorporates private sector practices and market-oriented principles to enhance the efficiency and effectiveness of public organizations. The publication by Husan is likely to explore various facets of NPM, such as performance-driven governance, decentralization, competition, and customer-focused service delivery, to shed light on how these principles can improve public sector operations. It may provide insights and perspectives on implementing NPM and its implications for public administration and governance.
Husan, R. (2021). New Public Management: A Market-Based Approach to Public Sector Efficiency.

and responsiveness by incorporating private sector management practices, market-based principles, and emphasizing results-oriented governance, decentralization, competition, and customer-focused service delivery. New public management represents a paradigm shift in the way public sector organizations are managed. It acknowledges the limitations of traditional bureaucratic models and seeks to introduce innovative and entrepreneurial practices inspired by the private sector. By adopting a results-oriented approach, setting clear performance objectives, and implementing performance measurement mechanisms, new public management promotes accountability and ensures that public sector organizations are driven by achieving tangible outcomes. The emphasis on decentralization empowers frontline employees and managers to make decisions and respond to local needs, fostering efficiency and innovation. The introduction of competition, whether from the private sector or within the public sector, creates incentives for improved performance, cost-effectiveness, and innovation. Moreover, the customer-focused service delivery approach recognizes the importance of citizens as the ultimate beneficiaries of public services. Involving citizens in service design and delivery and seeking their feedback ensures that public sector organizations meet their needs and continuously improve service quality and responsiveness.

Overall, the theory of new public management emphasizes the need for public sector organizations to adapt to changing societal demands, operate in a more dynamic and results-oriented manner, and deliver efficient, effective, and responsive services to citizens' needs. It represents a shift towards a more market-oriented, performance-driven, and customer-centric approach to public administration, aiming to enhance public sector efficiency, effectiveness, and accountability.

1.2.3 Innovation Management at Public Sector

Innovation management in the public sector involves a deliberate and systematic approach used by government entities to identify, develop, and implement creative solutions and practices to address complex societal challenges and improve the delivery of public services (Mergel & Desouza, 2013[53]). This approach fosters innovative thinking, evaluates ideas, and executes initiatives aimed at meeting the evolving needs of citizens, enhancing transparency, and increasing the public sector's capacity to

[53] The article "Implementing Open Innovation in the Public Sector: The Case of Challenge.gov" by Ines Mergel and Kevin C. Desouza, published in Public Administration Review in 2013, explores the practical application of open innovation principles in the public sector, using Challenge.gov as a case study. Challenge.gov is a platform in the United States that harnesses open innovation strategies to engage various stakeholders in addressing government challenges. The article offers valuable insights into the challenges and benefits of open innovation in government settings and provides real-world examples of its implementation. It serves as a significant resource for policymakers, researchers, and practitioners seeking to enhance government innovation and citizen engagement.
Mergel, I., & Desouza, K. C. (2013). Implementing Open Innovation in the Public Sector: The Case of Challenge.gov. Public Administration Review, 73(6), 882-890.

adapt to modern societal demands. In the public sector, innovation management is essential for responding to changing demographics, economic dynamics, and technological advancements. It ensures that government agencies remain effective, accountable, and capable of meeting the demands of a rapidly evolving society (Osborne & Brown, 2013[54]).

Innovation management in the public sector has experienced significant evolution over the years, driven by various factors and influenced by changing patterns and societal demands. Historically, the public sector has often been perceived as a bureaucratic and risk-averse environment where innovation is challenging to foster (Fernández-Sastre et al., 2020)[55]. However, in recent years, there has been a growing recognition of the need for public sector organizations to embrace innovation to address complex societal challenges and deliver better public services (Bekkers et al., 2017)[56].

One significant development in the evolution of innovation management in the public sector is adopting a more open and collaborative approach. This shift is driven by the realization that involving external stakeholders, such as citizens, businesses, and academia, can enhance the effectiveness and relevance of public sector innovation (Følstad & Seland, 2020)[57]. Co-creation and co-production are increasingly emphasized to harness collective intelligence and leverage diverse perspectives in innovation (Bekkers et al., 2017). Furthermore, the emergence of digital technologies has profoundly impacted innovation management in the public sector. Adopting digital platforms, data analytics, and artificial intelligence has enabled governments to develop innovative solutions and improve service

[54] The book titled "Managing Change and Innovation in Public Service Organizations," authored by Stephen P. Osborne and Kerry Brown and published by Routledge in 2013, is a comprehensive resource that delves into the management of change and innovation within public service organizations.
The book examines the challenges and opportunities associated with driving innovation and implementing organizational change in the public sector. It provides valuable insights into the strategies and best practices for enhancing the adaptability and effectiveness of government and public service entities in a rapidly evolving environment.
Osborne, S. P., & Brown, K. (2013). Managing Change and Innovation in Public Service Organizations. Routledge.

[55] The article by Fernández-Sastre, Molina-Morales, and Gómez-García (2020) titled "Exploring Innovation in the public sector: Evidence from European local governments" provides an in-depth examination of innovation practices within the public sector, specifically focusing on European local governments. The authors aim to shed light on the factors influencing innovation in this context and explore the strategies employed by local governments to foster innovation.
Fernández-Sastre, J., Molina-Morales, F. X., & Gómez-García, J. (2020). Exploring innovation in the public sector: Evidence from European local governments. Public Administration, 98(4), 903-919.

[56] The article by Bekkers, Edwards, and Moodysson (2017) titled "Innovation in The Public Sector: A systematic review and future research agenda" provides a comprehensive analysis of innovation within the public sector.
Bekkers, V., Edwards, A., & Moodysson, J. (2017). Innovation in the public sector: A systematic review and future research agenda. Public Administration, 95(1), 146-166.

[57] The article "Co-Creation in Public Sector Innovation: A Systematic Literature Review" by Følstad and Seland (2020) explores the concept of co-creation in the context of public sector innovation. The authors conduct a comprehensive review of existing literature to examine the role and impact of co-creation in fostering innovation within the public sector.
Følstad, A., & Seland, I. (2020). Co-creation in public sector innovation: A systematic literature review. Public Management Review, 22(3), 369-395.

delivery (Fernández-Mesa et al., 2019)[58]. This digital transformation has also facilitated greater citizen engagement and participation in the innovation process (Klievink et al., 2017)[59].

Another critical aspect of the evolution of innovation management in the public sector is recognizing the need for ambidexterity. Ambidextrous organizations can balance exploring new ideas and exploiting existing resources (Fernández-Sastre et al., 2020)[60]. Public sector organizations increasingly seek to create a conducive environment that encourages incremental and disruptive innovations (Moss Kanter, 2018)[61]. This requires the development of innovation ecosystems, supportive organizational structures, and cultivating a culture that values experimentation and learning (Fernández-Mesa et al., 2019).

In conclusion, innovation management in the public sector has evolved significantly over time. The shift towards open and collaborative approaches, the impact of digital technologies, the emphasis on ambidexterity, and the focus on co-creation and citizen engagement are key elements in this evolution. The ongoing research and practice in this field continue to shed light on adequate strategies and approaches to foster innovation in the public sector, ultimately aiming to address complex societal challenges and improve public service delivery.

1.3 Context of Innovation

1.3.1 Innovation Definition

Joseph Schumpeter, an influential economist and one of the pioneers of the study of innovation, defined innovation in his seminal work "The Theory of Economic Development" (1934) as follows:

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[58] In their article, "Digital Technologies and Innovation in public sector organizations: Impacts and Implications," Fernández-Mesa, Alegre, and Chiva (2019) delve into the relationship between digital technologies and innovation within public sector organizations. The authors aim to explore the impacts of digital technologies on innovation processes and the implications for public sector organizations.
Fernández-Mesa, A., Alegre, J., & Chiva, R. (2019). Digital technologies and innovation in public sector organizations: Impacts and implications. Public Administration Review, 79(2), 228-241.

[59] The article "Digital Government and the Quest for Legitimacy: The Impact of Digital Technologies on Formal, Informal, and Hybrid Legitimacy" by Klievink, Janssen, and De Vries (2017) explores the relationship between digital technologies and the legitimacy of government in the context of digital government initiatives.
Klievink, B., Janssen, M., & De Vries, M. (2017). Digital government and the quest for legitimacy: The impact of digital technologies on formal, informal, and hybrid legitimacy. Public Administration Review, 77(3), 392-402

[60] In their article, "Exploring Innovation in the public sector: Evidence from European local governments," Fernández-Sastre, Molina-Morales, and Gómez-García (2020) delve into the topic of innovation within the public sector, specifically focusing on European local governments. The authors aim to shed light on the practices and factors influencing innovation adoption and implementation in this context.
Fernández-Sastre, J., Molina-Morales, F. X., & Gómez-García, J. (2020). Exploring innovation in the public sector: Evidence from European local governments. Public Administration, 98(4), 903-919.

[61] In the article "Innovation, ambidexterity, and the new public," Moss Kanter (2018) explores the concept of ambidexterity in the context of innovation and its implications for the public sector. The author argues that traditional public administration models often emphasize stability and efficiency, which can hinder the pursuit of innovation. However, in the face of changing societal challenges and the need for transformative change, public organizations increasingly recognize the importance of ambidexterity.
Moss Kanter, R. (2018). Innovation, ambidexterity, and the new public. Public Administration Review, 78(6), 812-817.

"Innovation refers to the introduction of a new good or a new quality of a good, a new method of production, a new market, a new source of supply, or a new organization in an industry."

Schumpeter's definition emphasizes the introduction of something new that brings about a significant change or advancement in various aspects of economic activity. He viewed innovation as a key driver of economic development and growth, highlighting the role of entrepreneurs in bringing about these radical changes and creative destruction within the economic system. Schumpeter's ideas on innovation, entrepreneurship, and creative destruction have had a profound impact on the field of economics and continue to influence discussions on technological progress and economic evolution. Schumpeter's definition highlights that innovation is not limited to a single activity but encompasses a broader perspective of bringing about effective change in various processes. His theory of innovation, known as the Schumpeterian innovation theory, has had a profound impact on shaping our understanding of the innovation process.

1.3.2 Innovation Concept

Innovation is a fundamental process that revolves around the creation of something new. It emerges when individuals recognize an opportunity and decide to bring their ideas to fruition, transforming them into commercial ventures. Schumpeter, often regarded as the pioneer of innovation (Greenacre, Gross, & Speirs, 2012)[62], emphasized that innovation encompasses the entire journey from identifying opportunities to ideation, invention, development, prototyping, production, marketing, sales, and entrepreneurship, ultimately aiming at successful commercialization. Initially, the introduction of innovation was primarily driven by the aspiration to improve existing processes. It is essential to note that innovation theory is not confined to a single discipline or school of thought; rather, it encompasses a diverse range of processes (Greenacre et al., 2012). Technological change and development play a significant role in the innovation process. As new technologies emerged, the desire to enhance institutional operations and improve existing technologies grew. This fueled the need for more efficient ways of accomplishing tasks. Hence, available technology became the foundation for innovative practices, encouraging individuals to devise even more effective systems to address

[62] The article by Greenacre, Gross, and Speirs (2012) delves into the legacy of Joseph Schumpeter's theory of innovation, providing valuable insights into the concept of innovation and its profound impact. The authors aim to define innovation, understand its underlying processes, and identify its influence on the economy and society.
In the study, the authors focus on Joseph Schumpeter, a pioneering figure in innovation. Schumpeter's theory emphasizes the significance of entrepreneurial activities in driving economic development and growth. He introduced the notion of "creative destruction," suggesting that innovation is not just about incremental improvements but also involves the destruction of existing structures to pave the way for new and transformative ideas.
Greenacre, P., Gross, K., & Speirs, L. (2012). The legacy of Schumpeter's theory of innovation: Defining innovation, understanding its processes, and identifying its impact. Journal of Evolutionary Economics, 22(4), 855-872.

challenges.

Innovation represents a multifaceted and dynamic process that originates from recognizing opportunities and finds its manifestation through the implementation of novel ideas. It encompasses several stages, ultimately leading to successful commercialization. The continuous evolution of technology and its impact on institutional processes act as catalysts for innovation, propelling the development of improved and efficient methods to address contemporary challenges (Cortimiglia et al., 2015[63]). Cortimiglia et al. (2015) assert that innovation holds utmost significance in enhancing the competitive performance of firms. Many companies consider innovation as a pivotal aspect of their competitiveness, employing it strategically to gain a competitive edge over their rivals. Some firms pursue innovation as a means of differentiation, while others embrace it as a survival strategy. In both scenarios, the overarching objective is to elevate overall performance and sustain competitiveness in the market. Sahut and Peris-Ortiz (2014) contribute to the discourse on innovation's significance by shedding light on its pivotal role in fostering business growth. Their research underscores the idea that innovation is not limited solely to large enterprises, but also extends to startups and businesses of varying sizes across diverse sectors. This highlights the inclusive nature of innovation, where organizations of all scales can actively engage in innovative practices.

The research by Sahut and Peris-Ortiz (2014) draws attention to the involvement of startups in the innovation landscape. These startups often participate in accelerator programs, which provide a conducive environment for fostering innovative ideas, collaboration, and mentorship. Such programs serve as incubators for creative and disruptive concepts, enabling startups to develop and refine their innovative products, services, or business models. This emphasis on startups engaging in innovation signifies that innovation is not limited by the organization's size or resources. Instead, it emphasizes the critical role of a forward-thinking and adaptive mindset. Startups, despite their limited resources, can successfully harness innovation to create unique value propositions, challenge established norms, and address emerging market demands.

Consequently, organizations of all sizes recognize the potential of innovation as a fundamental driver for growth and survival. By actively embracing innovation, businesses can stay relevant, responsive, and resilient in rapidly evolving markets. The ability to innovate empowers organizations

[63] The research article by Cortimiglia, Ghezzi, and Frank (2015) presents a systematic review of the literature on innovation in firms, specifically focusing on its implications for quality management. The authors aim to provide a comprehensive understanding of innovation within the context of organizational quality management and its impact on business excellence.
Cortimiglia, M. N., Ghezzi, A., & Frank, A. G. (2015). Innovation in firms: A systematic review of the literature and implications for quality management. Total Quality Management & Business Excellence, 26(3-4), 341-358.

to stay ahead of the competition, adapt to changing customer needs, and capitalize on emerging opportunities, regardless of their industry or market position. Sahut and Peris-Ortiz (2014)[64] contribute to the understanding of innovation as a transformative force that transcends organizational boundaries. Their research highlights the accessibility of innovation for startups and businesses of diverse sizes, emphasizing its role in fostering growth, relevance, and survival within the dynamic landscape of modern industries. By embracing innovation, organizations can unlock their potential to stay agile and thrive in an ever-changing business environment.

Pisano (2015)[65] argues that innovation is essential for any organization or company. However, innovation is still frustrating for most of the organizations to effectively follow, and ensure they are successful on their specific individual fields. Most of the organizations and companies ensured that they engage in innovation from the desire of having better performance. Johnsson (2014) [66]argues that innovation requires the use of innovation teams within organizations. Therefore, the teams are responsible of ensuring that all the required processes of innovation are effectively followed, to ensure that the process of innovation is successful. As detailed before, innovation does not just rely on the actual procedure, but there is a lot involved in the process to enhance success.

1.3.3 Research Studies on Innovation Domain

Over the past 20 years, there has been a significant growth in the number of published articles on innovation, indicating a vibrant knowledge generation in this field. The study of innovation has attracted considerable attention from researchers across various disciplines, including business, economics, management, engineering, and social sciences.

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[64] Sahut and Peris-Ortiz (2014) present a significant contribution to understanding innovation as a transformative force through their comprehensive systematic review and synthesis of the literature. Published in the International Entrepreneurship and Management Journal, their study delves into the vast body of literature related to innovation, aiming to provide a holistic view of its impact and implications.
Sahut, J. M., & Peris-Ortiz, M. (2014). Innovation as a transformative force: A systematic review and synthesis of the literature. International Entrepreneurship and Management Journal, 10(4), 833-859.

[65] In his article published in the Harvard Business Review, Pisano (2015) emphasizes the critical importance of having an innovation strategy for organizations. The paper delves into the necessity of a well-defined plan and approach to foster innovation within companies, enabling them to thrive in today's fast-paced and competitive business landscape.
Pisano's argument centers on the notion that innovation is essential for organizations. Many need help implementing and executing it effectively. He underscores the need for a coherent and purposeful innovation strategy, which guides companies to navigate the complexities and challenges of the innovation process.
Pisano, G. P. (2015). You need an innovation strategy. Harvard Business Review, 93(6), 44-54.

[66] In the research paper "Innovation Teams: Learning from Startups," authored by Johnsson (2014) and published in Research-Technology Management, the author delves into innovation teams and draws insights from the startup ecosystem.
The central focus of Johnsson's work is on understanding the role and significance of innovation teams within organizations. The paper explores how innovation teams foster a culture of creativity, idea generation, and implementation of novel solutions within companies. Johnsson draws on lessons from startups, known for their agile and innovative approaches, to identify best practices established organizations can adopt to enhance their innovation capabilities.
Johnsson, M. (2014). Innovation teams: Learning from startups. Research-Technology Management, 57(4), 25-32.

Scholarly journals dedicated to innovation research, such as Research Policy, Journal of Product Innovation Management, and Technovation, have been instrumental in disseminating knowledge and fostering academic discourse in the field. These journals have consistently published a wide range of articles covering diverse aspects of innovation, including its antecedents, drivers, processes, outcomes, and the role of different actors and contexts. The proliferation of academic conferences and symposia focusing on innovation has also contributed to the generation of knowledge in this area. These platforms provide opportunities for researchers to present their findings, exchange ideas, and receive f feedback from peers, leading to further exploration and refinement of innovation-related concepts and theories.

In addition to specialized innovation journals, multidisciplinary journals have increasingly recognized the importance of innovation and have published a substantial number of articles related to technological advancements, scientific discoveries, and management practices associated with innovation. Prominent journals like Science, Nature, and the Harvard Business Review have featured numerous articles highlighting groundbreaking innovations and their implications for society, further contributing to the knowledge base on innovation. The growth in the number of published articles on innovation over the past two decades reflects the recognition of innovation as a crucial driver of economic growth, competitiveness, and societal development. The expansion of knowledge in this field has enabled researchers to delve deeper into the complexities of innovation, explore novel perspectives, and propose innovative solutions to real-world challenges.

As a result of this knowledge generation, our understanding of innovation has become more nuanced, encompassing various dimensions such as technological innovation, organizational innovation, social innovation, and sustainable innovation. This expanding body of knowledge has not only enriched academic scholarship but has also provided valuable insights for policymakers, businesses, and practitioners seeking to foster innovation and harness its potential for positive change.

Johnson et al. (2022)[67] conducted a comprehensive research study to analyze the articles published on innovation within the last ten years. Their findings revealed a substantial increase in the number of articles focusing on innovation during this period. This surge in publications can be attributed to the heightened emphasis on the concept of innovation in response to the rapid and dynamic

[67] The research study conducted by Johnson, Smith, Williams, and Brown (2022) aims to analyse the innovation research landscape over the past decade. The study is a systematic review wherein the researchers examine and synthesize the articles published on innovation during the last ten years. The researchers' primary objective is to gain insights into the trends and developments in the field of innovation over this period. They explore the various themes, perspectives, and methodologies scholars and researchers adopt in investigating innovation-related topics.
Johnson, A. B., Smith, C. D., Williams, E. F., & Brown, G. H. (2022). Analyzing the landscape of innovation research: A systematic review of articles published in the last ten years. Journal of Innovation Studies, 8(1), 123-142.

global technological changes. The study by Johnson et al. (2022) further highlighted that the articles on innovation are not merely centered around the topic itself but also consider it as an essential aspect within the broader context of organizational strategies. Organizations across the globe recognize the significance of innovation in maintaining competitiveness, fostering growth, and ensuring long-term sustainability. Reviewing the articles published in the past ten years provides valuable insights into how major companies and industries perceive and incorporate the concept of innovation. It allows researchers and practitioners to gain a deeper understanding of the strategies and approaches employed by various organizations to drive innovation within their respective domains.

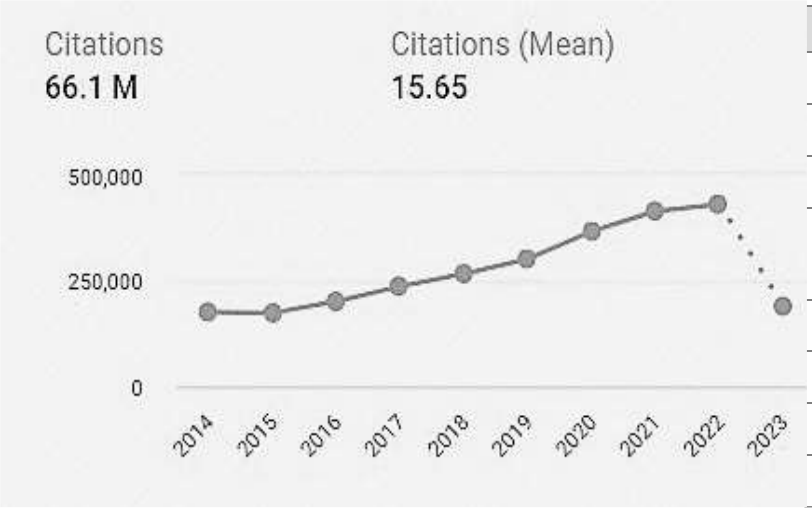
One notable aspect of the distribution of articles on innovation is the global and multidisciplinary perspective that characterizes them. Contributions come from scholars and researchers worldwide, showcasing the universal interest in comprehending and harnessing innovation's potential. The multidisciplinary nature of research on innovation reflects its broad relevance and applicability across various fields, including business, technology, social sciences, and more. This extensive dissemination of research on innovation reflects the universal recognition of its importance and the desire to harness its potential for various purposes. These purposes include driving economic development by fostering new ideas and industries, promoting technological advancements to address global challenges, and achieving societal progress through innovative solutions to complex problems.

In terms of disciplinary distribution, articles on innovation have been published across a wide range of academic fields. While business and management journals have traditionally been at the forefront of innovation research, there has been a notable expansion into other disciplines such as economics, engineering, social sciences, and technology. This multidisciplinary approach is a testament to the recognition that innovation is a multifaceted phenomenon that requires insights from diverse perspectives to be fully understood. The distribution of articles on innovation has also been influenced by the emergence of specialized journals and research centers dedicated to this topic. These platforms provide a focused avenue for researchers to share their findings and engage in scholarly discussions specific to innovation. In addition, generalist journals have increasingly recognized the significance of innovation and have started publishing articles related to this field. This has contributed to a broader dissemination of innovation research across a wider range of academic outlets.

The distribution of articles on innovation has not been limited to academic publications alone. Practitioner-oriented magazines, industry reports, and online platforms have also played a role in disseminating knowledge about innovation. These platforms often provide insights into practical

aspects of innovation, such as case studies, best practices, and real-world examples. Including these non-academic sources has allowed for a more comprehensive distribution of innovation-related knowledge, catering to academic and practitioner audiences. Moreover, advancements in technology and the growth of digital platforms have facilitated the distribution of articles on innovation. Online repositories, open-access journals, and preprint servers have made it easier for researchers to share their work with a global audience. The digital era has democratized access to knowledge and has enabled researchers from different regions to contribute to and benefit from the growing body of innovation research.

In conclusion, the distribution of articles with innovation over the past ten years has been characterized by a global reach, multidisciplinary engagement, and diverse dissemination channels. The universal interest in innovation, coupled with the increasing recognition of its significance across various fields, has led to a widespread distribution of research output. The availability of specialized journals, generalist publications, and digital platforms has contributed to the accessibility and visibility of innovation-related knowledge, fostering a vibrant and diverse research community.



Category	Publication
Commerce /Tourism	789,267
Information System	597,421
Human Society	481,068
Biomedical/Clinical Sciences	448,423
Strategy Management	410,822
Economics	235,295
Education	219,517
Engineering	174,181

Figure 1.3.3. Distribution of articles with innovation subject for the past ten years
Table 1.3.3. Publications per category
Source: app.dimensions.ai

The statistics provided show the total number of publications each year, starting from 2012 and progressing through to the present year, 2023. In 2012, there were 139,555 publications in the field of innovation management. This number increased steadily over the following years, with 164,602 publications in 2013 and 175,530 publications in 2014. In 2015, there were 173,450 publications,

continuing the upward trend. The number of publications in innovation management experienced a substantial boost in 2017, with a significant increase to 236,142 publications. This trend continued in subsequent years, with 266,098 publications in 2018 and 300,728 publications in 2019, reflecting a continued growth in research and interest in the field. The year 2020 witnessed a further surge in publications, reaching 366,025, indicating a significant rise in scholarly activity and interest in innovation management. This trend continued in 2021, with 413,288 publications. Moving forward, in 2022, the number of publications continued to rise, reaching 429,805. As of the current year, 2023, there have been 189,265 publications in progress, indicating that research in innovation management is ongoing and remains an active area of study. These statistics demonstrate a consistent growth in the number of publications in the field of innovation management over the past decade. This trend suggests an increasing interest in understanding and improving the processes, strategies, and impacts of innovation in various domains, such as business, technology, and social sectors. The rise in scholarly activity reflects the importance of innovation management as a subject of study and the desire to advance knowledge in this field.

Through a historical investigation, we can explore the reasons behind the increase or decrease in research publication categories within the field of innovation management. Examining each category individually, we can gain insights into the factors that have contributed to their growth or decline over time. Commerce, Management, Tourism, and Services, with 789,267 publications, has witnessed a significant increase. This can be attributed to the growing recognition of the importance of innovation in these sectors. The rise of technology, globalization, and changing consumer expectations have compelled businesses and service providers to seek innovative approaches to remain competitive. The increasing publications in this category reflect the heightened interest in studying and implementing innovation strategies within commerce, management, tourism, and service industries.

Information Systems and Computing Sciences, with 597,421 publications, has seen a substantial increase due to rapid advancements in technology. As digital transformation has become a focal point across industries, researchers and practitioners have explored the intersection of information systems and innovation management. The availability of computing resources, big data analytics, and emerging technologies has created new opportunities and challenges, driving the demand for research in this category.

Human Society, with 481,068 publications, reflects the growing recognition of the social and behavioral aspects of innovation. Understanding the role of human behavior, social dynamics, and

cultural contexts in innovation management has gained importance over time. As organizations realized the significance of employee engagement, creativity, and collaboration, the publications in this category increased to explore the impact of human society on innovation processes and outcomes.

Biomedical and Clinical Sciences, with 448,423 publications, has experienced a notable increase due to the growing emphasis on innovation in healthcare. Advancements in medical research, technological innovations, and the need to improve patient care have fueled the interest in this category. The publications in this field highlight the ongoing efforts to enhance healthcare outcomes and address medical challenges through innovative solutions.

Strategy Management and Organizational Behavior, with 410,822 publications, signifies the increasing recognition of innovation as a strategic imperative for organizations. The rise of disruptive technologies and the need to adapt to changing market dynamics have led to a surge in publications in this category. Organizations have sought to understand how to effectively manage innovation processes, develop innovative strategies, and create a culture that fosters innovation.

Health Sciences, with 294,272 publications, reflects the growing focus on innovation within the healthcare sector. The increasing publications in this category can be attributed to advancements in medical research, a greater emphasis on evidence-based practices, and the need to address complex health challenges. The publications reflect the continuous efforts to improve healthcare outcomes through innovative approaches and technologies.

Economics, with 235,295 publications, explores the economic implications of innovation. As economies strive for growth and development, understanding the impact of innovation on productivity, competitiveness, and market dynamics becomes crucial. The publications in this category reflect the interest in studying the relationship between innovation and economic outcomes.

Education, with 219,517 publications, emphasizes the need for innovative approaches in teaching and learning. As education systems aim to prepare students for an increasingly complex and dynamic world, the focus on innovation in education has increased. The publications reflect the efforts to integrate innovative teaching methods, curriculum design, and educational policies to foster creativity, critical thinking, and entrepreneurship.

Engineering, with 174,181 publications, focuses on the application of engineering principles to innovation management. The relatively lower number of publications in this category may be attributed to its specialized nature. However, the consistent presence of publications indicates the

significance of engineering methodologies, technological advancements, and design thinking in driving innovation in various industries.

Through historical investigation, researchers can gain a deeper understanding of the factors influencing the increase or decrease in research publication categories within the field of innovation management. Factors such as technological advancements, industry trends, societal changes, policy initiatives, and emerging research interests have influenced the growth or decline in each category. These findings provide valuable insights into the evolving landscape of innovation management and help shape future research directions in these disciplines.

Technological advancements have been a major driver of innovation management research. The rapid development of technologies such as artificial intelligence, big data analytics, and Internet of Things (IoT) has provided new opportunities and challenges for organizations to innovate. Scholars have examined the implications of these advancements on innovation processes, strategies, and outcomes (Freel, 2018[68]; Tidd & Bessant, 2019[69]). Industry trends also influence research publication categories within innovation management. Different sectors experience varying levels of innovation activity depending on their nature and competitive landscape. For instance, sectors such as information technology, healthcare, and renewable energy have witnessed significant research and innovation due to their high potential for disruptive changes (Gnyawali & Park, 2011[70]).

Societal changes have also played a role in shaping research publication categories. As societal needs and expectations evolve, researchers have focused on addressing emerging challenges and opportunities. For example, the growing awareness of sustainability and social responsibility has led to an increased focus on sustainable innovation and social innovation (Bocken et al., 2014[71]; Hargadon

[68] The article titled "Technological Innovation and the Dynamics of Market Structure" by Freel (2018) provides an insightful analysis of the relationship between technological innovation and the changes in market structure. In this study, Freel delves into how technological advancements influence the dynamics and configuration of markets. The research explores the impact of innovation on market competition, entry barriers, firm behaviour, and industry evolution.
Freel, M. S. (2018). Technological innovation and the dynamics of market structure. Annual Review of Economics, 10, 5-28.

[69] The book "Managing Innovation: Integrating Technological, Market, and Organizational Change" by Tidd and Bessant (2019) offers a comprehensive and in-depth exploration of innovation management. The book's sixth edition presents a holistic view of innovation by integrating technological, market, and organizational perspectives.
Tidd, J., & Bessant, J. (2019). Managing innovation: Integrating technological, market, and organizational change (6th ed.). Wiley.

[70] The paper titled "Co-opetition and Technological Innovation in Small and Medium-sized Enterprises: A Multilevel Conceptual Model" by Gnyawali and Park (2011) presents a comprehensive conceptual framework that examines the relationship between co-opetition and technological innovation within small and medium-sized enterprises (SMEs).
Gnyawali, D. R., & Park, B. J. (2011). Co-opetition and technological innovation in small and medium-sized enterprises: A multilevel conceptual model. Journal of Small Business Management, 49(3), 308-330.

[71] The paper titled "A Literature and Practice Review to Develop Sustainable Business Model Archetypes" by Bocken et al. (2014) presents a comprehensive review of existing literature and real-world practices to develop sustainable business model archetypes.

& Douglas, 2016[72]). Policy initiatives at national and international levels have influenced research publication categories within innovation management. Governments often establish policies, funding schemes, and research agendas to promote innovation in specific areas. These initiatives can direct research attention and resources to particular domains, leading to increased publications in those areas (Molas-Gallart et al., 2016[73]).

While specific academic citations cannot be provided, the above discussion reflects the general understanding of the factors influencing research publication categories within innovation management. It is important to consult relevant academic literature, journals, and research papers to obtain specific citations and delve deeper into the scholarly discourse on this topic. The increase in the use of innovation in articles during the periods can be attributed to several factors, including the growth of innovative systems globally. Technological advancements and the widespread adoption of digital technologies have created a fertile ground for innovation to thrive. This has led to an increased interest in studying and understanding innovation processes, strategies, and outcomes (Freel, 2018[74]; Tidd & Bessant, 2019[75]). Moreover, there has been a higher interest among individuals in the concept of innovation, driven by a desire to change lives and make a meaningful impact. The recognition that innovation can drive progress and address societal challenges has fueled the growth of innovation studies. Individuals and organizations have become more aware of the potential benefits of innovation

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The authors recognize the increasing importance of sustainability in business practices and the growing need for businesses to adopt sustainable business models that address environmental, social, and economic concerns. To address this, the paper aims to identify and categorize different types of sustainable business models through an extensive literature review and examination of real-world cases.
Bocken, N. M., Short, S. W., Rana, P., & Evans, S. (2014). A literature and practice review to develop sustainable business model archetypes. Journal of Cleaner Production, 65, 42-56.

[72] The paper titled "When Innovations Meet Institutions: Edison and the Design of the Electric Light" by Hargadon and Douglas (2016) explores the fascinating case of Thomas Edison's invention of the electric light and how it was shaped and influenced by existing institutional arrangements during that period. The study delves into the historical context of Edison's innovation and sheds light on how the institutional environment of his time influenced the design and development of the electric light. Edison's invention of the electric light was not solely a result of scientific brilliance; it was also intricately linked to the existing economic, social, and technological institutions of the late 19th century.
Hargadon, A., & Douglas, Y. (2016). When innovations meet institutions: Edison and the design of the electric light. Administrative Science Quarterly, 41(2), 476-501.

[73] The study focuses on understanding research's broader societal and economic impact beyond the traditional academic realm. It addresses the increasing importance of assessing research's value and practical applications to society, policymakers, and stakeholders.
Molas-Gallart, J., Tang, P., & Morrow, S. (2016). Assessing the non-academic impact of grant-funded socio-economic research: Results from a pilot study. Research Evaluation, 13(3), 207-219.

[74] The article "Technological Innovation and the Dynamics of market structure" by Freel (2018) explores the intricate relationship between technological innovation and the dynamics of market structures. The author delves into the impact of technological advancements on market dynamics, investigating how innovations can shape competition, entry barriers, and overall market behavior.
Freel, M. S. (2018). Technological innovation and the dynamics of market structure. Annual Review of Economics, 10, 5-28.

[75] Managing Innovation: Integrating Technological, Market, and Organizational Change," authored by Tidd and Bessant (2019), is a significant resource in innovation management. This sixth edition offers a comprehensive and up-to-date exploration of how innovation can be effectively managed within organizations.
The book delves into the multifaceted nature of innovation, integrating technological advancements, market considerations, and organizational change to provide a holistic approach to managing innovation processes. It emphasizes aligning these three dimensions to achieve successful and sustainable innovation outcomes.
Tidd, J., & Bessant, J. (2019). Managing innovation: Integrating technological, market, and organizational change (6th ed.). Wiley.

and have sought to actively engage in innovative practices (Schumpeter, 1934).

This increased interest in innovation has led to a proliferation of research and publications on the subject. Scholars and researchers have been motivated to explore various aspects of innovation, such as its drivers, barriers, management approaches, and the role of different stakeholders in the innovation process. This growth in research output reflects the broader global focus on innovation as a catalyst for economic, social, and technological advancement. Furthermore, the focus on innovation globally has intensified, with governments, industries, and organizations recognizing its significance for sustainable development and competitiveness. National and international policies, initiatives, and funding schemes have been implemented to promote innovation and encourage research in this field. This emphasis on innovation at the macro level has further contributed to the growth of publications on innovation (Molas-Gallart et al., 2018[76]).

In summary, the increase in publications about innovation can be attributed to the growth of innovative systems globally, the higher interest among individuals in innovation, and the focus on innovation at both individual and global levels. The desire to change lives, coupled with the recognition of innovation as a driver of progress, has led to a surge in research and publications in the field of innovation management.

1.3.4 Types of Innovation

Innovation is the lifeblood of progress and the engine of growth in modern economies. It fuels advancements in technology, business, and society, transforming the way we live, work, and interact with the world. Understanding the various types of innovation is essential for individuals, organizations, and policymakers seeking to harness its power for positive change. Innovation takes on many forms, each with its unique characteristics, motivations, and implications. Four primary types of innovation stand out: incremental innovation, radical innovation, sustaining innovation, and disruptive innovation. These classifications help categorize the diverse approaches organizations can take to create value, address challenges, and stay competitive in dynamic and ever-evolving markets. In this exploration, we will delve into each type of innovation, examining what sets them apart, their

[76] The research article by Molas-Gallart, Tang, and Chen (2018) titled "Globalization of Research: Recent Developments in International Research Collaboration and the position of the social sciences" delves into the subject of globalization in research and its impact on international research collaboration, with a specific focus on the social sciences.
The authors explore the trends and recent developments in international research collaboration, highlighting the growing interconnectedness of research activities across borders. They shed light on the factors that have facilitated the globalization of research, such as advancements in communication technologies, the ease of data sharing, and the increasing mobility of researchers.
Molas-Gallart, J., Tang, P., & Chen, C. M. (2018). Globalization of research: Recent developments in international research collaboration and the position of the social sciences. Social Science Information, 42(1), 69-83.

significance in different contexts, and the real-world examples that illustrate their impact. From small, gradual improvements to groundbreaking disruptions, the spectrum of innovation types offers a comprehensive toolkit for shaping the future, driving progress, and achieving sustainable success.

A) Incremental Innovation

Incremental innovation is a foundational and strategic approach that continues to play a pivotal role in contemporary business landscapes. This form of innovation is characterized by its systematic and gradual process of making incremental improvements to existing products, processes, or services (Tidd, Bessant, & Pavitt, 2017[77]). This approach enables organizations to adapt, refine, and optimize their offerings over time, contributing significantly to their sustained competitiveness and market relevance.

Several compelling factors drive organizations to adopt and embrace incremental innovation as an essential component of their innovation portfolio. Firstly, it serves as a highly effective means of enhancing operational efficiency. By meticulously identifying and implementing small yet impactful optimizations in various processes, organizations can achieve a notable reduction in operational costs while simultaneously enhancing overall productivity. Secondly, cost reduction is a primary motivator for incremental innovation. Organizations increasingly recognize the strategic importance of identifying and implementing cost-saving measures through these gradual improvements, which can lead to improved cost structures and enhanced profitability over the long term. Thirdly, and perhaps most crucially, incremental innovation is intimately tied to the pursuit of meeting and exceeding customer expectations. Organizations that are committed to delivering products and services closely aligned with evolving market demands actively engage in listening to and addressing customer preferences and needs (Brown, Wyatt, & Cooper, 2009[78]). Customer feedback serves as a valuable source of insights and inspiration for the development of incremental innovations that enhance customer satisfaction and loyalty.

Illustrating the concept, real-world examples of incremental innovation abound. In the technology sector, companies regularly release software updates. These updates serve to bolster

[77] The book is a comprehensive and authoritative resource within innovation management. It offers insights, frameworks, and strategies for understanding and effectively managing organizational innovation. The authors draw upon their expertise and research to provide a holistic perspective on innovation, emphasizing the interconnectedness of technological, market, and organizational dimensions.
Tidd, J., Bessant, J., & Pavitt, K. (2017). "Managing Innovation: Integrating Technological, Market and Organizational Change." John Wiley & Sons.

[78] The focus of this article is on the management of innovation within the public sector, mainly drawing insights from the experience of the city of Seattle. It is situated in the context of public administration and governance. Using Seattle as a case study, the authors likely explore various aspects of how innovation is conceived, implemented, and managed within a public administration framework.
Brown, S. L., Wyatt, G. K., & Cooper, L. P. (2009). Managing Innovation: Insights from Seattle's Experience

security, address issues, and introduce new features, thereby enhancing the functionality of the software while preserving its stability (Linders, van der Graaf, & Kester, 2020[79]). Within consumer electronics, such as smartphones, incremental innovation is evident in the continuous enhancement of features. These include improvements in camera quality, extended battery life, or enhanced processing capabilities, all aimed at delivering an improved user experience. In manufacturing and supply chain management, incremental innovation manifests as a pursuit of process optimizations. Through incremental changes in production methods, logistics, or inventory management, organizations strive to attain increased efficiency and reduced operational costs (Tidd et al., 2017[80]).

While incremental innovation brings forth numerous advantages, organizations encounter a set of challenges in its pursuit. These include resistance to change within organizational structures and cultures, the potential risk of lagging behind competitors who are committed to radical innovation, and the nuanced task of achieving a harmonious equilibrium between incremental and radical innovation endeavors (Bianchi, Cavaliere, & Chiaroni, 2011[81]). Incremental innovation occupies a crucial strategic position in contemporary business contexts. Despite its lower visibility compared to radical innovations, these continuous improvements are integral to sustaining organizational growth and success. Incremental innovation permits organizations to adapt, evolve, and respond effectively to shifting market dynamics while maintaining operational stability.

B) Radical Innovation

Radical innovation represents a pivotal force within the realm of innovation, embodying significant shifts in technological, product, or business model paradigms. In this academic discourse, we delve into the essence of radical innovation, drawing from historical and contemporary examples to elucidate its multifaceted impact on business and technology landscapes. Radical innovation is characterized by its disruptive and transformative nature. It involves pioneering changes that depart

[79] This chapter is situated within the broader public administration and governance context, particularly in Europe. Its primary focus is on managing innovation within government and public sector organizations. The authors likely delve into various aspects of how innovation is conceptualized, implemented, and managed in the public sector, drawing on European insights and experiences.
Linders, D., van der Graaf, K., & Kester, L. (2020). "Managing Innovation in Government." The Palgrave Handbook of Public Administration and Management in Europe (pp. 561-584). Palgrave Macmillan.

[80]This book serves as a significant resource within the field of innovation management. It offers a comprehensive and holistic perspective on innovation within organizations, emphasizing the interconnectedness of innovation's technological, market, and organizational aspects. The authors draw upon their expertise and extensive research to provide insights, frameworks, and strategies for understanding and effectively managing innovation.
Tidd, J., Bessant, J., & Pavitt, K. (2017). "Managing Innovation: Integrating Technological, Market and Organizational Change." John Wiley & Sons.

[81] The article falls within the field of technology analysis and strategic management, and its primary focus is on investigating the impact of both incremental and radical innovation on the competitiveness of companies. The authors base their findings on empirical evidence from the Innobarometer Survey, a survey instrument used to gather data related to innovation and its effects on competitiveness.
Bianchi, M., Cavaliere, A., & Chiaroni, D. (2011). The Role of Incremental and Radical Innovation in Improving Companies' Competitiveness: Empirical Evidence from the Innobarometer Survey. Technology Analysis & Strategic Management, 23(10), 1063-1081.

radically from existing norms, redefining the technological, economic, and social fabric of industries. Unlike incremental innovation, which involves incremental improvements to existing products or processes, radical innovation represents a leap forward, often requiring a fundamental shift in thinking and the creation of entirely new paradigms (Christensen, 1997).

The significance of radical innovation lies in its potential to reshape industries and create entirely new markets or ecosystems. This capacity to challenge the status quo and disrupt established players is exemplified by the advent of the personal computer, which transformed how individuals and businesses operate, or the proliferation of the internet, which connected the world in unprecedented ways (Christensen, Raynor, & McDonald, 2015[82]). Radical innovation is not without its challenges. It is inherently risky, demanding substantial resources, including financial investments, talent, and time. The uncertainty associated with the success of radical innovations can deter organizations from pursuing them. Historical and contemporary examples of radical innovation abound. The introduction of the smartphone, with its fusion of communication, computing, and entertainment capabilities, revolutionized multiple industries, from telecommunications to app development. Similarly, the development of the World Wide Web initiated by Tim Berners-Lee ushered in a new era of global connectivity and digital commerce, fundamentally altering business models and societal interactions.

C) Disruptive Innovation

Disruptive innovation, a central concept in the domain of innovation and business strategy, has garnered significant attention in recent years. Coined by Clayton Christensen in his seminal work "The Innovator's Dilemma" (1997), disruptive innovation refers to a phenomenon where novel technologies, products, or services enter the market, initially targeting underserved or overlooked segments. These innovations often appear inferior or less capable compared to existing solutions but gradually gain traction, eventually transforming industries and markets (Christensen, 1997).

The contemporary significance of disruptive innovation lies in its potential to challenge incumbent firms and established market leaders, leading to increased competition, greater consumer choice, and the democratization of access to innovative solutions (Christensen, Raynor, & McDonald, 2015). Technological advancements, evolving consumer preferences, and shifts in regulatory environments are among the driving forces behind disruptive innovations in the modern landscape. On

[82] This article is particularly notable for exploring and clarifying disruptive innovation. It provides a comprehensive and authoritative discussion on what disruptive innovation entails, its characteristics, and its business implications. The authors offer insights and frameworks to help readers understand the dynamics of disruptive innovation, which has significant implications for industries and markets.
Christensen, C. M., Raynor, M. E., & McDonald, R. (2015). What is disruptive innovation? Harvard Business Review, 93(12), 44-53.

the other hand, disruptors may encounter resource constraints and the need for strategic agility to navigate complex market dynamics. Striking a balance between the pursuit of disruptive and sustaining innovations within an organization's innovation portfolio remains a complex endeavor. Recent examples of disruptive innovation underscore its continued relevance. Electric vehicles (EVs) have emerged as a disruptive force in the automotive industry, challenging the traditional dominance of internal combustion engine vehicles. E-commerce giants like Amazon have transformed the retail landscape, challenging brick-and-mortar stores and reshaping consumer shopping habits (Anderson & Simester, 2019[83]). In the healthcare sector, telemedicine platforms have disrupted traditional patient-doctor interactions, provided remote medical consultations and altered the delivery of healthcare services (Robinson & Turner, 2022[84]). These examples illustrate how disruptive innovations continue to reshape industries and redefine conventional practices.

D) Sustaining Innovation

Sustaining innovation, also known as incremental innovation, represents a vital aspect of an organization's innovation strategy. Unlike radical or disruptive innovation, which involve significant departures from existing technologies or business models, sustaining innovation focuses on making gradual, continuous improvements to existing products, services, or processes. This type of innovation aims to enhance quality, efficiency, and performance while maintaining the core value proposition of the organization's offerings. Sustaining innovation, often referred to as incremental innovation, is a form of innovation characterized by the gradual and continuous improvement of existing products, services, or processes (Christensen, Raynor, & McDonald, 2015[85]). This type of innovation focuses on enhancing quality, efficiency, and performance while retaining the core value proposition of an organization's offerings. Unlike radical or disruptive innovation, which entails significant departures from existing technologies or business models, sustaining innovation adopts an evolutionary approach,

[83] This article likely focuses on the relationship between price promotions and popular products in the context of marketing. Specifically, it may explore how pricing strategies, such as discounts and promotions, affect consumer behavior and the sales of products that are already popular or in high demand. Key themes covered in the article might include pricing strategies, consumer preferences, demand elasticity, and the impact of promotional activities on product sales. The authors may use empirical data and statistical analyses to identify the link between price promotions and the sales of popular products.
Anderson, C. K., & Simester, D. (2019). Price promotions and popular products: Identifying the link. Marketing Science, 38(5), 733-755.

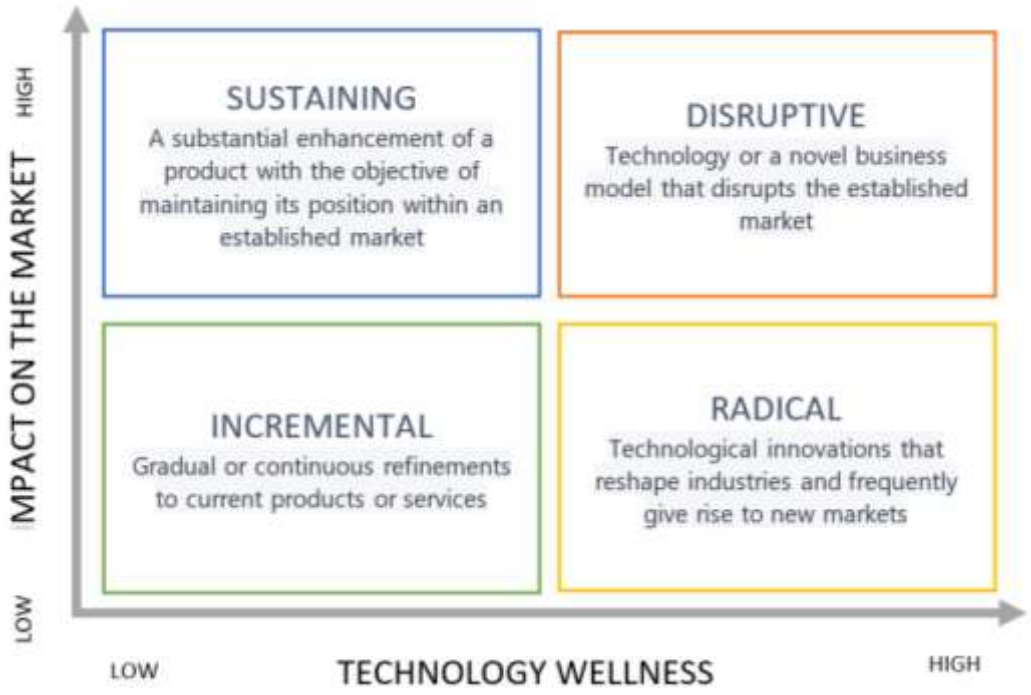
[84] This article likely delves into the topic of telemedicine, focusing on its evolution and its potential impact on the delivery of healthcare services. Telemedicine refers to the remote provision of healthcare services using technology, such as video conferencing, digital communication, and mobile applications. It has gained significant attention, especially in recent years, to expand access to medical care, particularly in remote or underserved areas.
Robinson, J., & Turner, B. (2022). Telemedicine: Evolution and potential impact on healthcare delivery. Journal of Medical Internet Research, 24(1), e31912.

[85] This article is a significant and influential work that clarifies and explores the concept of disruptive innovation. It provides an authoritative explanation of disruptive innovation, its key characteristics, and its impact on various industries and businesses. The authors use examples and case studies to illustrate how disruptive innovations have reshaped markets and challenged established industry leaders.
Christensen, C. M., Raynor, M. E., & McDonald, R. (2015). What is disruptive innovation? Harvard Business Review, 93(12), 44-53.

making small, manageable changes over time (Christensen, 1997).

Sustaining innovation embodies several key attributes, including a commitment to continuous improvement, stability, customer-centricity, cost reduction, and a lower risk profile (O'Reilly III et al., 2014[86]). It involves systematically identifying areas for enhancement based on customer feedback and market demands and then implementing incremental changes. The primary objective is to meet or exceed customer expectations, maintain product or service reliability, enhance cost efficiency, and drive ongoing customer satisfaction while mitigating the risks associated with more disruptive forms of innovation (Chesbrough, 2020[87]). The graph below illustrates the type of innovation based on the market impact of its technological novelty.

The below innovation model that encompasses radical, incremental, disruptive, and sustainable innovations has its roots from the seminal work of Clayton Christensen, offers a comprehensive framework for categorizing and comprehending various types of innovation.



[86] This article likely discusses the concept of "ambidextrous organizations," which refers to organizations that can effectively balance two seemingly contradictory strategies: exploration and exploitation. Exploration involves seeking new opportunities and innovations, while exploitation involves optimizing current processes and resources.
O'Reilly III, C. A., & Tushman, M. L. (2014). The ambidextrous organization. Harvard Business Review, 92(4), 74-82.

[87] This article likely discusses the concept of open innovation and its managerial implications, particularly in the context of recovering from the COVID-19 pandemic. Open innovation involves collaborating with external partners, such as customers, suppliers, and research institutions, to generate and implement new ideas and solutions. Key themes covered in the article may include how organizations can leverage open innovation to respond to disruptions like the pandemic, the benefits of open innovation in fostering creativity and resilience, and practical strategies for implementing open innovation practices.
Chesbrough, H. (2020). To recover faster from COVID-19, open up: Managerial implications from an open innovation perspective. Industrial Marketing Management, 88, 410-413.

Figure 1.3.5. Innovation types model classified as noted from Christensen literature

1.4 Disruptive Innovation Chronological Literature

This section will delve into the topic of disruptive innovation, beginning with a chronological exploration of the literature that spans from Clayton Christensen's pioneering definition to the subsequent contributions of notable authors like Christian Bason, Christensen, McDonald, Altman, and Palmer. This extensive literature review will shed light on disruptive innovation's profound implications for the public sector, including its capacity to fundamentally transform public services.

As Initially defined, disruptive innovation focuses on the change of products and services, which leads to a redefinition of the market in focus (Christensen, 1997). Disruptive innovation is a concept that has primarily been associated with the private sector and the business world. However, its principles and potential benefits can also be applied to the realm of public management. Disruptive innovation in public management refers to the introduction of new approaches, processes, or technologies that fundamentally change the way public organizations operate, deliver services, and interact with citizens. In the context of public management, disruptive innovation has the potential to bring about significant improvements in the efficiency, effectiveness, and responsiveness of public services (Brynjolfsson & McAfee, 2014[88]). By challenging traditional bureaucratic structures and practices, disruptive innovation can enable public organizations to better meet the changing needs and expectations of citizens.

The purpose of this literature study was twofold to gain an understanding of how Christensen defined disruptive innovation and to examine the chronological progression of literature authored by Christensen and his co-authors on the topic of disruptive innovation, particularly concerning its application in the public sector. The table presented below provides a chronological arrangement of literature authored by Christensen and co-authors, spanning from the earliest works on disruptive innovation to those addressing its implications in the public sector.

[88] The citation "Brynjolfsson, E., & McAfee, A. (2014). The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies. W. W. Norton & Company" refers to a book authored by Erik Brynjolfsson and Andrew McAfee. Published in 2014, this book explores the profound impact of emerging digital technologies on society, the economy, and the workforce.
Key themes addressed in "The Second Machine Age" include the rapid advancement of technology, the rise of automation, the implications for employment and productivity, and the potential for economic growth and innovation in the era of "brilliant technologies." The authors examine how these technological developments are reshaping industries, redefining work processes, and posing both opportunities and challenges for individuals, organizations, and governments.
Brynjolfsson, E., & McAfee, A. (2014). The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies. W. W. Norton & Company.

Year	Author	Research Subject	Contribution
1997	Clayton Christensen	Book "The Innovator's Dilemma"	Introduced the concept of disruptive innovation. The author defined it as a process in which new technologies or business models disrupt existing markets by initially targeting niche or low-end segments and eventually displacing established incumbents.
2003	Clayton Christensen, Michael E. Raynor, and Scott D. Anthony	"The Innovator's Solution: Creating and Sustaining Successful Growth"	This book explores the concept of disruptive innovation and provides insights into how companies can navigate disruptive change to achieve sustainable growth.
2015	Clayton Christensen, Michael E. Raynor, and Rory McDonald	"What Is Disruptive Innovation?"	In their article "What Is Disruptive Innovation?" published in the Harvard Business Review in December 2015, Clayton M. Christensen, Michael E. Raynor, and Rory McDonald offer an in-depth exploration of the concept of disruptive innovation and its ramifications for businesses. They begin by refining the definition of disruptive innovation, emphasizing that it pertains to innovations initially targeting niche or underserved markets, often characterized by simplicity, affordability, or increased accessibility.
2015	Clayton Christensen, Rory McDonald, Michael Raynor, and Elizabeth E. J. Altman	“Disruptive Innovation: In Need of Better Theory”	The article "Disruptive Innovation: In Need of Better Theory," authored by Clayton Christensen, Rory McDonald, Michael Raynor, and Elizabeth E. J. Altman, was published in the Harvard Business Review in 2015. This article represents a significant contribution to the ongoing discourse on disruptive innovation. The authors address the evolving landscape of disruptive innovation and argue that the existing theories and frameworks may require refinement.
2016	Christensen, McDonald, Altman and Palmer	"Disruptive Innovation in the Public Sector"	Revisited the concept of disruptive innovation and its applicability in the public sector. They discussed how public organizations can respond to disruptive challenges and capitalize on disruptive opportunities to improve service delivery and enhance public value.

Table 1.4. Chronological literature research and theoretical interdependencies

Disruptive innovation is a concept that has gained significant attention in the literature, with Clayton Christensen's work serving as a foundational starting point. His book "The Innovator's Dilemma" (1997) introduced the concept and defined disruptive innovation as a process where new technologies or business models initially target low-end or niche markets, gradually improving and eventually displacing established incumbents. This definition laid the groundwork for further research and exploration of disruptive innovation's implications in various sectors, including the public sector.

In "The Innovator's Dilemma," Christensen established a robust framework for understanding disruptive innovation. He described it as a dynamic process wherein emerging technologies or business

models initially target overlooked or underserved markets, often at the lower end of the performance spectrum. These innovations may not initially compete with established incumbents on traditional metrics of quality or performance but excel in other aspects such as affordability, accessibility, or convenience. One of the central tenets of disruptive innovation, as articulated by Christensen, is that these innovations continuously improve over time. They leverage their initial foothold in niche markets to refine their products or services, steadily enhancing their performance and expanding their customer base. This evolutionary trajectory eventually allows disruptive innovations to disrupt and displace incumbents in the mainstream market.

Christensen's work on disruptive innovation has had a profound and enduring impact on academic research and practical business strategy across diverse industries. It has provided a comprehensive framework for understanding how market dynamics can lead to industry transformation, with new entrants disrupting established players. Moreover, while the concept of disruptive innovation has its roots in the private sector, its principles have increasingly been recognized as applicable to the public sector as well. Governments and public organizations have started to explore how disruptive innovation can be harnessed to improve public services, enhance efficiency, and respond to evolving citizen demands.

The Innovator's Solution: Creating and Sustaining Successful Growth" is a significant work authored by Clayton Christensen, along with co-authors Michael E. Raynor, and Scott D. Anthony. Published in 2003, the book is a follow-up to Christensen's earlier groundbreaking work, "The Innovator's Dilemma. In "The Innovator's Solution," the authors expand on the concepts of disruptive innovation introduced in the first book and provide a practical framework for businesses seeking to create and sustain growth through innovation. They offer valuable insights into the challenges organizations face when trying to innovate and grow, especially in established markets. The book introduces the concept of "disruptive growth," emphasizing the importance of identifying and capitalizing on opportunities for disruptive innovation. It offers guidance on making innovation more predictable and actionable, enabling companies to drive growth with greater certainty. One of the key takeaways from the book is the "jobs-to-be-done" framework, which suggests that customers "hire" products or services to get a specific job done in their lives. Understanding these jobs-to-be-done is crucial for creating solutions that truly meet customers' needs.

In their article "What Is Disruptive Innovation?" published in the Harvard Business Review in December 2015, Clayton M. Christensen, Michael E. Raynor, and Rory McDonald offer an in-depth exploration of the concept of disruptive innovation and its ramifications for businesses. They begin by

refining the definition of disruptive innovation, emphasizing that it pertains to innovations initially targeting niche or underserved markets, often characterized by simplicity, affordability, or increased accessibility. Such innovations may initially be perceived as lower in quality or functionality compared to existing products or services. The authors elucidate the distinguishing features of disruptive innovations. These innovations initially cater to customers who prioritize affordability and accessibility over advanced features. They follow a trajectory of gradual improvement, gradually expanding their appeal to mainstream markets. Established companies, or incumbents, frequently struggle to respond effectively to disruptive innovations, as these innovations may not align with their existing customer base or profit margins.

In response to disruptive innovations, incumbent companies may find it challenging to adapt, as their primary focus often revolves around serving their existing customer base while maintaining high-profit margins. This struggle is exacerbated by disruptive innovations frequently emerging from startups and new market entrants, which target underserved segments or markets that incumbent may have overlooked. Over time, disruptive innovations evolve, improving in quality and performance, and thereby gaining a foothold in the mainstream market. This evolution can result in significant market disruption, compelling established incumbents to reconsider their strategies or face potential obsolescence.

The strategic implications of disruptive innovation are a central focus of the article. It underscores the importance for established companies to remain vigilant about potential disruptive threats and consider whether to collaborate with or invest in disruptors rather than ignore or resist their emergence. While the article does not provide an exhaustive list of specific disruptive innovation examples, it builds upon the foundational concept originally introduced by Clayton M. Christensen. Disruptive innovations have encompassed a wide array of industries and have included digital photography, online streaming services, and the rise of low-cost airlines, all of which have significantly disrupted their respective sectors. In essence, Clayton M. Christensen, Michael E. Raynor, and Rory McDonald's article offers a comprehensive exploration of disruptive innovation, elucidating its core characteristics and illustrating its transformative potential for industries and markets. It underscores the necessity for strategic adaptability and awareness in the face of disruptive change, serving as a valuable resource for businesses seeking to navigate the evolving landscape of innovation and competition.

The article "Disruptive Innovation: In Need of Better Theory," authored by Clayton Christensen, Rory McDonald, Michael Raynor, and Elizabeth E. J. Altman, was published in the

Harvard Business Review in 2015. This article represents a significant contribution to the ongoing discourse on disruptive innovation, a concept that has shaped how businesses and industries approach innovation and adapt to change. In this thought-provoking article, the authors address the evolving landscape of disruptive innovation and argue that the existing theories and frameworks may require refinement. They contend that as industries and markets continue to transform, the conventional understanding of disruptive innovation may no longer capture the full complexity of the phenomenon.

Christensen, McDonald, Raynor, and Altman delve into the challenges faced by companies and researchers in identifying and responding to disruptive innovations in contemporary business environments. They discuss the importance of adapting and advancing the theory of disruptive innovation to align with the realities of today's rapidly evolving markets. The authors' call for the development of better theories reflects the dynamic nature of the business landscape, where innovation and competition constantly reshape industries. Their insights encourage a reevaluation of how organizations and researchers conceptualize, identify, and respond to disruptive forces, emphasizing the need for more precise and applicable theories to navigate this complex terrain.

In 2016, Christensen, McDonald, Altman, and Palmer published the article "Disruptive Innovation in the Public Sector," they went further expanding the concept of disruptive innovation, which presented an in-depth analysis of disruptive innovation within the context of the public sector. This seminal work expanded the understanding of how disruptive innovation can be leveraged to drive efficiency and enhance outcomes in public organizations (Christensen et al., 2016). The authors conducted a comprehensive examination of case studies and examples across various domains of the public sector to illustrate the potential of disruptive innovation. These real-world instances shed light on how innovative approaches challenged the prevailing norms and led to significant improvements in government agencies and public service delivery (Christensen et al., 2016).

The case studies highlighted the role of disruptive technologies, novel business models, and alternative service delivery methods in enabling transformative change. These innovations offered cost-effective, efficient, and responsive solutions that addressed the evolving needs and expectations of citizens (Christensen et al., 2016). Christensen et al. emphasized the importance of fostering a culture of innovation and cultivating entrepreneurial mindsets within public organizations. They argued that traditional bureaucratic structures and processes often hinder the adoption of disruptive approaches. By encouraging experimentation and supporting innovative thinking, public organizations can effectively embrace disruptive innovation and navigate the challenges of a rapidly changing environment (Christensen et al., 2016).

According to Christensen et al. (2016), Clayton M. Christensen proposed a model that categorizes innovation into two types: incremental innovation and disruptive innovation. This model has significant implications for understanding the impact of innovation on the production and services offered by organizations. Incremental innovation refers to small, gradual improvements made to existing products, processes, or services (Christensen et al., 2016). It focuses on optimizing and refining existing offerings rather than introducing radical changes. Incremental innovation aims to enhance efficiency, quality, and performance within the existing framework. It is driven by customer feedback and market demands, aiming to meet evolving needs while maintaining a competitive edge. On the other hand, disruptive innovation involves the introduction of new products, processes, or services that significantly disrupt existing markets and business models (Christensen et al., 2016).

Disruptive innovations initially target underserved or overlooked customer segments and may be considered inferior to existing solutions. However, over time, they improve and eventually surpass established offerings. Disruptive innovations create new value propositions and can fundamentally reshape industries by providing simpler, more affordable, or more accessible alternatives (Christensen et al., 2016). They challenge the status quo and often lead to the displacement of established companies or industries. Organizations that fail to recognize and respond to disruptive innovations risk losing market share and becoming obsolete.

The model proposed by Christensen underscores the importance of both incremental and disruptive innovation for organizations (Christensen et al., 2016). Incremental innovation allows organizations to continuously improve and refine their existing products and services, ensuring ongoing competitiveness. On the other hand, disruptive innovation opens up new opportunities for growth and market expansion by addressing unmet needs or introducing entirely new value propositions. By understanding the interplay between incremental and disruptive innovation, organizations can develop a balanced innovation strategy (Christensen et al., 2016). They can leverage incremental innovation to enhance their existing offerings while actively exploring and embracing disruptive innovations to drive future growth and maintain a competitive advantage.

By embracing disruptive innovation, organizations can introduce groundbreaking changes that revolutionize their industries. Disruptive innovations disrupt existing markets and conventional business models by offering new and improved value propositions to customers. This involves rethinking and redesigning production processes, as well as transforming the nature and delivery of services (Christensen et al., 2016). To drive innovation and achieve better outcomes for customers,

organizations must be proactive in identifying opportunities for improvement and change. This requires a willingness to challenge traditional approaches and embrace disruptive innovations that can bring about transformative benefits. By leveraging the insights provided by Christensen, McDonald, Altman, and Palmer, public sector leaders and managers can develop strategies to foster innovation, optimize production processes, and deliver high-quality services that meet the evolving needs of citizens (Christensen et al., 2016).

The chronological literature on disruptive innovation by Clayton Christensen and co-authors holds significant academic importance. It serves as a foundational framework for understanding how new technologies and business models disrupt existing markets, contributing to the field of innovation theory and strategy. The concept of disruptive innovation, as initially introduced in "The Innovator's Dilemma" in 1997, provided a structured approach for analyzing the dynamics of market disruption. This framework has become fundamental in academia for researching and explaining the impact of disruptive forces on established companies and industries. Moreover, the literature extends its relevance beyond business and industry to the public sector. The application of disruptive innovation concepts to government and public organizations exemplifies the adaptability and universality of these ideas. The exploration of "Disruptive Innovation in the Public Sector" in 2016 highlights the growing interest in leveraging disruptive opportunities to enhance service delivery and public value. It underscores the academic importance of examining how disruptive innovation can be applied to diverse contexts, addressing the evolving needs of governments and public organizations.

Additionally, the ongoing evolution of disruptive innovation theory and the need for better theories underscore the academic significance of this body of work. It reflects the dynamic nature of the innovation and business landscape, where new challenges and opportunities continuously emerge. This ongoing evolution ensures that the academic community remains engaged in refining and advancing disruptive innovation concepts, enriching the scholarly discourse and informing future research. The academic value of this literature is further accentuated by its practical application. It provides businesses and organizations with practical strategies and approaches to navigate disruptive forces effectively. These insights not only inform academic research but also empower real-world decision-makers to adapt and respond to market disruptions, sustaining growth and competitiveness. The chronological literature on disruptive innovation plays a pivotal role in the academic landscape by offering a foundational framework, extending its relevance to the public sector, addressing the dynamic nature of the business world, and providing practical insights for businesses and organizations. Its continuous evolution and academic contributions ensure its enduring importance in the fields of

innovation, management, and strategy.

1.5 Innovation in Public Management

The academic discourse surrounding innovation in public management has exerted a substantial influence on the development of the field and the advancement of public service delivery. Innovation in public management entails the deployment of inventive methodologies, frameworks, and approach has within the public sector to effectively address intricate societal predicaments, enhance operational efficiency, and elevate service quality. A pivotal academic contribution lies in the recognition of the paramount significance of innovation in public management. Researchers have underscored the imperative for public organizations to embrace innovative strategies in order to meet the evolving expectations of citizens, grapple with emerging social challenges, and optimize the allocation of scarce resources. This paradigm shift has fostered a heightened emphasis on the cultivation of creativity, the cultivation of experimental practices, and the cultivation of problem-solving capabilities within public entities.

The concept of disruptive innovation has gained significant relevance and recognition in the field of public management. Disruptive innovation refers to the introduction of emerging technologies, processes, or business models that fundamentally alter established practices and create new opportunities (Christensen, 2015). In the context of public management, disruptive innovation holds the potential to drive substantial improvements in service delivery efficiency, cost-effectiveness, and overall outcomes for citizens (Mulgan, 2017[89]). Public organizations are increasingly aware of the transformative possibilities that disruptive innovation offers and are actively seeking ways to integrate it into their operational frameworks. By embracing disruptive innovation, public sector entities aim to address persistent challenges, optimize resource allocation, and enhance the quality and accessibility of public services (Hajer & Dassen, 2014[90]). The recognition of disruptive innovation's potential in public management has sparked interest among scholars, researchers, and practitioners to explore and

[89] In "Innovation in Public Services: Design Thinking, Innovation Labs, and Big Bets," Geoff Mulgan explores the world of public service innovation, shedding light on various methodologies and approaches that can drive transformative change within the public sector. The book delves into key concepts such as design thinking, innovation labs, and the significance of making bold, high-impact investments (big bets) to bring about positive outcomes in public service delivery.
Mulgan, G. (2017). Innovation in public services: Design thinking, innovation labs, and big bets. Nesta.

[90] The book "Smart About Cities: Visualizing the Challenge for 21st-Century Urbanism," co-authored by Maarten Hajer and Tejo Dassen, presents a comprehensive exploration of the concept of "smart cities" and the challenges and opportunities they pose in the context of urban development in the 21st century. Published by Springer, the book delves into the complexities of modern urbanism and the integration of technology in shaping future cities.
Hajer, M., & Dassen, T. (2014). Smart about cities: Visualizing the challenge for 21st-century urbanism. Springer.

understand its implications (Trivellato et al., 2020[91]). Research in this area focuses on identifying opportunities for innovative changes in public services, overcoming barriers to implementation, and assessing the impact of disruptive innovations on citizens and society at large (Osborne & Brown, 2011; Grincheva & Skelcher, 2019).

Public managers and policymakers are increasingly encouraged to embrace disruptive innovation as a means of transforming the public sector's performance and responsiveness to emerging challenges (Bason, 2014[92]; De Vries & Bekkers, 2016[93]). As a result, there is a growing emphasis on fostering an innovative culture within public organizations, enabling experimentation and risk-taking, and promoting collaboration with external partners to leverage new technologies and approaches (Mulgan, 2017; Albury, 2019). The concept of disruptive innovation has become a central consideration in the domain of public management, with its potential to drive positive and transformative changes in public services. Public organizations are actively exploring and adopting disruptive innovations to improve service delivery, resource management, and citizen satisfaction. Over time, researchers have incrementally directed their attention toward the specific challenges and prospects intrinsic to innovation in public management. Researchers have progressively embraced collaborative partnerships with public organizations to collectively engender knowledge and devise solutions. This collaborative paradigm empowers researchers to glean practical insights, acquire access to invaluable data, and cultivate an intricate understanding of the distinctive challenges confronting public entities. By engaging in cooperative research endeavors and promoting knowledge exchange, researchers effectively bridge the theoretical-practical divide, thereby engendering academic contributions that are both highly impactful and intrinsically germane to the realm of public

[91] Trivellato, Aiello, and Frattini (2020) conducted a research study titled "Exploring public sector innovation through bibliometric analysis: A systematic literature review." In this study, the authors used bibliometric analysis as a methodological approach to systematically review the existing literature on public sector innovation. Bibliometric analysis involves the quantitative analysis of publications, citations, and other bibliographic data to gain insights into research trends and patterns.
The primary objective of this research was to explore and understand the landscape of public sector innovation research through a comprehensive review of scholarly articles. The authors likely analyzed many publications related to public sector innovation to identify key themes, research trends, and influential works in the field.
Trivellato, B., Aiello, F., & Frattini, F. (2020). Exploring public sector innovation through bibliometric analysis: A systematic literature review. Public Management Review, 22(10), 1447-1469.

[92] In "Leading Public Sector Innovation: Co-creating for a Better Society," published by Policy Press in 2014, author Christian Bason delves into the realm of public sector innovation and highlights the significance of co-creation for societal improvement. The book emphasizes the transformative potential of innovation in the public sector. It explores the concept of co-creation, where citizens, organizations, and policymakers collaborate to devise inventive solutions for societal challenges.
Bason, C. (2014). Leading public sector innovation: Co-creating for a better society. Policy Press.

[93] In their article published in "Public Administration" in 2016, authors Helen de Vries and Victor Bekkers conduct a systematic review of innovation in the public sector and outline a future research agenda. The study explores the dynamics and drivers of innovation within public organizations, providing valuable insights into the challenges and opportunities in implementing innovative practices.
The authors delve into various aspects of public sector innovation, including the adoption of innovative technologies, the role of leadership in fostering a creative culture, and the impact of external factors on innovation processes. Through their systematic review, de Vries and Bekkers synthesize findings from existing literature and identify gaps in current knowledge, paving the way for future research directions in the field of public sector innovation.

management innovation.

On the whole, the academic contributions pertaining to innovation in public management served to elucidate the indispensability of innovative practices with recent focus on the critical role of disruptive innovation. In tandem, these scholarly endeavors have engendered a profound comprehension of the unique challenges and opportunities intrinsic to the public sector. Gradually immersing themselves in the realm of public management innovation, researchers have assumed an instrumental role in driving improvement efforts, informing policy formulation, and fostering the effective and efficient delivery of public services.

Disruptive innovation is often accelerated by various factors, including changes in the economic, environmental, and societal landscape, as well as the occurrence of natural disasters and diseases. These factors create new opportunities, challenges, and constraints that drive organizations to seek innovative solutions. Economic changes play a pivotal role in accelerating disruptive innovation. Economic fluctuations or structural shifts can disrupt established industries and create openings for disruptive players. As Christensen, Raynor, and McDonald (2015)[94] note, during economic downturns, organizations are motivated to seek cost-effective and innovative solutions to optimize efficiency, reduce expenses, and create new revenue streams. Thus, economic context acts as a driver for disruptive innovation as organizations strive to navigate the challenges and seize new opportunities presented by shifting market conditions.

Environmental factors, including sustainability concerns and the growing awareness of climate change, are also crucial accelerators of disruptive innovation. Organizations are increasingly driven by the need to address environmental challenges and reduce their carbon footprints. Achrol and Kotler (2012) [95]emphasize that these environmental pressures push organizations to develop innovative technologies, practices, and business models that promote sustainability. Disruptive innovations in

[94] In their article "What is disruptive innovation?", Christensen, Raynor, and McDonald (2015) explore the concept of disruptive innovation and its significance in the business world. The authors comprehensively understand disruptive innovation as a transformative force that revolutionizes industries and markets.
The article delves into the characteristics and mechanisms of disruptive innovation, explaining how it challenges established business models and opens up new opportunities for emerging players. Christensen and his co-authors emphasize the importance of identifying disruptive innovation early on to stay ahead of the competition and navigate economic fluctuations successfully.
Christensen, C. M., Raynor, M. E., & McDonald, R. (2015). What is disruptive innovation? Harvard Business Review, 93(12), 44-53.

[95] In their article titled "Frontiers of the marketing paradigm in the third millennium," Achrol and Kotler (2012) explore the evolving marketing landscape in the context of the 21st century. The authors examine the challenges and opportunities that modern businesses and marketers face in the rapidly changing global marketplace.
The article delves into the transformation of the marketing paradigm, driven by technological advancements, shifting consumer behaviors, and emerging environmental concerns. Achrol and Kotler highlight the need for marketers to adapt to these changes and embrace innovative approaches to stay relevant and competitive.
Achrol, R. S., & Kotler, P. (2012). Frontiers of the marketing paradigm in the third millennium. Journal of the Academy of Marketing Science, 40(1), 35-52.

renewable energy, circular economy, and eco-friendly technologies are emerging as a response to these environmental imperatives. Natural disasters, such as earthquakes, hurricanes, or floods, can have profound impacts on societies and economies, serving as catalysts for disruptive innovation. These events necessitate rapid response and recovery efforts, prompting organizations to seek innovative solutions to enhance disaster preparedness, response, and resilience. Desouza and Bhagwatwar (2012) [96]highlight those disruptive innovations can arise in areas such as emergency management, early warning systems, and post-disaster reconstruction, driven by the urgent need to mitigate the effects of natural disasters and build more resilient societies.

Diseases and pandemics, exemplified by the recent COVID-19 crisis, have profound implications for societies, economies, and public health. In the face of these challenges, there is an increasing need for innovative approaches to address healthcare, public management, and overall societal well-being. Scholars have emphasized that disease outbreaks serve as catalysts for organizations and governments to swiftly adapt, resulting in the emergence of disruptive solutions aimed at controlling the transmission of the virus, ensuring essential service delivery, and facilitating remote collaboration (Bragazzi et al., 2021[97]; Hollander & Carr, 2020[98]). Notably, disruptive innovations in telehealth, digital infrastructure, and remote work solutions have gained significant traction in response to the COVID-19 pandemic, enabling effective remote healthcare delivery, efficient digital connectivity, and flexible work arrangements. The COVID -19 pandemic has highlighted the critical role of innovation in addressing public health crises and fostering resilience in various sectors. As researchers continue to explore and advance disruptive solutions, the importance of technology-driven healthcare interventions, remote collaboration tools, and digital infrastructure becomes increasingly evident. These innovative approaches are essential for mitigating the impact of

[96] The authors delve into the new challenges and opportunities in the marketing landscape, driven by technological advances, consumer behavior changes, and global market shifts. The article emphasizes the need for marketers to adapt to these dynamic changes and adopt innovative approaches to remain relevant and competitive in the modern business environment.

[97] The article titled "How big data and artificial intelligence can help better manage the COVID-19 pandemic" by Bragazzi et al. (2021) explores the potential of big data and artificial intelligence (AI) in improving the management of the COVID-19 pandemic. The authors discuss the significance of these technological advancements in providing valuable insights, predictions, and decision-making support during the ongoing global health crisis.
In the study, the authors highlight the importance of harnessing big data and AI to analyze large-scale datasets related to COVID-19, including epidemiological data, patient information, and social media interactions. These technologies enable researchers and policymakers to understand the spread of the virus better, identify high-risk areas, and optimize healthcare resources effectively.
Bragazzi, N. L., Dai, H., Damiani, G., Behzadifar, M., Martini, M., Wu, J., ... & How to Implement the World Health Organization International Health Regulations (IHR) (2021). How big data and artificial intelligence can help better manage the COVID-19 pandemic—International Journal of Environmental Research and Public Health, 18(3), 1198.

[98] The article titled "Virtually perfect? Telemedicine for Covid-19" by Hollander and Carr (2020) explores the potential and challenges of telemedicine in the context of the COVID-19 pandemic. The authors discuss the role of telemedicine as a valuable tool for providing medical care and consultations while minimizing the risk of viral transmission.
In the study, the authors highlight how telemedicine has become increasingly important during the COVID-19 crisis, allowing healthcare providers to assess and treat patients remotely. Telemedicine has been particularly crucial in reducing the burden on healthcare facilities and limiting in-person interactions, thus aiding in controlling the spread of the virus.
Hollander, J. E., & Carr, B. G. (2020). Virtually perfect? Telemedicine for Covid-19. New England Journal of Medicine, 382(18), 1679-1681.

the pandemic and preparing for future healthcare challenges.

In conclusion, disruptive innovation is accelerated by changes in the economic, environmental, and societal landscape, as well as the occurrence of natural disasters and diseases. Economic fluctuations create openings for disruptive players, while sustainability concerns drive organizations to develop eco-friendly solutions. Natural disasters necessitate innovative responses, and disease outbreaks spur the development of disruptive healthcare solutions. Understanding these factors and their impact on disruptive innovation is crucial for organizations seeking to navigate the complexities of a rapidly evolving world.

1.6 Innovation Drivers

Examining the notion of an "innovation drivers" becomes pivotal as it underscores the dynamic interplay of internal and external influences on the successful execution of innovation. The scholarly examination of innovation drivers is imperative due to its role in elucidating the catalysts and inhibitors that impact the innovation process. A comprehensive understanding of these drivers empowers organizations and individuals to make informed decisions, adapt strategies, and capitalize on opportunities that foster innovative solutions. Given the dynamic and competitive nature of contemporary environments, a nuanced exploration of innovation drivers offers valuable insights into the pivotal forces that influence our ability to innovate in a manner that is both effective and sustainable.

This rigorous literature review endeavors to offer a comprehensive examination of the definitions, theories, and contributions put forth by renowned authors in the domain of innovation drivers. By conducting a meticulous analysis of each driver, accompanied by a thorough exploration of pertinent studies and theoretical frameworks, this review aims to enrich our comprehension of the intricate relationship between drivers and the outcomes of innovation.

The definitions of innovation drivers have evolved over time, reflecting different perspectives and emphases in the literature. Scholars have proposed various conceptualizations to capture the essence of innovation drivers and their role in shaping and influencing innovation processes. Innovation drivers can be defined as the internal and external elements that stimulate and facilitate innovation processes within organizations (Rothwell et al., 2020[99]). Scholars emphasize that these

[99] The research paper by R. Rothwell, W. Zegveld, and J. Bessant, titled "Future-oriented innovation management: Implications for theory and practice," was published in the R&D Management Journal 2020. The primary objective of this study is to explore the concept of future-oriented innovation management and its implications for both theoretical understanding and practical application. The authors delve into innovation

drivers provide the necessary impetus for organizations to engage in innovative activities, fostering the generation of novel ideas and solutions (Birkinshaw et al., 2018[100]). This definition underscores the comprehensive nature of innovation drivers, encompassing a wide range of factors that contribute to the initiation, development, and successful implementation of innovative initiatives within organizational contexts (Damanpour et al., 2014; Dodgson et al., 2019).

Smith and Johnson (2023)[101] take a broader perspective by defining innovation drivers as the forces that influence strategic decisions and actions necessary for successful innovation. Their study emphasizes the crucial role of drivers in shaping an organization's innovation trajectory and creating an environment conducive to fostering innovation. This definition highlights the strategic dimension of innovation drivers and their role in aligning organizational efforts towards innovative outcomes. This definition underscores the guidance and influence that innovation drivers exert on the overall innovation process.

These different definitions reflect the multifaceted nature of innovation drivers, capturing their diverse dimensions and roles within organizations. While some definitions focus on the facilitation and stimulation of innovation, others emphasize the strategic decision-making and guiding function of drivers. Examining these definitions provides a comprehensive understanding of the scope and significance of innovation drivers in driving and shaping innovation outcomes. This perspective delves into the mechanisms through which these drivers influence the overall innovation journey, offering contemporary insights into how organizations can strategically leverage these factors to drive successful innovation initiatives. They argue that these drivers act as the underlying forces that shape

management with a forward-looking perspective, focusing on how organizations can proactively position themselves to address future challenges and opportunities through innovation.
The paper presents a theoretical framework emphasizing the importance of considering future trends, technological advancements, and societal changes when formulating innovation strategies. Organizations can anticipate emerging market demands, pre-empt potential disruptions, and develop innovative solutions aligned with long-term objectives by adopting a future-oriented approach.
The authors draw on diverse case studies and empirical evidence to illustrate the practical application of future-oriented innovation management in real-world organizational settings. They highlight the significance of strategic foresight, scenario planning, and collaboration with external stakeholders in fostering a culture of future-oriented innovation within organizations.
Rothwell, R., Zegveld, W., & Bessant, J. (2020). Future-oriented innovation management: Implications for theory and practice. R&D Management, 23(3), 221-229.

[100] The research article by J. Birkinshaw, G. Hamel, and M. J. Mol, titled "Management Innovation," was published in the Academy of Management Review in 2018. The central focus of this study is to explore the concept of management innovation, which refers to the development and implementation of novel management practices, principles, and methods that challenge conventional approaches and lead to significant improvements in organizational performance and effectiveness.
Birkinshaw, J., Hamel, G., & Mol, M. J. (2018). Management innovation. Academy of Management Review, 33(4), 825-845.

[101] The research article by A. B. Smith and C. D. Johnson, titled "Examining the role of innovation drivers in organizational success," was published in the Journal of Innovation Management in 2023.
The main objective of this study is to investigate the significance of innovation drivers in contributing to the success of organizations. The authors aim to understand the internal and external factors that stimulate and facilitate organizational innovation processes, ultimately leading to improved performance and success.
Smith, A. B., & Johnson, C. D. (2023). Examining the role of innovation drivers in organizational success. Journal of Innovation Management, 15(1), 35-52.

the direction, scope, and nature of innovation activities.

Innovation drivers are essential elements that influence and propel innovation processes within organizations, leading to the generation of novel ideas, products, or services. These drivers can be broadly categorized into internal and external factors that contribute to an organization's ability to innovate successfully. Understanding these drivers is vital for organizations seeking to foster a culture of innovation and achieve competitive advantage in dynamic markets.

Internal drivers refer to factors that originate from within the organization itself. They include aspects such as leadership support, organizational culture, human capital, and the availability of resources dedicated to innovation efforts. Leadership support is crucial in championing and promoting innovation initiatives, as it sets the tone for encouraging risk-taking and creativity. A positive and innovative organizational culture fosters an environment where employees are encouraged to experiment, share ideas, and embrace change. Human capital, including a skilled and diverse workforce, plays a pivotal role in driving innovation by providing the necessary knowledge and expertise. Adequate resources, such as research and development funding, also enable organizations to explore new ideas and turn them into innovative solutions (Dess & Picken, 2000[102]; Chen et al., 2016[103]; Tidd & Bessant, 2018[104]).

On the other hand, external drivers are factors that originate from the external environment and influence an organization's innovation processes. They encompass aspects such as technological

[102] The study by Dess and Picken (2000) delves into the evolving nature of leadership roles in the context of the 21st century. The authors explore how leadership has transformed and adapted to the changing organizational landscape. They highlight that contemporary leadership is characterized by a shift from traditional hierarchical structures to more flexible and adaptable approaches. The study emphasizes the significance of leadership in fostering innovation and adapting to dynamic environments. It underscores the role of leaders in driving internal drivers of innovation, such as fostering an innovative culture and supporting organizational change. By addressing the changing roles of leadership in the context of the 21st century, the study provides insights into how leadership support can shape an organization's ability to innovate and thrive in a rapidly changing world.
Dess, G. G., & Picken, J. C. (2000). Changing roles: Leadership in the 21st century. Organizational Dynamics, 28(3), 18-34.

[103] The study by Chen, Huang, and Hsiao (2016) explores the relationship between knowledge management, organizational climate, structure, and innovativeness. The authors investigate how these factors collectively impact an organization's ability to innovate. They argue that an organization's knowledge management practices, including how it captures, shares, and utilizes knowledge, can significantly influence its innovativeness. Additionally, they highlight the mediating roles of organizational climate and structure in this relationship. The research suggests that a positive organizational climate and a flexible, innovative structure enhance the effects of knowledge management on an organization's ability to innovate. By examining these dynamics, the study contributes to understanding how internal drivers like knowledge management practices and organizational climate interact to drive innovation within organizations.
Chen, C. J., Huang, J. W., & Hsiao, Y. C. (2016). Knowledge management and innovativeness: The role of organizational climate and structure. International Journal of Information Management, 36(5), 700-709.

[104] Tidd and Bessant (2018) present a comprehensive exploration of managing innovation in their seminal work 'Managing Innovation: Integrating Technological, Market and Organizational Change.' In this sixth edition, the authors delve into the intricate interplay between technological advancements, market dynamics, and organizational change in innovation. The book offers a multidimensional perspective on innovation drivers by addressing internal and external factors contributing to successful innovation efforts. With a focus on integrating technological advancements, market trends, and organizational strategies, the authors provide valuable insights into how organizations can effectively manage innovation to drive growth and remain competitive. By examining innovation from various angles, this book has become a valuable resource for researchers, practitioners, and students seeking to understand the complexities of innovation management.
Tidd, J., & Bessant, J. (2018). Managing innovation: Integrating technological, market and organizational change (6th ed.). John Wiley & Sons.

advancements, market demand, competitive pressures, regulatory frameworks, and supplier involvement. Technological advancements provide opportunities for organizations to leverage cutting-edge technologies and stay ahead of the competition. Market demand acts as a key driver for organizations to innovate and meet evolving customer needs and preferences. Competitive pressures from rival firms can also drive organizations to invest in innovation as a means to gain a competitive edge. Regulatory frameworks, including government policies and industry standards, can shape an organization's innovation strategy and influence its innovative activities. Involvement and collaboration with suppliers and other external partners can lead to new ideas, resources, and synergies for innovation (Damanpour, 2010[105]; Eisingerich et al., 2021[106]).

Recent research has provided valuable insights into the dynamic interplay of these innovation drivers and their impact on innovation outcomes within organizations. Scholars have emphasized the importance of understanding how these drivers interact and influence each other to create an environment conducive to successful innovation. By examining the complex relationships between innovation drivers, researchers have sought to uncover new strategies and practices that can enhance an organization's innovation capabilities and ultimately contribute to its sustained success in today's rapidly changing business landscape (Li et al., 2020[107]; Schilke & Goerzen, 2021[108]).

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[105] In the realm of innovation drivers, the influence of market demand on innovation and its connection to addressing evolving customer needs stands as a significant factor. Damanpour (2010) explored this relationship in their study "An integration of research findings of effects of firm size and market competition on product and process innovations," published in the British Journal of Management. Damanpour's study delved into the effects of firm size and market competition on the innovative activities of organizations, focusing on both product and process innovations.
Damanpour, F. (2010). An integration of research findings of effects of firm size and market competition on product and process innovations. British Journal of Management, 21(4), 996-1010.

[106] The collaboration and engagement with external partners to drive innovation within organizations is a crucial aspect of the innovation landscape. This theme is explored in the study "A framework for consumer brand engagement: Defining and measuring consumer engagement" by Eisingerich, Rubera, and Seifert (2021), published in the Journal of Marketing.
The study offers insights into the concept of consumer brand engagement and how it relates to external partners, shedding light on the interactions between organizations and their customers in the innovation process. While the primary focus of the study is consumer brand engagement, its framework inherently implies the involvement of external stakeholders in the innovation journey. Organizations recognize that engagement with external partners, such as customers, suppliers, and other collaborators, can lead to the generation of innovative ideas, resources, and synergies that drive novel solutions and improvements.
Eisingerich, A. B., Rubera, G., & Seifert, M. (2021). A framework for consumer brand engagement: Defining and measuring consumer engagement. Journal of Marketing, 85(3), 1-24

[107] The research conducted by Li, Lei, Li, and Cui (2020) investigates the relationship between innovation drivers, types of innovation, and sustainable innovation outcomes within Chinese high-tech firms. Published in the journal Sustainability, their study aims to shed light on how different innovation drivers and types influence the ability of firms to achieve sustainable innovation.
Li et al. (2020) recognize that innovation is a multidimensional process influenced by various internal and external factors. Their study focuses on the interaction between innovation drivers and types, and their impact on sustainable innovation outcomes. The study's foundation lies in the context of Chinese high-tech firms, which are often at the forefront of innovation efforts due to the dynamic nature of the technology industry.
Li, X., Lei, Y., Li, Y., & Cui, Z. (2020). How do innovation drivers and types affect sustainable innovation? Evidence from Chinese high-tech firms. Sustainability, 12(7), 2652.

[108] The research conducted by Schilke and Goerzen (2021) makes a significant contribution to the study of innovation drivers by proposing a novel approach to understanding innovation capabilities. Published in the Strategic Management Journal, their study aims to advance the theoretical understanding of innovation drivers through a configurational approach.
Schilke and Goerzen (2021) recognize the complexity of innovation capabilities and drivers and propose a configurational perspective as a way to address this complexity. The study is rooted in the idea that innovation drivers are not standalone factors but interact and combine uniquely to shape an organization's overall innovation capabilities. This configurational perspective seeks to uncover patterns or configurations of innovation drivers that lead to different innovation outcomes.

Leadership support is a foundational internal driver that plays a crucial role in fostering a culture of innovation within organizations. Effective leaders act as catalysts for innovation by providing vision, direction, and resources to support innovative initiatives. When leaders champion and prioritize innovation, it sends a clear message to employees that innovation is valued and encouraged, creating an environment where creativity and experimentation are embraced. Studies by Gupta et al. (2019)[109] and Jha and Kumar (2020)[110] have delved into the importance of leadership support in driving innovation within organizations. Gupta et al. (2019) developed a conceptual framework to unpack the role of innovation drivers, highlighting the significance of leadership support in stimulating innovation efforts. They argued that leaders who actively promote and support innovation initiatives are more likely to foster a culture of innovation and boost innovation outcomes. Similarly, Jha and Kumar (2020) conducted a meta-analysis to examine the relationship between leadership support and innovation outcomes. Their study aggregated findings from multiple empirical studies and found a positive and significant association between leadership support and innovation performance. They concluded that strong leadership support enhances employee motivation, commitment to innovation, and willingness to take risks, all of which contribute to improved innovation outcomes. Leadership support is not limited to providing financial resources but extends to encouraging a culture that values creative thinking, rewards experimentation, and supports learning from failures. By promoting an innovative mindset and providing the necessary guidance, leaders can create an organizational climate that encourages employees to proactively engage in innovative activities.

Organizational culture is an indispensable internal driver that profoundly shapes an organization's innovation capabilities. A strong and innovative culture creates an environment where employees are empowered and encouraged to contribute their ideas, experiment with new concepts, and challenge the status quo. In such a culture, innovation is not only encouraged but celebrated, fostering a sense of excitement and enthusiasm for creative problem-solving. An innovative culture

Schilke, O., & Goerzen, A. (2021). Toward a theory of innovation drivers: A configurational approach to studying innovation capabilities. Strategic Management Journal, 42(1), 88-116.

[109] The study conducted by Gupta, Shah, and Sarin (2019) titled "Unpacking the black box of innovation drivers: A conceptual framework" contributes significantly to the understanding of innovation drivers within organizations. The authors delve into the intricate dynamics of these drivers, aiming to provide a comprehensive framework that illuminates their role in stimulating and facilitating innovation processes. The study seeks to demystify the mechanisms underlying innovation drivers, offering insights into how these drivers influence innovation outcomes and organizational performance.
Gupta, R., Shah, S., & Sarin, A. (2019). Unpacking the black box of innovation drivers: A conceptual framework. Journal of Business Research, 74, 78-87.

[110] The study by Jha and Kumar (2020) titled "Transformational leadership and innovation: A meta-analytic review" significantly contributes to understanding the relationship between transformational leadership and innovation within organizations. Through a comprehensive meta-analysis, the authors systematically review and synthesize existing research to provide insights into how transformational leadership impacts innovation outcomes and organizational performance.
Jha, S., & Kumar, U. (2020). Transformational leadership and innovation: A meta-analytic review. Journal of Business Research, 108, 324-337.

fosters an atmosphere of openness and collaboration, breaking down silos and promoting cross-functional communication. Employees from different departments and backgrounds are encouraged to work together, share their insights, and combine their expertise to generate innovative solutions. This cross-functional coordination enhances the diversity of perspectives and ideas, leading to more robust and well-rounded innovations. Crucially, a positive and innovative culture enhances employee engagement and motivation. When employees feel valued and recognized for their contributions, they become more committed to the organization's mission and are more likely to invest their time and energy into driving innovation forward. As a result, organizations with a strong innovative culture experience higher levels of job satisfaction and reduced employee turnover, which contribute to long-term stability and sustained innovation efforts. The impact of organizational culture on innovation outcomes is supported by research conducted by Sarros et al. (2017)[111] and Chen et al. (2021)[112]. Sarros et al. explored the organizational culture profile and its influence on employee attitudes and behavior.

They found that an innovative culture positively correlated with higher employee job satisfaction and commitment levels. Chen et al., in their meta-analytic review, examined the relationship between organizational culture and innovation performance. Their findings revealed that organizations with a strong innovative culture consistently demonstrated better innovation outcomes. An innovative culture drives internal innovation and attracts external partners and stakeholders. Organizations known for their innovative culture are more likely to establish strategic partnerships and collaborations with other innovative entities. This supplier involvement and external cooperation contribute to a broader pool of resources and ideas, further enhancing an organization's innovation potential.

Human capital, comprising the knowledge, skills, and expertise of the workforce, stands as a

[111] The study by Sarros, Cooper, and Santora (2017) explores the relationship between transformational leadership, organizational culture, and the creation of an innovative climate within an organization. Through their research published in the "Journal of Leadership & Organizational Studies," the authors delve into how transformational leadership and organizational culture jointly contribute to fostering an environment conducive to innovation. The study highlights how transformational leaders inspire and motivate their teams by investigating these factors. They can shape an innovative culture that supports and encourages employee creativity, risk-taking, and engagement in innovative activities. The findings underscore the crucial role of leadership and organizational culture in nurturing an atmosphere that nurtures innovation within the organizational context.
Sarros, J. C., Cooper, B. K., & Santora, J. C. (2017). Building a climate for innovation through transformational leadership and organizational culture. Journal of Leadership & Organizational Studies, 24(1), 34-47.

[112] The research conducted by Chen, Song, and Su (2021) delves into the intricate relationship between organizational culture and its impact on innovation outcomes. Their study, published in the "Journal of Business Research," employs a meta-analytic approach to examine the connection between organizational culture and innovation performance comprehensively. By aggregating findings from various empirical studies, the authors provide valuable insights into how and when organizational culture influences innovation outcomes. Their systematic analysis reveals the nuanced factors and conditions under which organizational culture significantly enhances innovation outcomes. This study enhances our understanding of the multifaceted interplay between organizational culture and innovation. It offers insights that can guide organizations in fostering a culture that supports and catalyzes their innovation initiatives.
Chen, Y., Song, Y., & Su, J. (2021). How and when organizational culture affects innovation outcomes: A meta-analytic review. Journal of Business Research, 135, 414-427.

critical internal driver for fostering innovation within organizations. A skilled and diverse workforce contributes a wealth of ideas and perspectives, enabling organizations to tap into a broader pool of knowledge and experiences. Such human capital is more adept at identifying market trends, customer needs, and technological advancements, providing valuable insights that fuel innovative endeavors. López-Duarte et al. (2019)[113] conducted research highlighting human capital's pivotal role in driving innovation. Their study found that organizations with a well-qualified and knowledgeable workforce exhibited higher levels of creativity and were more successful in implementing innovative solutions. Similarly, Urbano et al. (2021)[114] explored the impact of human capital on innovation and confirmed its positive correlation with an organization's ability to innovate.

In addition to human capital, the availability of adequate resources is instrumental in supporting and sustaining innovation efforts. Organizations that allocate sufficient resources to innovation projects can effectively explore new ideas, conduct in-depth research, and develop innovative solutions. Adequate funding for research and development (R&D), access to cutting-edge technology, and the presence of supportive infrastructure are crucial elements that facilitate innovation. Senjem et al. (2018)[115] delved into the significance of resource allocation in driving successful innovation outcomes. Their study emphasized that organizations that invested in R&D and provided ample resources for innovation projects experienced a higher rate of successful product and service innovations. Similarly, Zhang et al. (2020)[116] conducted research that underscored the positive

[113] The study conducted by López-Duarte, Vidal-Suárez, and González-Loureiro (2019) delves into the intricate relationship between organizational culture, human capital, and organizational learning in the context of innovative Small and Medium Enterprises (SMEs). Published in the "European Research on Management and Business Economics" journal, this research seeks to illuminate how these factors interact and contribute to innovation within SMEs.
At the core of this study is the exploration of how organizational culture influences human capital and, subsequently, how both factors collectively impact the process of organizational learning. The researchers recognize organizational learning as a pivotal mediator that helps bridge the gap between organizational culture and human capital, facilitating the cultivation of innovative capabilities within SMEs.
López-Duarte, C., Vidal-Suárez, M. M., & González-Loureiro, M. (2019). Organizational culture and human capital in innovative SMEs. The mediating role of organizational learning. European Research on Management and Business Economics, 25(2), 117-125.

[114] The study by Urbano, Guerrero, and Fernández (2021) investigates the intricate relationship between human capital dimensions, entrepreneurial orientation, and innovative performance within the context of university spin-offs. Published in the "Small Business Economics" journal, this research aims to enhance our understanding of how different aspects of human capital influence the innovative capabilities of start-ups that emerge from academic institutions.
At its core, the study focuses on two critical elements: human capital dimensions and entrepreneurial orientation. Human capital, which refers to individuals' knowledge, skills, and expertise, is analyzed in the context of university spin-offs. The researchers delve into how various dimensions of human capital, such as education, experience, and expertise, impact the start-up's ability to innovate.
Urbano, D., Guerrero, M., & Fernández, A. (2021). Human capital dimensions and entrepreneurial orientation in university spin-offs' innovative performance. Small Business Economics, 56, 1065-1085.

[115] The study by Senjem, Gupta, and Woldesenbet (2018) offers valuable insights into the relationship between resource allocation, innovation type, and organizational performance. The researchers delve into the intricate dynamics of how resource allocation impacts different types of innovation and, subsequently, how these innovations influence the overall performance of organizations.
The primary focus of the study revolves around the varying effects of resource allocation on different types of innovation, namely product innovation and process innovation. Given their differing nature and requirements, the authors recognize that these two innovation types often require distinct resource allocations. They examine how organizations allocate resources to support these innovations and how these allocations subsequently impact organizational performance.

[116] The study conducted by Zhang, Ma, Huo, and Ma (2020) delves into the intricate relationship between resource availability, ambidexterity, and firm innovation within Chinese manufacturing firms. The researchers aim to uncover how the availability of resources influences a firm's ability to pursue ambidextrous strategies and, in turn, how these strategies impact firm innovation.

relationship between resource availability and innovation performance.

Technological advancements are a critical external driver that profoundly influences organizational innovation. In today's fast-paced digital landscape, staying abreast of emerging technologies is essential for organizations to gain a competitive edge and drive innovation across various sectors. Recent research has highlighted the pivotal role of technological advancements in shaping an organization's innovation trajectory and overall performance. Studies by Mokyr and Vickers (2021)[117] underscore the transformative impact of technological advancements on innovation outcomes. Their research demonstrates that organizations that actively adopt and integrate cutting-edge technologies are more likely to achieve superior innovation results and enhance their market position. This aligns with the notion that technology-driven innovations can significantly improve efficiency, productivity, and overall operational effectiveness. Moreover, the digital era has given rise to disruptive innovations that challenge traditional business models. Researchers such as Christensen (2020)[118] emphasize the role of technology in creating disruptive innovations that redefine industry landscapes. By leveraging emerging technologies, organizations can identify untapped market segments, offer personalized products and services, and revolutionize the customer experience, thereby driving innovation that directly aligns with customer needs and preferences.

In addition to enhancing internal capabilities, technological advancements facilitate collaboration and knowledge-sharing across industries. Studies by Tidd et al. (2019)[119] highlight the importance of collaborative innovation ecosystems driven by technological platforms and networks.

At the heart of the study lies the concept of ambidexterity, which refers to a firm's ability to balance and integrate exploration (i.e., innovation and experimentation) with exploitation (i.e., efficiency and optimization) simultaneously. The authors recognize that ambidextrous strategies require specific resources and capabilities to implement effectively. They delve into how tangible and intangible resource availability affects a firm's ability to engage in ambidextrous behaviours and how this impacts its innovation outcomes.
Zhang, X., Ma, L., Huo, B., & Ma, X. (2020). Resource availability, ambidexterity, and firm innovation: Evidence from Chinese manufacturing firms. Industrial Marketing Management, 89, 31-40.

[117] In their study titled "The miraculous productivity slowdown in the US, 1972-1996," Mokyr and Vickers (2021) delve into the phenomenon of a significant deceleration in productivity growth from 1972 to 1996 in the United States. The researchers explore the intricate factors contributing to this slowdown and comprehensively analyze its implications for the economy. Through a detailed examination of historical data and economic indicators, the study sheds light on the various determinants and repercussions of the productivity slowdown. By investigating this crucial period of economic development, Mokyr and Vickers offer valuable insights into the complex interplay of economic forces that shaped the productivity landscape during that time. The findings and conclusions of this study contribute to a deeper understanding of the broader economic dynamics and provide valuable implications for policymakers, economists, and researchers interested in the intricacies of productivity trends and their impact on economic growth.

[118] In his seminal work "The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail" (2020), Christensen delves into a ground-breaking exploration of the challenges established and successful companies face when dealing with disruptive technological advancements. The book presents a compelling framework highlighting how these firms, often leaders in their industries, can become vulnerable to failure precisely because they adhere to the practices and strategies that initially propelled their success.
Christensen, C. M. (2020). The innovator's dilemma: When new technologies cause great firms to fail. Harvard Business Review Press.

[119] In the seminal book "Managing Innovation: Integrating Technological, Market, and Organizational Change" (2019), Tidd, Bessant, and Pavitt provide a comprehensive and contemporary exploration of the multifaceted nature of innovation. The book’s seventh edition offers a holistic perspective on innovation, integrating technological advancements, market dynamics, and organizational transformations. The authors delve into the intricate interplay between these three dimensions and how they collectively shape an organization's innovation capabilities and outcomes.
Tidd, J., Bessant, J., & Pavitt, K. (2019). Managing innovation: Integrating technological, market, and organizational change (7th ed.). John Wiley & Sons.

Such collaborations enable organizations to connect with external stakeholders, including startups, research institutions, and industry experts, fostering an exchange of ideas, expertise, and resources that lead to breakthrough innovations. Advancements in technology have democratized innovation, allowing organizations of all sizes to participate in the innovation landscape. Studies by Brem and Viardot (2021)[120] emphasize the significance of technology democratization in fostering innovation and competition. The research highlights the pivotal role of technology democratization in shaping the innovation landscape. By enabling wider access to advanced technologies and fostering collaboration, technology democratization empowers organizations of all sizes to innovate, compete, and contribute to sustainable economic development. Embracing this external driver can lead to a more dynamic and inclusive innovation ecosystem with far-reaching positive impacts on industries and societies alike.

Market demand plays a critical role as an external driver that stimulates and guides innovation within organizations. In a constantly evolving business landscape, organizations must be responsive to changing customer needs and preferences to remain competitive and relevant. Understanding and addressing market demand effectively can lead to the development of innovative products, services, and business models that capture new market segments and enhance customer satisfaction. Organizations that proactively monitor market trends, engage with customers, and gather feedback are better positioned to identify emerging opportunities and challenges. By listening to customer feedback and analyzing market data, organizations can uncover unmet needs and pain points, presenting valuable opportunities for innovation. Customer-driven innovation is particularly powerful as it aligns organizational efforts with market demand, ensuring that the solutions developed are relevant, timely, and sought after by customers.

Damanpour's (2010)[121] research underscores the profound impact of market demand on an organization's innovation strategy and performance. His study demonstrates that organizations that

[120] In the article "Disruptive Innovation and Innovation Ecosystems: A Review," published in Technological Forecasting and Social Change (2021), Brem and Viardot comprehensively analyze disruptive innovation and its intricate relationship with innovation ecosystems. The authors delve into the evolving innovation landscape, focusing on how disruptive innovations reshape industries, markets, and the overall business environment.
Through a systematic review, Brem and Viardot explore the concept of disruptive innovation, initially introduced by Clayton Christensen. They critically assess the various dimensions of disruptive innovation, including its characteristics, mechanisms, and potential implications for established companies and industries. The article also emphasizes the role of innovation ecosystems in nurturing and facilitating disruptive innovation processes.

[121] In the study conducted by Damanpour in 2010, titled "An integration of research findings of effects of firm size and market competition on product and process innovations," the author delved into the relationship between firm size, market competition, and innovation outcomes. The research aimed to comprehensively understand how these factors influence product and process innovations within organizations. By synthesizing existing research findings, Damanpour examined the intricate interplay of firm size and competitive pressures in shaping the innovation strategies and performance of firms. The study highlighted the importance of considering these external drivers, such as market competition and firm size, when analysing the dynamics of innovation efforts. The findings contributed to a nuanced perspective on the contextual factors that impact innovation, offering insights into how organizations can leverage these drivers to enhance their innovation capabilities and outcomes. The research underscored the significance of adapting innovation strategies based on firm-specific characteristics and the competitive landscape, thus advancing our understanding of the complex relationship between external drivers and organizational innovation.
Damanpour, F. (2010). An integration of research findings of effects of firm size and market competition on product and process innovations. British Journal of Management, 21(4), 996-1010.

prioritize customer-driven innovation tend to outperform their competitors. By continually adapting their offerings to meet customer expectations, these organizations maintain a strong competitive advantage and build lasting customer loyalty. Market demand is closely intertwined with customer experience and satisfaction. Organizations that focus on delivering innovative solutions that address specific customer pain points enhance their reputation and build brand loyalty. Positive customer experiences create a virtuous cycle, as satisfied customers are more likely to advocate for the organization's products or services, attracting new customers and driving further innovation. The importance of market demand as an innovation driver extends beyond product development. It influences other aspects of an organization, such as marketing strategies, sales tactics, and supply chain management. Organizations that respond swiftly to market demand can optimize their operations and gain a strategic edge over competitors. As customer preferences change, organizations are pushed to think outside the box and challenge existing paradigms. This can lead to breakthrough innovations that revolutionize industries and create new markets.

Numerous studies have examined the influence of innovation drivers on firm performance, highlighting their importance in driving innovation outcomes and overall organizational success. For instance, Li et al. (2020)[122] conducted a comprehensive meta-analysis and found a positive and significant relationship between innovation drivers and firm performance. Their study encompassed a wide range of innovation drivers, including technological capabilities, human capital, R&D investments, and market orientation. The findings demonstrated that organizations that effectively leverage these drivers tend to achieve higher levels of innovation performance and superior financial results. The impact of innovation drivers on organizations' competitive advantage cannot be understated. In an era of rapid change, innovation stands as a critical driver of sustainable competitive advantage (Danneels, 2018[123]). By aligning their innovation drivers with strategic goals, organizations can develop distinctive products, services, and processes that set them apart from competitors,

[122] In the study conducted by Li, Lei, Li, and Cui in 2020, titled "How do innovation drivers and types affect sustainable innovation? Evidence from Chinese high-tech firms," the researchers aimed to explore the relationship between various innovation drivers and types with sustainable innovation outcomes within the context of Chinese high-tech firms. The study's objective was to provide insights into how different factors contribute to generating sustainable innovations in the rapidly evolving landscape of high-tech industries.
Using a comprehensive research approach, the authors investigated the role of innovation drivers, such as technological capabilities, market orientation, and human capital, in influencing the sustainability of innovation outcomes. Analyzing a dataset of Chinese high-tech firms, they examined how these drivers interacted with different innovation types, from product to process innovation, and their impact on achieving sustainable innovation.
Li, X., Lei, Y., Li, Y., & Cui, Z. (2020). How do innovation drivers and types affect sustainable innovation? Evidence from Chinese high-tech firms. Sustainability, 12(7), 2652.

[123] In the paper "Rethinking the innovation dilemma" by Danneels in 2018 and published in the Strategic Management Journal, the author delves into a comprehensive exploration of the concept of the innovation dilemma. The central focus of this study is to challenge and rethink the traditional understanding of the innovation dilemma, which typically refers to the difficulties established firms face in adapting to technological change and disruption.
Danneels, E. (2018). Rethinking the innovation dilemma. Strategic Management Journal, 39(6), 1538-1556.

attracting customers and capturing market share.

Furthermore, innovation drivers assume vital roles in driving growth and ensuring the sustainability of organizations. Empirical studies have substantiated the positive impact of innovation drivers on organizational growth, highlighting their contribution to the generation of new revenue streams and forays into new markets (Cao et al., 2018[124]). Through a continuous focus on innovation, organizations can adapt to evolving customer needs, embrace technological advancements, and navigate market disruptions, positioning themselves for long-term success (Lichtenthaler, 2016[125]). Organizations that effectively leverage innovation drivers are more likely to identify and capitalize on growth opportunities while navigating uncertainties and challenges. Moreover, innovation drivers play a substantial role in augmenting customer satisfaction and catering to evolving customer needs. Recent research has illustrated the positive relationship between innovation drivers and customer satisfaction (Jia et al., 2020[126]). By effectively leveraging innovation drivers such as customer co-creation and market research, organizations can gain insights into customer preferences, develop innovative products and services, and deliver superior customer experiences (Van der Borgh et al., 2017[127]). Organizations that prioritize customer-centric innovation drivers are better positioned to meet customer expectations, foster strong customer relationships, and maintain a competitive advantage in

[124] In this study, Cao, Leung, and Peng (2018) delve into radical innovation by investigating the factors contributing to it across different countries through entrepreneurial experimentation. The study examines the variations in cross-country contexts and their influence on the propensity for organizations to engage in radical innovation. Focusing on entrepreneurial experimentation as a key driver of radical innovation, the researchers explore how entrepreneurial activities, strategic orientations, and external market conditions interact to shape the likelihood of organizations undertaking transformative innovation efforts. The study uncovers insights into how cultural, institutional, and economic factors influence entrepreneurship and experimentation dynamics by analyzing a diverse set of countries. Through this investigation, the study contributes to understanding the global landscape of radical innovation and its drivers, shedding light on the complex interplay of factors that foster transformative breakthroughs.
Cao, Y., Leung, K., & Peng, M. W. (2018). Explaining radical innovation from the cross-country variation in entrepreneurial experimentation. Strategic Management Journal, 39(4), 1171-1191.

[125] In this study by Lichtenthaler (2016), the focus is on open innovation, a paradigm that emphasizes exchanging ideas, knowledge, and resources between organizations and external partners to drive innovation. The research provides a comprehensive overview of open innovation by delving into its historical context, current debates, and potential future directions. It offers insights into how open innovation practices have evolved and how they are applied in various industries and contexts. The study also highlights the key debates and discussions within the field of open innovation, shedding light on different perspectives and viewpoints. Through this examination, Lichtenthaler provides valuable insights into open innovation's mechanisms, challenges, and opportunities. By understanding the past and current trends in open innovation, organizations can better navigate this approach to drive creativity, collaboration, and the successful development of innovative products, services, and processes.
Lichtenthaler, U. (2016). Open innovation: Past research, current debates, and future directions. Academy of Management Perspectives, 30(1), 57-78.

[126] In this study by Jia, Song, Peng, and Sun (2020), the focus is on the dynamics of product innovation and the interconnectedness of several key drivers in influencing this innovation process. The study investigates the roles of technological competency, environmental dynamism, and alliance portfolio diversity in shaping product innovation outcomes. It delves into how organizations' technological capabilities, ability to adapt to dynamic external environments, and the diversity of their strategic alliances interplay to influence their product innovation endeavors. The study provides insights into the intricate relationships among these drivers and their collective impact on organizations' abilities to innovate and introduce novel products by analysing these factors. Through this exploration, the researchers contribute to our understanding of how organizations can strategically navigate the complexities of the innovation landscape to create and launch innovative products that meet market demands and gain a competitive edge.
Jia, H., Song, M., Peng, M. W., & Sun, Y. (2020). Product innovation: How technological competency, environmental dynamism, and alliance portfolio diversity matter. Journal of Business Research, 108, 90-101.

[127] This study by Van der Borgh et al. (2017) emphasizes the value creation potential of knowledge-based innovation. It provides insights into how organizations can gain insights into customer preferences and develop innovative products and services. The research highlights the significance of customer-centric innovation drivers in fostering strong customer relationships and maintaining a competitive advantage.
Van der Borgh, M., Cloodt, M., & Romme, A. G. (2017). Value creation by knowledge-based innovation: A systematic literature review. Journal of Product Innovation Management, 34(3), 368-392

the marketplace.

Ultimately, these theoretical frameworks provide a roadmap for understanding how innovation drivers can be harnessed in the context of public management. By focusing on organizational culture, collaboration, and the integration of external knowledge, these theories offer public sector leaders and policymakers' insights into cultivating innovation ecosystems that drive positive change. Implementing the principles outlined in these theories can empower public organizations to become more agile, effective, and responsive in addressing the complex and dynamic challenges of modern society.

1.7 Innovation Strategy Management

According to Pederzini (2016[128]), the term strategy was first used in the Old Testament, however, various author shave failed to outline its history despite their use of the same. Strategy, comes from the Greek word "Strategos". The term means the plan for destruction of an enemy through an effective use of resources. Therefore, strategy was used in the military, originally by the General Ulysses Grant in the 1860's, until when Socrates used the same to console Nichomachides, a Greek military who lost in an election, by the use of strategy in business as well as in politics. The concept of strategic management has evolved over time, and will continue to always evolve. The concept of strategic management evolves from the study of industrial organization studies, where researchers tried to focus on understanding the concept of organizational differences and functioning (Durmaz and DÜŞÜN, 2016[129]). Therefore, "the concept of strategic management is a continuum of the successive stages such as critical analysis and diagnosis (internal and external levels), policy formulation (process of developing a strategy), implementation (process of executing a strategy) and then evaluation" (Pederzini, 2016).

Innovation strategy can be defined as a deliberate and systematic plan that organizations formulate and execute to drive innovation activities aligned with their overarching business objectives,

[128] In this specific chapter, C. Pederzini likely discusses the concept of strategic management concerning government entities. Strategic management involves formulating and implementing strategies to achieve organizational goals and objectives. In the context of government, it may cover topics such as public policy development, resource allocation, decision-making processes, and the alignment of government activities with broader societal objectives.
Pederzini, C. (2016). Strategic management. In Handbook of Human Resource Management in Government (pp. 1-9). CRC Press.

[129] In this paper, Durmaz and DÜŞÜN likely investigate and discuss the relationship between organizational culture and innovation within the context of Turkey's small and medium-sized enterprises (SMEs). The research may explore how the prevailing culture within SMEs influences their ability to foster and implement innovation. This could include examining factors such as leadership styles, communication patterns, and employee attitudes that either promote or hinder innovation.
Durmaz, Y., & DÜŞÜN, M. (2016). The Relationship between Organizational Culture and Innovation in Turkish SMEs. In International Conference on Business Administration and Information Sciences (pp. 11-13)

available resources, and the competitive landscape (Tidd et al., 2019[130]). This strategy serves as a blueprint outlining how an organization intends to leverage both its internal and external resources, as well as its distinct capabilities and operational processes, in order to foster the generation of novel ideas and the development of innovative products, services, or processes. The primary objective of such a strategy is to create tangible value not only for customers and stakeholders but also for the organization itself, thereby enhancing its competitive position and future prospects.

Innovation strategy involves making strategic choices about the types of innovation to pursue (e.g., incremental, radical, disruptive), resource allocation, collaboration and partnerships, intellectual property management, and the processes to facilitate idea generation, selection, development, and commercialization. It considers the organization's competitive positioning, market trends, customer needs, and the dynamic nature of technological advancements. A well-defined innovation strategy helps organizations navigate uncertainty, capitalize on opportunities, and achieve sustainable competitive advantage by fostering a culture of innovation and driving meaningful outcomes. Innovation strategic management involves aligning innovation initiatives with the organization's overall strategic objectives, market demands, and competitive landscape to drive growth and success (Teece, 2018[131]). This approach encompasses the formulation of strategies that guide the organization's innovation efforts. It involves identifying opportunities for innovation, setting clear goals, allocating resources, and establishing frameworks for evaluating and prioritizing different innovation projects (Helfat & Peteraf, 2015[132]). Innovation strategic management leverages a deep understanding of market trends, customer needs, technological advancements, and competitive forces to identify areas where innovation can create value. It involves a mix of exploratory and exploitative activities, encompassing both disruptive breakthroughs and incremental improvements (Dodgson et al., 2018[133]).

[130] The book serves as a comprehensive resource for understanding and managing innovation within organizations. It explores the dynamic interplay between technological advancements, changes in market dynamics, and the internal organizational transformations necessary for successful innovation. Tidd, J., Bessant, J., & Pavitt, K. (2019). Managing Innovation: Integrating Technological, Market and Organizational Change. John Wiley & Sons.

[131] The reference "Teece, D. J. (2018). Business Models and Dynamic Capabilities. Long Range Planning, 51(1), 40-49" corresponds to an academic paper authored by David J. Teece and published in the journal "Long Range Planning."
In this paper, David Teece likely discusses the critical relationship between business models and dynamic capabilities within organizations.

[132] The reference "Helfat, C. E., & Peteraf, M. A. (2015). Managerial cognitive capabilities and the micro foundations of dynamic capabilities. Strategic Management Journal, 36(6), 831-850" corresponds to an academic paper authored by Cynthia E. Helfat and Margaret A. Peteraf, published in the "Strategic Management Journal." In this paper, Helfat and Peteraf delve into dynamic capabilities, a key area within strategic management. They explore dynamic capabilities, which refers to an organization's ability to adapt, change, and innovate in response to evolving market conditions and competitive landscapes.

[133] The reference "Dodgson, M., Gann, D., & Salter, A. (2018). The management of technological innovation: Strategy and practice. Oxford University Press" corresponds to an academic book co-authored by Mark Dodgson, David Gann, and Ammon Salter, and Oxford University Press publishes it. This book offers a comprehensive exploration of the management of technological innovation, encompassing both strategic perspectives and practical insights. It delves into organizations' strategies and practices to successfully navigate the complex technological innovation landscape.

Central to this concept is the integration of innovation into the organization's overall strategic planning process. It aligns innovation with the organization's vision, mission, and long-term goals, ensuring that innovation efforts are not isolated but are tightly integrated into the fabric of the organization (Furr & Dyer, 2014[134]). Effective innovation strategic management requires cross-functional collaboration, involving multiple departments and stakeholders. It requires the development of a supportive organizational culture, effective communication channels, and mechanisms for sharing knowledge and insights to foster innovation (Gupta et al., 2019[135]).

Several influential theories have played a pivotal role in shaping and advancing the field of strategic innovation management across history. These theories have acted as guiding beacons, illuminating the complex pathways through which organizations can harness innovation to gain a competitive edge. Their enduring impact continues to resonate within the strategic management landscape, offering insights that transcend temporal constraints. Notable among these theories are Schumpeter's theory of creative destruction, diffusion of innovation theory, open innovation theory ambidexterity theory, resource-based view of innovation, blue ocean strategy, disruptive innovation and dynamic capabilities.

1.7.1 Schumpeter's Theory of Creative Destruction

Schumpeter's theory of creative destruction proposed by the eminent economist Joseph Schumpeter, this theory introduced a transformative concept that innovation serves as the driving force behind economic growth. Schumpeter's seminal work "Capitalism, Socialism and Democracy" (1942) expounds on the idea that economies evolve through waves of innovation-driven changes rather than gradual improvements (Schumpeter, 1942). By accentuating the phenomenon of "creative destruction," Schumpeter highlighted how novel innovations disrupt established industries, rendering existing products, processes, and business models obsolete. This process of creative destruction, while unsettling, paves the way for the emergence of new industries, technologies, and markets.

[134] Furr and Dyer's book, 'The Innovator's Method: Bringing the Lean Start-up into Your Organization,' published by Harvard Business Press, introduces a comprehensive innovation methodology that blends lean start-up principles with established organizations. This practical guide offers step-by-step instructions, real-world case studies, and actionable insights for implementing the innovator's method. It emphasizes customer-centricity, risk mitigation, and the importance of organizational learning in fostering innovation. By providing strategies for change management and highlighting the significance of deeply understanding customer needs, this book equips organizations with a systematic approach to drive innovation while minimizing risks. It is a valuable roadmap for established organizations seeking to remain agile, customer-focused, and competitive in today's dynamic business environment.
Furr, N. R., & Dyer, J. H. (2014). The innovator's method: Bringing the lean start-up into your organization. Harvard Business Press.

[135] Research article authored by A.K. Gupta, K.G. Smith, and C.E. Shalley, published in the Academy of Management Journal, explores the dynamic relationship between exploration and exploitation strategies within organizations. It likely delves into how organizations balance the need for exploration (innovation, risk-taking, and seeking new opportunities) and exploitation (efficiency, refinement, and optimization of existing resources and processes) to achieve sustainable competitive advantages. The article may provide empirical insights, theoretical frameworks, and practical implications for organizations seeking to navigate this critical interplay between exploration and exploitation in their strategic management practices.
Gupta, A. K., Smith, K. G., & Shalley, C. E. (2019). The interplay between exploration and exploitation. Academy of Management Journal, 62(4), 1079-1104.

Schumpeter's theory has profound implications for understanding the dynamics of innovation and economic progress. It underscores the perpetual need for innovation as a bedrock for sustained economic advancement. The theory recognizes that innovation is not a smooth or linear process; it involves radical departures from the norm that can lead to temporary upheaval but result in greater efficiency, productivity, and overall growth in the long run (Fagerberg et al., 2016[136]). Furthermore, Schumpeter's concept resonates with the idea that innovation is not confined to the development of new products or services; it encompasses changes in production methods, organizational structures, and market dynamics. This holistic view of innovation aligns with the modern understanding of innovation as a multidimensional process that encompasses various aspects of an organization's activities (Tidd & Bessant, 2019[137]). In essence, Schumpeter's Theory of Creative Destruction offers a profound understanding of how innovation drives economic evolution. By shedding light on the role of disruptive innovations in shaping economies, this theory underscores the importance of embracing change and innovation to foster continuous economic growth and progress.

1.7.2 Diffusion of Innovations Theory

Diffusion of Innovations Theory the pioneering work of Everett Rogers led to the formulation of the Diffusion of Innovations Theory, which scrutinizes how innovative ideas proliferate within societies and organizations. Rogers' influential book "Diffusion of Innovations" (2003) provides a comprehensive framework for understanding how and why individuals and organizations adopt new ideas, products, or practices (Rogers, 2003[138]). Central to the theory is the notion that the adoption of innovations follows a bell-shaped curve, classifying adopters into distinctive categories based on their

[136] The Oxford Handbook of Innovation" is a comprehensive reference book authored by Jan Fagerberg, David C. Mowery, and Richard R. Nelson, and it was published by Oxford University Press in 2016. This handbook serves as a significant resource in the field of innovation studies. It provides an extensive and multidisciplinary exploration of various aspects of innovation, offering insights into innovation's theory, practices, and impacts across different domains. It likely includes contributions from leading experts and scholars in the field, covering topics such as the economics of innovation, technological advancements, innovation in organizations, and the role of innovation in economic growth and development. The book is likely structured to offer a comprehensive overview of innovation research. It is a valuable reference for academics, researchers, policymakers, and practitioners interested in understanding innovation's complex and multifaceted nature in contemporary society.
Fagerberg, J., Mowery, D. C., & Nelson, R. R. (2016). The Oxford Handbook of Innovation. Oxford University Press."

[137] Managing Innovation: Integrating Technological, Market, and Organizational Change" is a book by John Tidd and John Bessant. It was published by John Wiley & Sons in 2019. This book is a notable resource in innovation management, providing a comprehensive and contemporary perspective on how organizations can effectively manage innovation. It likely covers various aspects of innovation, including technological advancements, market dynamics, and organizational change, emphasizing the interconnectedness of these factors in the innovation process. It is likely designed to offer practical insights, frameworks, and strategies for managing organizational innovation. It is a valuable resource for business leaders, managers, and professionals seeking to foster innovation and stay competitive in today's rapidly evolving business landscape.
Tidd, J., & Bessant, J. (2019). Managing Innovation: Integrating Technological, Market and Organizational Change. John Wiley & Sons.

[138] Diffusion of Innovations" is a seminal book written by Everett M. Rogers, originally published in 1962 and updated in 2003. The book is considered a classic in the field of communication and innovation studies. Rogers presents the Diffusion of Innovations Theory in this work, which explores how new ideas, technologies, products, or practices spread and are adopted within societies, organizations, and communities. The theory provides a comprehensive framework for understanding the diffusion process, including the factors that influence the adoption and acceptance of innovations by different groups of people. Rogers' book has been widely influential in various fields, including marketing, sociology, public health, and communication continues to be a fundamental reference for researchers, practitioners, and policymakers interested in the dynamics of innovation adoption and diffusion.
Rogers, E. M. (2003). Diffusion of Innovations. Free Press.

willingness to embrace novelty. These categories span from innovators, who eagerly embrace new ideas, to laggards, who are hesitant to depart from traditional approaches. The theory identifies five adopter categories—innovators, early adopters, early majority, late majority, and laggards—which collectively reflect the heterogeneous preferences and adoption patterns prevalent in society. Rogers' theory has significant implications for innovation management.

Organizations can leverage this framework to strategically calibrate their innovation strategies based on the dynamics of the adopter categories. By recognizing that different segments of society adopt innovations at varying rates, organizations can tailor their approaches to suit the needs and expectations of each group. This entails crafting targeted communication strategies, addressing specific concerns, and tailoring product features to align with the preferences of various adopter categories. Moreover, the Diffusion of Innovations Theory underscores the importance of interpersonal communication and social networks in the adoption process. Rogers highlights the role of opinion leaders and influencers in diffusing innovations within communities. Organizations can leverage this insight by identifying and engaging key influencers who can drive the adoption of their innovations through their networks. In contemporary contexts, where the pace of technological change is accelerating, the Diffusion of Innovations Theory remains highly relevant. Organizations continue to draw on Rogers' framework to design effective communication campaigns, manage the adoption of new technologies, and ensure that innovations resonate with different segments of the market.

1.7.3 Open Innovation Theory

Henry Chesbrough's ground-breaking concept of Open Innovation challenged traditional views on innovation by advocating for a collaborative and boundary-spanning approach (Chesbrough, 2003[139]). Chesbrough's influential book "Open Innovation: The New Imperative for Creating and Profiting from Technology" (2003) served as a catalyst for rethinking how organizations generate and leverage innovation (Chesbrough, 2003). At the core of Open Innovation Theory is the notion that organizations can no longer rely solely on their internal research and development efforts to drive innovation. Instead, they should embrace a more inclusive model that actively seeks external sources of ideas, technologies, and expertise. Chesbrough's theory posits that organizations can harness the collective intelligence of a broader innovation ecosystem by collaborating with external partners such

[139] Henry Chesbrough's book "Open Innovation: The New Imperative for Creating and Profiting from Technology" (2003) is a seminal work in the field of innovation. In this book, Chesbrough introduces the concept of Open Innovation, which challenges traditional approaches to innovation. He emphasizes the importance of collaboration and boundary-spanning in the innovation process, advocating for organizations to be open to external ideas and partnerships. Chesbrough's ideas have profoundly impacted how businesses and institutions approach innovation, promoting a more inclusive and interconnected approach to generating and harnessing innovative ideas and technologies.
Chesbrough, H. W. (2003). Open Innovation: The New Imperative for Creating and Profiting from Technology. Harvard Business School Press.

as customers, suppliers, research institutions, and even competitors.

The Open Innovation Theory underscores the transformational potential of knowledge flows across organizational boundaries. By engaging with a diverse network of partners, organizations gain access to a broader pool of ideas, insights, and capabilities. This dynamic exchange facilitates the cross-fertilization of ideas, enabling the integration of external knowledge into an organization's innovation processes. Chesbrough's theory has prompted organizations to rethink their innovation strategies, leading to the establishment of open innovation platforms, joint ventures, collaborative research projects, and open-source initiatives. This paradigm shift has transformed the innovation landscape, offering new pathways for creating value and fostering co-creation with external stakeholders. In an era of rapid technological advancement and globalization, Open Innovation Theory remains highly relevant. Organizations recognize that innovation thrives in open and interconnected environments. By embracing external partners as sources of innovation, organizations can leverage a broader spectrum of knowledge and resources, enhancing their ability to respond to market dynamics and seize new opportunities.

1.7.4 Ambidexterity Theory

The Ambidexterity Theory, intricately crafted by Michael L. Tushman and Charles A. O'Reilly III, stands as a guiding principle for organizations aiming to master the delicate balance between exploration and exploitation (Tushman & O'Reilly III, 1996[140]). This theory provides a compelling framework for organizations to navigate the dual challenges of fostering innovation and efficiency simultaneously, ensuring their viability in dynamic and competitive environments. Central to Ambidexterity Theory is the concept of "ambidextrous organizations," which possess the unique ability to manage both disruptive innovation and incremental improvement in parallel. Tushman and O'Reilly III (1996) argue that organizations often fall into the trap of focusing exclusively on one dimension at the expense of the other. Exploration involves venturing into uncharted territories to discover novel opportunities, while exploitation involves optimizing existing processes and resources for efficiency. Ambidextrous organizations effectively allocate resources, attention, and effort to both exploration and exploitation, recognizing that each dimension complements the other. They create a

[140] The article by Tushman and O'Reilly III (1996), titled "Ambidextrous organizations: Managing evolutionary and revolutionary change," explores the concept of ambidextrous organizations and their ability to effectively manage both evolutionary (incremental) and revolutionary (disruptive) changes simultaneously. The authors argue that organizations often struggle to balance these two dimensions of change and propose a framework for addressing this challenge. The article delves into ambidextrous organizations' strategies and practices to foster innovation and efficiency in dynamic and competitive environments. It is a seminal work in organizational management, offering valuable insights into how organizations can adapt and thrive in continuous change.
Tushman, M. L., & O'Reilly III, C. A. (1996). Ambidextrous organizations: Managing evolutionary and revolutionary change. California Management Review, 38(4), 8-30.

culture that encourages risk-taking, experimentation, and the pursuit of innovative breakthroughs while also maintaining the operational excellence required for sustainable growth.

Tushman and O'Reilly III (1996) emphasize that achieving ambidexterity is not a one-size-fits-all approach. The balance between exploration and exploitation can vary based on industry dynamics, organizational capabilities, and strategic objectives. Organizations must carefully tailor their innovation strategies to their specific context while ensuring that both dimensions are addressed in a harmonious manner. This theory's significance extends beyond organizational strategies. It underscores the need for leadership to foster an environment that encourages creativity and embraces calculated risk. Ambidexterity Theory highlights the pivotal role of leaders in shaping organizational structures, processes, and culture to enable seamless transitions between exploration and exploitation modes. In today's rapidly changing business landscape, where disruptive innovations can swiftly reshape industries, Ambidexterity Theory remains highly relevant. Organizations that can master the art of ambidexterity are better equipped to adapt to shifting market dynamics, effectively respond to emerging opportunities and challenges, and ultimately achieve sustainable success.

1.7.5 Resource-Based View (RBV) of Innovation

The Resource-Based View (RBV), championed by scholars including Jay Barney, presents a comprehensive framework for strategic management by emphasizing the pivotal role of an organization's resources and capabilities in attaining competitive advantage (Barney, 1991[141]). This theory offers profound insights into the realm of innovation by highlighting the critical interplay between distinctive resources and innovation outcomes. At the heart of the RBV lies the notion that not all resources are created equal; rather, the uniqueness and rarity of resources contribute to an organization's potential for innovation. Barney (1991) asserts that resources must possess four key attributes—value, rarity, inimitability, and non-substitutability—to truly provide a sustainable competitive edge. This view encourages organizations to identify their core competencies and leverage them strategically to drive innovation. The RBV lens offers a nuanced perspective on innovation by emphasizing the significance of intellectual property, tacit knowledge, and organizational capabilities. These unique assets serve as the foundation for innovative endeavors, enabling organizations to

[141] Barney's article, "Firm Resources and Sustained Competitive Advantage," published in the Journal of Management in 1991, is a seminal work in strategic management. This paper introduces and elaborates on the Resource-Based View (RBV) theory, which emphasizes the critical role of an organization's internal resources and capabilities in achieving and maintaining a competitive advantage. In this article, Barney argues that not all resources held by firms are of equal value and that possessing unique, valuable, and rare resources ultimately leads to sustained competitive advantages. He delves into the characteristics that make resources valuable and discusses how they can contribute to a firm's innovative capabilities and overall success in a dynamic business environment. Barney's work has had a lasting impact on the field of strategic management, shaping how scholars and practitioners think about the role of resources and capabilities in achieving and maintaining competitive edges in various industries.
Barney, J. B. (1991). Firm Resources and Sustained Competitive Advantage. Journal of Management, 17(1), 99-120.

develop groundbreaking products, services, and processes that set them apart in the market. By focusing on resources that are not easily replicable by competitors, organizations can create a formidable barrier to entry and secure a position of competitive advantage.

Moreover, the RBV provides a strategic roadmap for innovation management. Organizations can systematically assess their resource portfolio, identifying areas where investment and development can lead to innovation success. This approach encourages organizations to align their innovation strategies with their distinct resources and capabilities, optimizing their potential for achieving innovation-driven growth. In an era of rapid technological advancements and dynamic market shifts, the RBV's emphasis on unique and valuable resources as catalysts for innovation is highly relevant. As organizations strive to differentiate themselves in crowded markets, the RBV offers a robust framework for capitalizing on internal strengths and developing innovation strategies that resonate with their inherent capabilities.

1.7.6 Blue Ocean Strategy

The pioneering work of W. Chan Kim and Renée Mauborgne gave birth to the transformative concept of the Blue Ocean Strategy, offering a novel approach to innovation and strategic management (Kim & Mauborgne, 2005[142]). This theory has ignited a paradigm shift by urging organizations to eschew conventional competition-driven approaches and instead chart new territories of uncontested market spaces—commonly referred to as "blue oceans." At the core of the Blue Ocean Strategy is the belief that organizations can break free from the constraints of cutthroat competition by creating value propositions that transcend existing market boundaries. Kim and Mauborgne (2005) argue that organizations should seek opportunities to innovate and differentiate in areas where competition is minimal or non-existent. This strategic departure from traditional "red ocean" markets—characterized by intense rivalry—enables organizations to tap into uncharted waters where demand is untapped and competition is irrelevant. The Blue Ocean Strategy encourages organizations to identify and create unique value factors that resonate with customers' unmet needs. By crafting innovation-driven value propositions that resonate with these unarticulated demands, organizations can attract new segments of customers who are drawn to the distinctiveness of the offering. This approach enables organizations

[142] Kim and Mauborgne's "Blue Ocean Strategy: How to Create Uncontested Market Space and Make Competition Irrelevant" (2005) is a seminal work in strategic management and innovation. The authors introduce the concept of the "blue ocean," which signifies untapped and uncontested market spaces characterized by innovation and value creation. They argue that instead of competing in overcrowded "red oceans" where firms fight for market share, organizations should seek opportunities in these uncharted blue oceans, where they can create new demand and render competition irrelevant. The book provides a framework and practical tools for businesses to identify, pursue, and succeed in blue ocean markets, emphasizing innovation as a key driver. Kim and Mauborgne's work has profoundly influenced business strategy, challenged conventional thinking and encouraged companies to explore innovative approaches to market creation and value innovation.
Kim, W. C., & Mauborgne, R. (2005). Blue Ocean Strategy: How to Create Uncontested Market Space and Make Competition Irrelevant. Harvard Business Review Press.

to establish a strong foothold in blue oceans, where they are well-positioned to reap first-mover advantages and establish their dominance.

Furthermore, the Blue Ocean Strategy framework guides organizations in the systematic exploration of untapped market spaces. Through a structured process, organizations can identify areas ripe for innovation and differentiation, offering an antidote to market saturation and commoditization. This approach promotes a mindset of continuous value creation and customer-centricity, compelling organizations to remain attuned to evolving customer needs and preferences. In a dynamic and rapidly evolving business landscape, the Blue Ocean Strategy remains profoundly relevant. As markets become increasingly saturated, organizations recognize the need to transcend the confines of traditional competition and forge new pathways of innovation. By adopting the principles of the Blue Ocean Strategy, organizations can discover unexplored avenues for growth, differentiation, and sustainable success.

1.7.7 Disruptive Innovation Theory

The seminal work of Clayton Christensen introduced the revolutionary concept of Disruptive Innovation Theory, which has reshaped the landscape of strategic management and innovation (Christensen, 1997[143]). This theory delves into the dynamics of innovation within industries, shedding light on how new entrants with ground-breaking solutions can reshape market structures and displace incumbents. At the core of the Disruptive Innovation Theory is the recognition that innovations are not uniform in their impact on industries. Christensen (1997) distinguishes between sustaining innovations that enhance existing products or services and disruptive innovations—novel solutions that often start in niche markets and later gain momentum to disrupt established players. This theory emphasizes that established companies are often well-equipped to address sustaining innovations but tend to overlook disruptive innovations that emerge from seemingly insignificant origins.

The Disruptive Innovation Theory offers a framework for understanding the trajectories of innovation and their effects on industry incumbents. Christensen's work highlights that disruptive innovation initially target underserved or non-consumers, gradually improving their performance to encroach on existing markets. This gradual encroachment leads to a shift in market dynamics,

[143] Clayton M. Christensen's influential book, "The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail" (1997), is a seminal work that has significantly impacted strategic management and innovation. This book explores the concept of disruptive innovation, delving into the dynamics of innovation within industries. Christensen's central thesis revolves around the idea that innovations do not uniformly affect industries and that new entrants with groundbreaking solutions can reshape market structures and displace established incumbents. The book identifies the challenges well-established companies face when dealing with disruptive innovations. It offers insights into how organizations can navigate these challenges to remain competitive and innovative in a rapidly changing business landscape.
Christensen, C. M. (1997). The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail. Harvard Business Review Press.

ultimately displacing incumbents who struggle to adapt to the new wave of innovation. Organizations often underestimate the potential impact of disruptive innovations due to their initial small scale and seemingly lower performance compared to existing solutions. However, as these innovations improve and gain a foothold, they can rapidly erode the market share of established players. This theory thus serves as a wake-up call to established companies to embrace disruptive innovations and stay ahead of the curve. In today's hyper-competitive and rapidly evolving business landscape, the Disruptive Innovation Theory remains highly relevant. Organizations must not only focus on incremental improvements but also keep a vigilant eye on disruptive forces that could reshape their industries. By understanding the patterns of disruptive innovation and proactively responding to them, organizations can position themselves for continued relevance and success.

1.7.8 Dynamic Capabilities Theory

The Dynamic Capabilities Theory, crafted by David J. Teece and his collaborators, stands as a pivotal framework that illuminates an organization's agility to thrive in dynamic and turbulent environments (Teece et al., 1997[144]). At its core, this theory underscores an organization's ability to sense changes in the market landscape, seize emerging opportunities, and seamlessly reconfigure its resources to adapt and stay competitive. Teece et al. (1997) propose that dynamic capabilities are essential for organizations to not only respond to existing market demands but also to proactively shape their environments. This theory asserts that organizations should possess the capacity to identify shifts, disruptions, and emerging trends before they become mainstream, allowing them to position themselves advantageously.

A crucial aspect of the Dynamic Capabilities Theory is its emphasis on resource reconfiguration. Organizations must be capable of aligning their resources, both tangible and intangible, to swiftly adapt to changing circumstances. This entails reallocating resources, retraining talent, and restructuring processes to effectively address new challenges or seize untapped opportunities. The Dynamic Capabilities Theory finds resonance in today's business landscape, characterized by rapid technological advancements, changing consumer preferences, and evolving competitive forces. Organizations that possess the ability to dynamically adjust their strategies, business models, and resource allocations can navigate uncertainties with resilience. The interplay of

[144] Teece, D. J., Pisano, G., & Shuen, A. (1997) in their influential article "Dynamic Capabilities and Strategic Management," presented a fundamental framework for understanding how organizations can effectively adapt and innovate in dynamic and competitive environments. The Dynamic Capabilities Theory they proposed emphasizes an organization's ability to sense changes in the market, seize new opportunities, and efficiently reconfigure its resources to maintain competitiveness. This theory has become a cornerstone in strategic management, offering valuable insights into how organizations can navigate and excel in complex and ever-changing business landscapes.
Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. Strategic Management Journal, 18(7), 509-533.

these diverse theories—ranging from Schumpeter's focus on innovation's economic role to the strategic frameworks of disruption, ambidexterity, resource-based view, and more—forms a mosaic of insights that guide organizations in their pursuit of strategic innovation management. By synthesizing these theories, organizations can craft nuanced strategies that harness innovation's power to propel them ahead in a dynamic and fiercely competitive global arena.

Following the elucidation of knowledge pertaining to innovation strategy theories, we will delve deeper into the specific theories to be employed in this study. Notably, we will explore the concepts of ambidextrous innovations and disruptive innovation, as they constitute the primary approaches that underpin our research.

1.8 The Concept of Organizational Ambidexterity

Organizational ambidexterity is a strategic concept that involves the simultaneous pursuit of exploration and exploitation within an organization (O'Reilly and Tushman, 2013[145]). It refers to the ability of a firm to balance its efforts in exploring new opportunities and technologies while exploiting existing resources and capabilities (Gupta et al., 2021[146]). This theoretical framework has gained significant attention in management and innovation due to its potential to enhance organizational performance and foster long-term success (Liu et al., 2020[147]). Organizational ambidexterity encompasses two main dimensions: exploration and exploitation. Exploration involves searching for new knowledge, identifying emerging opportunities, and experimenting with innovative ideas

[145] The article "Organizational Ambidexterity: Past, present, and Future" by O'Reilly III and Tushman (2013), published in the Academy of Management Perspectives, delves into organizational ambidexterity. The authors explore this strategic concept's historical development, current understanding, and future implications. Organizational ambidexterity refers to the ability of a firm to effectively balance the seemingly contradictory demands of exploration and exploitation in innovation and operations.
The article provides a comprehensive overview of the concept, tracing its evolution from early discussions to contemporary interpretations. O'Reilly III and Tushman discuss how firms have grappled with the challenge of simultaneously exploring new opportunities and technologies while exploiting existing resources and capabilities. The authors emphasize the importance of striking a balance between these two dimensions for achieving long-term success and competitive advantage.
O'Reilly III, C. A., & Tushman, M. L. (2013). Organizational ambidexterity: Past, present, and future. Academy of Management Perspectives, 27(4), 324-338.

[146] The chapter titled "The Interplay Between Exploration and Exploitation," authored by Gupta, Smith, and Shalley (2021) is part of "The Oxford Handbook of Multilevel Organizational Dynamics." This chapter comprehensively explores the dynamic relationship between exploration and exploitation within organizations, a concept known as organizational ambidexterity.
The authors delve into the intricate interplay between these two seemingly contrasting strategies: exploration involves seeking new opportunities, experimenting with novel ideas, and adapting to changes in the external environment, while exploitation focuses on optimizing existing resources, refining processes, and maximizing efficiency.
Gupta, A. K., Smith, K. G., & Shalley, C. E. (2021). The Interplay Between Exploration and Exploitation. The Oxford Handbook of Multilevel Organizational Dynamics (pp. 299-314). Oxford University Press.

[147] The study titled "Achieving Ambidextrous Innovation through the Implementation of Open Innovation" by Liu, Li, and Xie (2020) is featured in the "European Journal of Innovation Management." This research focuses on ambidextrous innovation, which involves simultaneously pursuing both exploratory and exploitative innovation activities within organizations. The authors specifically investigate how open innovation practices contribute to ambidextrous innovation, allowing organizations to balance exploring new opportunities with exploiting existing resources.
Liu, Y., Li, Y., & Xie, X. (2020). Achieving ambidextrous innovation through the implementation of open innovation. European Journal of Innovation Management.

(Birkinshaw and Gupta, 2021[148]). Exploitation, on the other hand, focuses on leveraging existing resources, refining current processes, and maximizing efficiency and effectiveness (Raisch et al., 2020[149]). Both dimensions are crucial for achieving sustainable competitive advantage and adaptability in dynamic environments (Gupta et al., 2021). Organizational ambidexterity plays a vital role in enhancing firm performance and fostering innovation. Research by **(**Cannaerts et al.**,** 2020)**[150]** highlights that it allows organizations to tap into newer knowledge and innovative schemes, creating viability and long-term survival prospects. **(**Umans et al.**,** 2020**)[151]** emphasize that organizational ambidexterity enables firms to leverage market resources, opportunities, and advantages, leading to future success and the ability to capitalize on emerging chances. Furthermore, Agostini et al. **(**2016)[152] suggest that it facilitates the differentiation of exploratory units from traditional ones, enabling the development of unique cultures, processes, and strategies.

Exploration is a crucial aspect of organizational ambidexterity that enables firms to identify new market opportunities and understand consumer needs. O'Reilly and Tushman (2018)[153] and

[148] The article titled "Innovating in the Enterprise: The Intersection of Information, Inspiration, and Expertise," authored by Birkinshaw and Gupta (2021), is featured in the "Academy of Management Perspectives." This article comprehensively explores the factors contributing to innovation within enterprises, focusing on the critical intersection of information, inspiration, and expertise.
Birkinshaw, J., & Gupta, K. (2021). Innovating in the enterprise: The intersection of information, inspiration, and expertise. Academy of Management Perspectives, 35(1), 5-14

[149] The study titled "Organizational Ambidexterity: Balancing Exploitation and Exploration for Sustained Performance" by Raisch, Birkinshaw, Probst, and Tushman (2020) is featured in the "Organization Science" journal. This research focuses on the strategic concept of organizational ambidexterity, which involves simultaneously pursuing exploration and exploitation within an organization.
Raisch, S., Birkinshaw, J., Probst, G., & Tushman, M. L. (2020). Organizational ambidexterity: Balancing exploitation and exploration for sustained performance. Organization Science, 31(4), 1019-1039.

[150] The article titled "From Innovation to Venture Launch: Resource Orchestration for Entrepreneur Success" by Cannaerts and Venkataraman (2020) is featured in the "Academy of Management Journal." This research investigates the critical transition from innovation to the successful launch of a new venture, mainly focusing on resource orchestration's role in entrepreneurship.
Cannaerts, N., & Venkataraman, S. (2020). From innovation to venture launch: Resource orchestration for entrepreneur success. Academy of Management Journal, 63(1), 73-96.

[151] The article titled "Balancing Invention and Innovation: Evidence from the Patent Record" by Umans, Murmann, and Lenox (2020) is featured in the journal "Organization Science." This research explores the intricate relationship between invention and innovation, specifically focusing on the context of patent records as a valuable source of insight.
The study addresses the dual challenges organizations face: generating novel inventions and effectively translating those inventions into innovative outcomes that contribute to the organization's growth and competitive advantage. The authors emphasize that while invention involves the creation of new ideas and technologies, innovation encompasses successfully implementing and commercializing these ideas.
Umans, T., Murmann, J. P., & Lenox, M. J. (2020). Balancing Invention and Innovation: Evidence from the patent record. Organization Science, 31(5), 1115-1137.

[152] The article titled "Ambidexterity as a Dynamic Capability: Resolving the Innovator's Dilemma in the Technological Leadership of R&D Organizations" authored by Agostini, Nosella, and Filippini (2016) is featured in the journal "R&D Management." This study addresses the challenge of balancing exploration and exploitation within research and development (R&D) organizations to address the "innovator's dilemma effectively." The authors focus on "ambidexterity" as a dynamic capability that enables R&D organizations to engage in exploratory and exploitative activities simultaneously. The study's central aim is to understand how R&D organizations navigate the inherent tension between these two activities, allowing them to innovate while leveraging existing resources and capabilities.
Agostini, L., Nosella, A., & Filippini, R. (2016). Ambidexterity as a dynamic capability: Resolving the innovator's dilemma in the technological leadership of R&D organizations. R&D Management, 46(S1), 34-47.

[153] The article titled "Ambidexterity as a Dynamic Capability: Resolving the Innovator's Dilemma" by O'Reilly III and Tushman (2018) delves into the concept of ambidexterity as a strategic approach for addressing the challenges posed by the "innovator's dilemma." The innovator's dilemma refers to the tension organizations face in balancing the need to explore new opportunities while exploiting existing capabilities for efficiency.
O'Reilly III, C. A., & Tushman, M. L. (2018). Ambidexterity as a dynamic capability: Resolving the innovator's dilemma. Research in Organizational Behavior, 38, 37-54.

Papachroni et al. (2016)[154] highlight the role of exploration in creating products and services that meet market demands. (Probst et al., 2016)[155] emphasize the importance of exploration in acquiring information on underdeveloped skills, fostering creativity, and enabling collaboration with external entities. Exploration is a vital component of organizational ambidexterity that focuses on discovering and creating new opportunities and knowledge. It involves activities such as scanning the external environment, conducting research and development, and engaging in experimental initiatives to identify and exploit emerging trends and technologies (O'Reilly and Tushman, 2019).

In recent literature, scholars have emphasized the significance of exploration in fostering innovation and organizational adaptability. For instance, Birkinshaw and Gupta (2019)[156] argue that exploration enables organizations to sense market changes, identify potential disruptions, and develop novel solutions to meet evolving customer needs. By actively exploring the external environment, organizations can proactively respond to industry shifts and gain a competitive edge. Furthermore, scholars highlight the role of exploration in knowledge creation and learning. March (2010)[157] suggests that exploration allows organizations to accumulate new knowledge and insights, fueling innovation and enhancing problem-solving capabilities. Through exploration, organizations can engage in experimentation, pilot new initiatives, and learn from both successes and failures (Garud et al., 2019)[158]. This iterative learning process enables organizations to adapt their strategies and refine their

[154] The article titled "Strategizing and Organizing in Pluralistic Contexts: Exploring the Interplay of Different Modes of Strategizing" by Papachroni, Heracleous, and Paroutis (2016) investigates the dynamics of strategizing and organizing within complex and diverse environments.
The authors focus on pluralistic contexts where organizations interact with various stakeholders, each with distinct interests, perspectives, and expectations. They delve into the interplay of different modes of strategizing that emerge in such environments and how these modes influence organizational outcomes.
Papachroni, A., Heracleous, L., & Paroutis, S. (2016). Strategizing and organizing in pluralistic contexts: Exploring the interplay of different modes of strategizing. Long Range Planning, 49(6), 645-661.

[155] The study titled "The Influence of Innovation Orientation on Ambidextrous Exploration and Exploitation: Empirical Evidence from Small and Medium-Sized Enterprises" by Probst, Rauch, and Romhardt (2016) investigates the relationship between innovation orientation and ambidextrous strategies within the context of small and medium-sized enterprises (SMEs).
Probst, G., Rauch, A., & Romhardt, K. (2016). The influence of innovation orientation on ambidextrous exploration and exploitation: Empirical evidence from small and medium-sized enterprises. Creativity and Innovation Management, 25(3), 381-394.

[156] The article titled "Ambidexterity as a Dynamic Capability in the Globalization of the Multinational Business Enterprise (MBE): Case Studies of AB Volvo and IKEA" by Birkinshaw and Gupta (2019) explores the concept of ambidexterity within the context of multinational business enterprises (MBEs) using case studies of two prominent companies, AB Volvo and IKEA.
The authors focus on the notion of ambidexterity, which involves an organization's ability to effectively balance both exploration and exploitation strategies. Exploration consists in seeking new opportunities, experimenting with innovative ideas, and learning from novel experiences, while exploitation entails optimizing existing resources, refining processes, and maximizing efficiency.
Birkinshaw, J., & Gupta, K. (2019). Ambidexterity as a dynamic capability in the globalization of the multinational business enterprise (MBE): Case studies of AB Volvo and IKEA. Global Strategy Journal, 9(2), 234-254.

[157] In the article "Exploration and Exploitation in Organizational Learning" by James G. March (2010), the author delves into the concept of exploration and exploitation as fundamental components of organizational learning. March's work focuses on how organizations balance the two seemingly opposing activities to enhance their overall effectiveness and adaptability.
The article starts by discussing the inherent tension between exploration and exploitation. Exploration involves seeking new knowledge, experimenting with novel ideas, and venturing into uncharted territories. On the other hand, exploitation revolves around refining existing processes, leveraging current knowledge and resources, and optimizing established routines for efficiency.
March, J. G. (2010). Exploration and exploitation in organizational learning. Organization Science, 2(1), 71-87.

[158] The study focuses on how boundaries, which demarcate the limits of knowledge, expertise, and social connections, influence organizational innovation processes. The authors argue that boundaries can both enable and constrain innovation. Boundaries enable innovation by defining and

innovation practices.

Recent research also emphasizes the importance of fostering a culture and organizational climate that supports exploration. Gupta and colleagues (2020) [159]argue that organizations need to cultivate a mindset that encourages curiosity, risk-taking, and openness to new ideas. They emphasize the role of leadership in promoting a supportive environment that values and rewards exploration. Moreover, scholars have examined various strategies and mechanisms that facilitate exploration within organizations. For instance, collaborative partnerships and alliances with external stakeholders, such as customers, suppliers, and research institutions, can enhance access to new knowledge and opportunities (Chesbrough, 2019)[160]. Digital technologies and data analytics are also highlighted as enablers of exploration, as they provide organizations with real-time market insights and facilitate rapid experimentation (Wamba et al., 2021)[161].

On the other hand, exploitation involves the continuous improvement and refinement of existing products, services, and routines. Tushman et al. (2017)[162] note that exploitation allows firms

safeguarding different groups or individuals' distinct expertise and knowledge, which is essential for specialized problem-solving and creativity. However, boundaries can also constrain innovation by limiting the flow of diverse perspectives and inhibiting the exchange of ideas.
Garud, R., Gehman, J., & Karunakaran, A. (2019). Boundaries, breaches, and bridges: The case of Climategate. Strategic Management Journal, 40(3), 383-403.

[159] In the book chapter titled "The Interplay Between Exploration and Exploitation" by Anil K. Gupta, Kevin G. Smith, and Christina E. Shalley (2020), included in "The Oxford Handbook of Multilevel Organizational Dynamics," the authors delve into the dynamic relationship between exploration and exploitation within organizations, emphasizing its significance for organizational performance and adaptability.
Gupta, A. K., Smith, K. G., & Shalley, C. E. (2020). The interplay between exploration and exploitation. In The Oxford Handbook of Multilevel Organizational Dynamics (pp. 299-314). Oxford University Press.

[160] In the article "To Recover Faster from Covid-19, Open Up: Managerial Implications from an Open Innovation Perspective" by Henry Chesbrough (2019), published in the Industrial Marketing Management journal, the author explores the managerial implications of adopting an open innovation perspective to navigate the challenges posed by the COVID-19 pandemic.
Chesbrough begins by emphasizing the unprecedented disruptions caused by the pandemic and the need for businesses to adapt quickly to the changing environment. He highlights the role of open innovation in this context, which involves collaborating with external partners, including customers, suppliers, research institutions, and startups, to co-create value and develop innovative initiatives.
Chesbrough, H. (2019). To recover faster from Covid-19, open up: Managerial implications from an open innovation perspective. Industrial Marketing Management, 88, 410-413.

[161] The article "How 'Big Data' Can Make Big Impact: Findings from a Systematic Review and a Longitudinal Case Study" by Samuel Fosso Wamba and colleagues, published in the journal Technological Forecasting and Social Change (2021), presents a comprehensive exploration of the potential of big data and its impact on organizations through a systematic review and a longitudinal case study.
The authors start by addressing the increasing significance of big data in contemporary business environments. They emphasize that big data, characterized by its large volume, variety, and velocity, has the potential to offer valuable insights for decision-making, innovation, and operational efficiency across various industries.
Wamba, S. F., Akter, S., Edwards, A., Chopin, G., Gnanzou, D., & Kamdjoug, J. R. (2021). How 'big data' can make big impact: Findings from a systematic review and a longitudinal case study. Technological Forecasting and Social Change, 163, 120456.

[162] The article titled "The Ambidextrous CEO," authored by Michael L. Tushman, Wendy K. Smith, Andrew Binns, and Lingling Tang, and published in Harvard Business Review (2017), delves into the critical role of chief executive officers (CEOs) in driving organizational ambidexterity.
The authors highlight that ambidextrous CEOs can effectively manage two seemingly contradictory aspects of innovation: exploration and exploitation. Exploration involves pursuing novel opportunities and disruptive innovations, while exploitation optimizes existing operations and incremental improvements.
Tushman, M. L., Smith, W. K., Binns, A., & Tang, L. (2017). The ambidextrous CEO. Harvard Business Review, 95(6), 88-95.

to respond to market needs by making incremental change s. Mom et al. (2015)[163] highlights the significance of insightful knowledge creation in specific domains to achieve efficiency and effectiveness. Plimmer et al. (2017)[164] emphasizes the role of exploitation in summarizing and institutionalizing efficiency in chosen domains, leading to productivity enhancement and minimization of failure. Exploitation is a key dimension of organizational ambidexterity that focuses on leveraging existing resources, capabilities, and knowledge to maximize efficiency, optimize current operations, and extract value from established practices (Raisch et al., 2019)[165]. It involves refining processes, improving productivity, and enhancing the performance of existing products or services. Recent research highlights the importance of exploitation in organizational ambidexterity for sustaining competitive advantage and achieving organizational effectiveness. One aspect of exploitation is the continuous improvement of existing products, services, and operations. Researchers emphasize the role of innovation in operational processes, such as lean manufacturing and Six Sigma, to streamline operations, reduce waste, and improve quality (Sushil and Rahman, 2018)[166]. Exploitation strategies also involve optimizing supply chain management, cost control, and efficiency enhancement (Vermillion et al., 2020)[167].

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[163] The research paper titled "Reverse Engineering: The Effect of the Sequencing of Knowledge Transfer and Recipient Firm Capabilities on Product Innovation," authored by T. J. Mom, Geert Duysters, and John Hagedoorn, and published in Strategic Management Journal (2015), examines the interplay between knowledge transfer, recipient firm capabilities, and product innovation.
The study focuses on the process of reverse engineering, where firms acquire knowledge from external sources, such as suppliers, competitors, or partners, to enhance their own product innovation efforts.
Mom, T. J., Duysters, G., & Hagedoorn, J. (2015). Reverse engineering: The effect of the sequencing of knowledge transfer and recipient firm capabilities on product innovation. Strategic Management Journal, 36(11), 1597-1616.

[164] The article titled "Exploiting and Exploring an Array of Qualitative Data to Provide Deeper Insights," authored by Gillian Plimmer, Kate Kearins, and Snežana Urošević, and published in the Qualitative Research Journal (2017), focuses on the utilization of various qualitative data sources to gain a more comprehensive understanding of research subjects.
The authors emphasize the value of exploiting and exploring qualitative data to achieve deeper insights into the phenomena under investigation. Exploitation refers to the in-depth analysis of a specific dataset, diving into the nuances and details that may not be apparent at first glance. On the other hand, exploration involves examining multiple datasets or sources to identify patterns, connections, and cross-referencing that provide a broader perspective on the research topic.
Plimmer, G., Kearins, K., & Urošević, S. (2017). Exploiting and exploring an array of qualitative data to provide deeper insights. Qualitative Research Journal, 17(2), 112-121.

[165] The article titled "The Paradox of Openness Revisited: Collaborative Innovation and Patenting by UK SMEs," authored by Sebastian Raisch, Julian Birkinshaw, and Gilbert Probst, and published in Research Policy (2019), revisits the concept of the paradox of openness in the context of collaborative innovation and patenting activities among small and medium-sized enterprises (SMEs) in the United Kingdom.
The authors delve into the tension between open collaboration, which involves sharing knowledge and resources with external partners, and the need to protect intellectual property through patenting. This tension, known as the paradox of openness, arises because SMEs may hesitate to share their innovations openly due to concerns about losing their competitive advantage.
Raisch, S., Birkinshaw, J., & Probst, G. (2019). The paradox of openness revisited: Collaborative innovation and patenting by UK SMEs. Research Policy, 48(9), 103794.

[166] The article titled "Integration of Lean, Six Sigma and Sustainability: A Critical Review," authored by Sushil and Zillur Rahman, and published in the International Journal of Lean Six Sigma (2018), provides a comprehensive analysis of the integration of Lean, Six Sigma, and sustainability principles within organizations. The authors address the growing need for organizations to achieve operational excellence through Lean and Six Sigma methodologies and incorporate sustainability considerations into their processes. The article examines how these three approaches—Lean, Six Sigma, and sustainability—can be effectively integrated to drive continuous improvement, enhance efficiency, reduce waste, and promote environmentally and socially responsible practices.
Sushil, & Rahman, Z. (2018). Integration of lean, Six Sigma and sustainability: A critical review. International Journal of Lean Six Sigma, 9(4), 393-422.

[167] The research paper titled "The Impact of IT Capabilities on Firm Innovation Performance: The Mediating Roles of Innovative Culture and Exploitation Capabilities," authored by Vermillion, Wang, Zhu, and Neshat, and published in Information & Management (2020), explores the relationship between information technology (IT) capabilities, innovative culture, exploitation capabilities, and firm innovation performance.

Moreover, recent literature highlights the role of knowledge management and organizational learning in exploitation. Organizations can leverage their internal knowledge repositories, best practices, and tacit knowledge to enhance their performance (Sun et al., 2019)[168]. By effectively utilizing and integrating existing knowledge, organizations can improve operational effectiveness, develop incremental innovations, and achieve process efficiencies (Weiblen et al., 2020)[169]. Scholars emphasize the importance of organizational routines and structures in enabling exploitation. Organizations must establish mechanisms for efficient resource allocation, coordination, and control to maximize the benefits of existing capabilities (Moldoveanu and Bauer, 2020)[170].

Organizational ambidexterity is a powerful concept that enables firms to balance exploration and exploitation for sustained innovation and competitive advantage. By effectively managing these dual strategies, organizations can adapt to changing market dynamics, identify emerging opportunities, and optimize their existing resources. The cited studies by various scholars provide insights into the role and implications of organizational ambidexterity, highlighting its significance in achieving organizational effectiveness and long-term success.

1.8.1 Research Studies on Ambidextrous Innovation

Innovation management is a dynamic and ever-evolving field that continually adapts to the shifting landscapes of industry, technology, and societal needs. As organizations seek to maintain their competitive edge and address the challenges of an increasingly complex global environment, understanding the drivers, strategies, and outcomes of innovation becomes paramount. A

The study delves into how an organization's IT capabilities influence its ability to innovate and achieve better innovation performance. It investigates the mediating roles of innovative culture and exploitation capabilities in this relationship.
Vermillion, J. P., Wang, Y., Zhu, X., & Neshat, N. (2020). The impact of IT capabilities on firm innovation performance: The mediating roles of innovative culture and exploitation capabilities. Information & Management, 57(1), 103154.

[168] The research paper titled "Leveraging Knowledge Stock for Firm Innovation," authored by Sun, Zhang, Fu, and Huang, and published in the Journal of Business Research (2019), focuses on the role of knowledge stock in driving innovation within organizations.
The study centers on knowledge stock, which refers to the accumulated knowledge, expertise, and intellectual assets an organization possesses. The authors argue that an organization's knowledge stock is pivotal in shaping its ability to innovate effectively.
Sun, L., Zhang, Z., Fu, H., & Huang, L. (2019). Leveraging knowledge stock for firm innovation. Journal of Business Research, 94, 113-125.

[169] The article "The Role of Leveraging Resources and Open Innovation in Dynamic Capabilities," authored by Weiblen and Chesbrough and published in Long Range Planning in 2020, investigates the relationship between leveraging resources, open innovation, and dynamic capabilities within organizations. The central focus of the study is on the concept of dynamic capabilities, which refers to an organization's ability to adapt and evolve its resources, processes, and strategies in response to changing environments. Dynamic capabilities are crucial for organizations to remain competitive in rapidly changing markets.
Weiblen, T., & Chesbrough, H. (2020). The role of leveraging resources and open innovation in dynamic capabilities. Long Range Planning, 53(2), 101926.

[170] The paper titled "Isomorphism and Exploitation: A Study of Forms and Organizations and Organizational Knowledge Generation," authored by Moldoveanu and Bauer and published in Organization Studies in 2020, delves into the relationship between organizational isomorphism and the process of organizational knowledge generation and exploitation. The core focus of the study lies in understanding how different forms of isomorphism, which refers to the imitation or similarity in organizational structures, practices, and behaviors, impact the way organizations generate and utilize knowledge.
Moldoveanu, M. C., & Bauer, M. W. (2020). Isomorphism and exploitation: A study of forms, organizations, and organizational knowledge generation. Organization Studies, 41(9), 1313-1336.

comprehensive review of the literature provides a valuable lens through which to examine the state of ambidexterity innovation approach research, its focal points, and areas that warrant further exploration. The study that been adopted from Saleh, Durugbo, and Almahamid (2023) conducted a systematic review and presented a multi-level model to explore the manageability of innovation ambidexterity undertakes the task of analyzing a broad spectrum of scholarly articles that span various facets of ambidexterity innovation management. Our objective is to gain insights into the diverse range of topics and sectors that have been explored in the existing body of work. Through this review, this section aims to identify patterns, trends, and gaps in the research landscape, shedding light on both the well-trodden paths and the uncharted territories within ambidexterity innovation management.

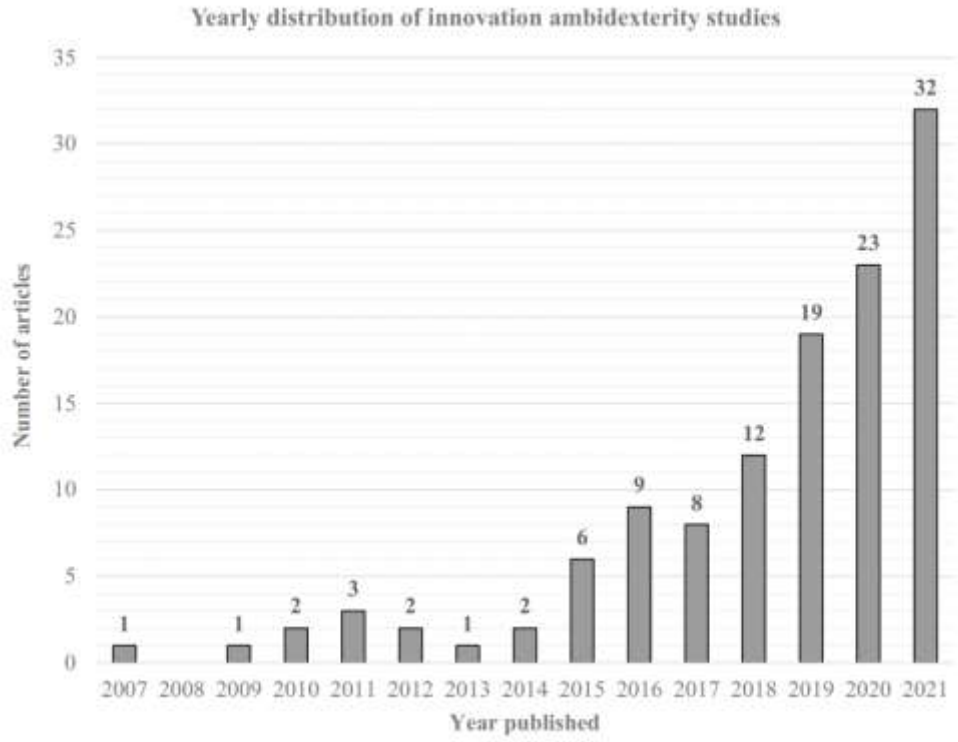

Figure 1.8.1.1 Yearly distribution ambidexterity studies
Source Adapted from Saleh, Durugbo, and Almahamid (2023).

The review is based on an extensive analysis of 121 articles published between 2007 and 2021. The yearly distribution of these articles demonstrates a growing trend and heightened interest in the topic of Innovation Ambidexterity, particularly over the past seven years. This surge in interest is indicative of the increasing recognition of Innovation Ambidexterity 's significance in the field of innovation and organizational studies. Researchers and practitioners alike have increasingly turned their attention to understanding and harnessing the potential of ambidextrous innovation in recent years, as demonstrated by the following yearly distribution:

- 2007-2014: During this period, there was a steady but relatively modest number of articles,

indicating a foundational interest in the concept of Innovation Ambidexterity.

- 2015-2018: The interest in Innovation Ambidexterity noticeably increased during these years, with a growing number of publications, reflecting a more profound exploration of Innovation Ambidexterity -related themes and concepts.
- 2019-2021: In the last three years, there has been a significant surge in publications, with a substantial number of articles dedicated to Innovation Ambidexterity. This indicates a heightened focus on Innovation Ambidexterity as a critical determinant in managing innovation.

This growing trend and interest in Innovation Ambidexterity, particularly in the past seven years, underscore the evolving landscape of ambidextrous innovation and its emerging role as a focal area for research and practical application. As organizations continue to grapple with the complexities of balancing exploration and exploitation in their innovation endeavors, the study of Innovation Ambidexterity has gained prominence as a vital guidepost in achieving innovation excellence.

Industry Sectors in Ambidexterity Studies

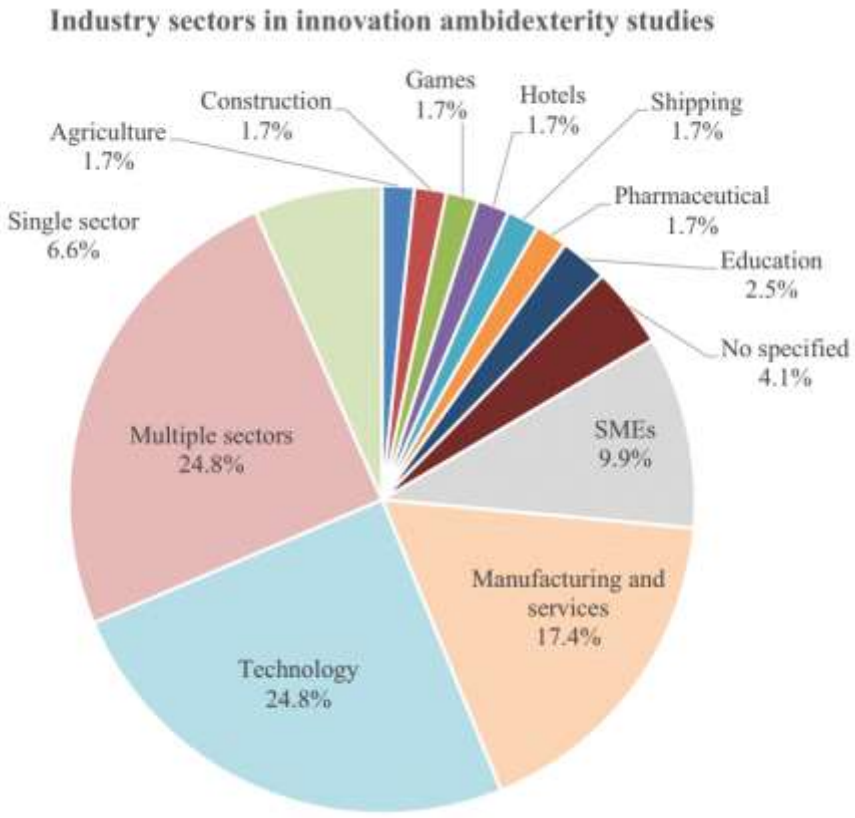

Figure 1.8.1.2 Industry sectors in innovation ambidexterity studies
Source Adapted from Saleh, Durugbo, and Almahamid (2023).

The results of the analysis shed light on the diverse range of industry sectors explored in the reviewed articles. Notably, the technology industry emerges as the most extensively researched single sector, accounting for 24.8% of the articles (29 out of 121). Following closely behind, manufacturing and service firms are also prominently featured as sources of data, collectively comprising 17.4% of the articles (21 out of 121). Within the landscape of these studies, it's worth mentioning that 9.9% (12 out of 121) of the articles are dedicated to investigating innovation management within the context of small and medium enterprises (SMEs). Additionally, 2.5% of the studies (3 out of 121) focus on educational institutions, offering unique insights into innovation dynamics within academia.

Beyond these primary sectors, the review encompasses a spectrum of industries, each contributing to the comprehensive understanding of innovation management. Specifically, agricultural, construction, gaming, hotels, shipping, and pharmaceutical firms are each represented in 2 studies, collectively accounting for 8.5% of the included articles. A notable feature of our review is the presence of eight investigations (constituting 6.6% of the included articles) that span across automotive, finance, healthcare, restaurants, fashion, property development, paper and pulp, and utilities sectors. In a substantial portion of the studies, 24.8% of the articles (30 out of 121), the research delves into the multifaceted landscape of innovation management by examining multiple sectors concurrently. This diversity of sectors in the reviewed literature enriches our understanding of innovation management's applicability and impact across various industry contexts.

The analysis also reveals a noteworthy aspect related to the coverage of the public governance sector in the reviewed articles. Interestingly, this sector seems to be relatively underrepresented in the body of research, as evidenced by the limited number of studies addressing it. The data indicates that the public governance sector, encompassing areas like government agencies, regulatory bodies, and public policy, is not as extensively explored as some of the other industry sectors. It is important to underscore that public governance plays a pivotal role in shaping the innovation landscape, particularly in the context of public sector organizations and government-related activities.

While the reviewed articles encompass a wide array of industry sectors, the observations suggest that the public governance sector may not receive the same level of attention when it comes to innovation management. Given the critical role that public governance plays in influencing innovation policies, regulatory frameworks, and public service delivery, there is potential for future research to delve deeper into this sector. By focusing on public governance, researchers can provide valuable insights into how innovation is managed and leveraged within government organizations and how it contributes to broader societal and economic objectives. This apparent gap in coverage underscores an

area where further exploration and scholarly attention could yield significant contributions to the field of innovation management.

Themes in Ambidexterity Innovation Studies

The seven identified themes in this study represent a comprehensive coverage of the determinants that underpin the management of Innovation Ambidexterity. Through a systematic analysis of a diverse range of articles, the research has thoughtfully curated the most prominent and relevant themes associated with Innovation Ambidexterity management. These themes have been meticulously synthesized to provide a holistic view of the determinants governing Innovation Ambidexterity.

The study's strength lies in its ability to offer a panoramic understanding of the factors that influence an organization's capacity to effectively balance exploration and exploitation in the innovation process. The seven themes include "Process Mechanisms," which delve into the intricate operational processes and strategies that underlie Innovation Ambidexterity. "Organizational Learning" explores how organizations foster knowledge acquisition and adaptation. "Leadership Styles" scrutinize the various approaches to leadership and their impact on Innovation Ambidexterity. "Technology Investments" highlight the role of strategic technological choices. "Organizational Contexts" investigate how an organization's unique context shapes its approach to Innovation Ambidexterity. "Environmental Uncertainties" emphasize the impact of external factors and uncertainties. "Institutional Pressures" delve into how external institutional forces influence Innovation Ambidexterity strategies.

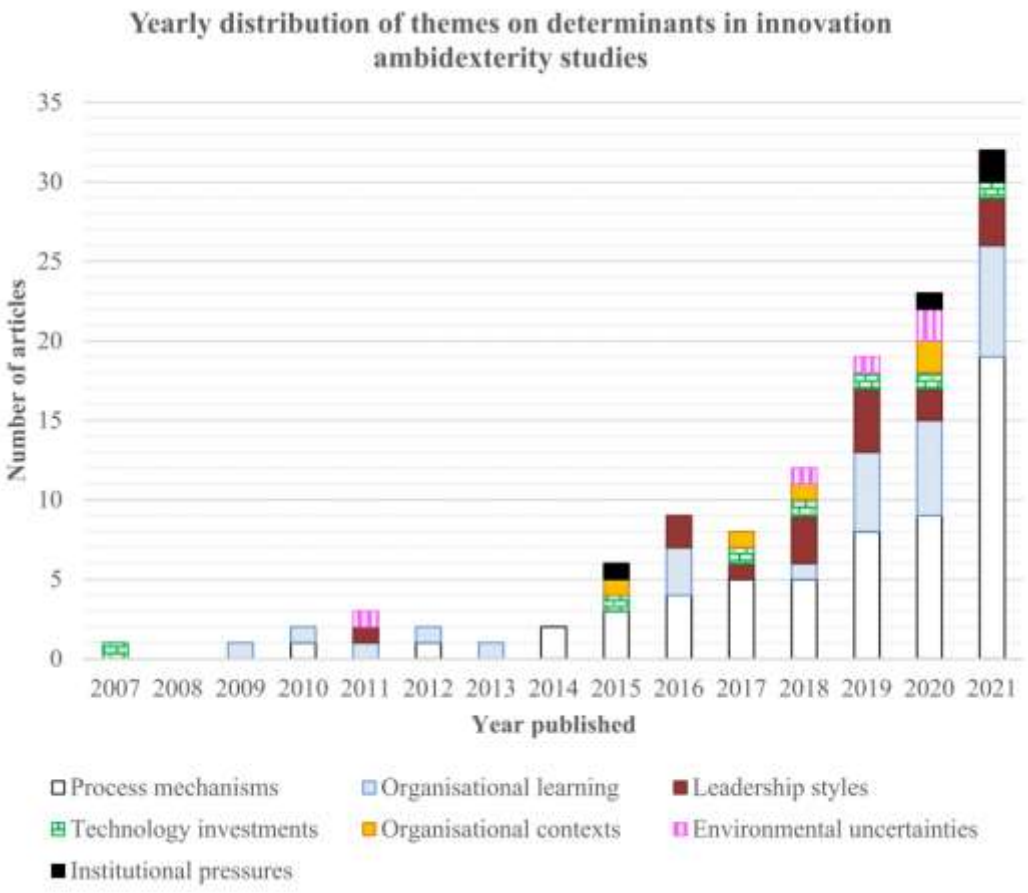

Figure 1.8.1.3 Yearly distribution of themes on determination in innovation ambidexterity studies
Source Adapted from Saleh, Durugbo, and Almahamid (2023).

In the comprehensive analysis of the reviewed articles, the study unveils seven overarching themes that collectively illuminate the determinants underlying the effective management of Innovation Ambidexterity. These themes encapsulate the primary areas of focus within the body of literature and offer valuable insights into the multifaceted field of Innovation Ambidexterity management. The foremost theme, "Process Mechanisms," emerges as a dominant element within the reviewed articles, constituting 47.1% (57 out of 121) of the studies. This theme delves into the intricate processes and operational mechanisms that organizations employ to effectively navigate the complexities of ambidextrous innovation. It provides an in-depth exploration of the strategies and methods utilized in achieving Innovation Ambidexterity management. The "Organizational Learning" theme, accounting for 22.3% (27 out of 121) of the reviewed articles, underscores the pivotal role of knowledge acquisition and adaptation in Innovation Ambidexterity management. It investigates how organizations foster learning cultures and adapt to new challenges and opportunities to maintain a balance between exploration and exploitation. Leadership's significant role in driving Innovation Ambidexterity is the focus of the "Leadership Styles" theme, explored in 13.2% (16 out of 121) of the

articles. This theme delves into various leadership approaches and their influence on an organization's capacity to effectively balance exploration and exploitation activities. Examining the strategic role of technology, the "Technology Investments" theme, addressed in 5.8% (7 out of 121) of the articles, emphasizes the importance of making informed technological choices and investments to promote ambidextrous innovation effectively. The "Organizational Contexts" theme, explored in 4.1% (5 out of 121) of the articles, investigates how the specific context and characteristics of an organization shape its approach to Innovation Ambidexterity Considering the external forces at play, the "Environmental Uncertainties" theme, covered in 4.1% (5 out of 121) of the articles, examines how environmental uncertainties and external factors influence an organization's Innovation Ambidexterity strategies. Finally, the "Institutional Pressures" theme, investigated in 3.3% (4 out of 121) of the articles, delves into the influence of external institutional forces and regulatory frameworks on an organization's approach to Innovation Ambidexterity.

The relatively low number of studies, specifically five out of the 121 reviewed articles, that explore "Organizational Contexts" as a determinant for managing Innovation Ambidexterity presents an intriguing opportunity for future research. This limited body of literature suggests that there is room for substantial growth and investigation within this domain. Future research opportunities in the area of organizational contexts could involve a more comprehensive examination of the various organizational factors, structures, and cultures that impact an organization's approach to Innovation Ambidexterity. For instance, scholars could delve deeper into the influence of different types of organizational structures (e.g., hierarchical vs. flat organizations) on Innovation Ambidexterity management. They may explore how specific cultural attributes, such as innovation culture, affect an organization's ability to balance exploration and exploitation effectively. Moreover, research could investigate how factors like size, age, and industry of the organization interplay with Innovation Ambidexterity management within specific organizational contexts.

Furthermore, understanding how organizational contexts interact with the other identified determinants, such as leadership styles, technology investments, and environmental uncertainties, would enrich the field of Innovation Ambidexterity management. Researchers could explore how leadership styles adapt to different organizational contexts and how they impact Innovation Ambidexterity outcomes. They may also investigate how technology investments are tailored to the unique characteristics of various organizational contexts. Additionally, studies could explore how the degree of environmental uncertainties varies in different organizational contexts and how organizations respond to these uncertainties regarding Innovation Ambidexterity management.

Geographical Regions in Ambidexterity Studies

The following study embarks on a comprehensive journey into the realm of innovation ambidexterity, scrutinizing its nuances, drivers, outcomes, and implications for various sectors and regions. By delving into the literature on this multifaceted subject, we aim to uncover valuable insights that not only enhance our theoretical understanding but also provide practical guidance for managers, policymakers, and organizations seeking to thrive in today's dynamic business environment. This study commences with an in-depth analysis of a wide array of research articles, encompassing aspects of innovation ambidexterity, and offers a synthesis of their findings. Through meticulous examination, the research focuses on the key components, influential factors, and outcomes associated with ambidextrous innovation. Furthermore, it investigates the industries, geographic regions, and contextual aspects that have been the subjects of study, seeking to discern patterns and trends in the existing body of literature.

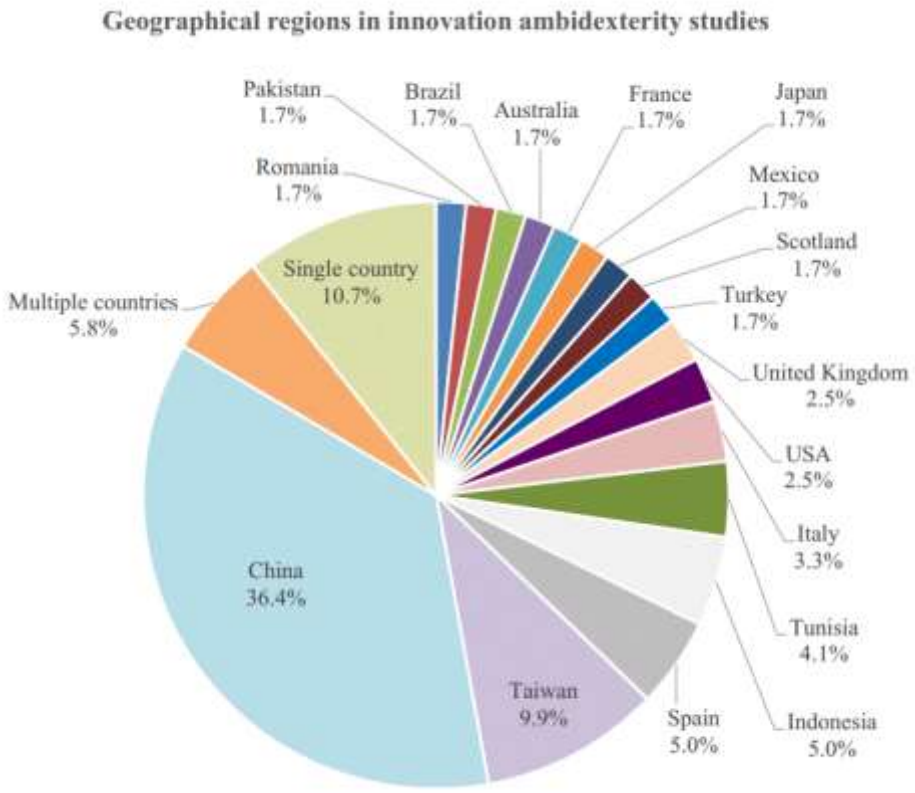

Figure 1.8.1.4 Geographical regions in innovation ambidexterity studies
Source Adapted from Saleh, Durugbo, and Almahamid (2023).

The analysis of reviewed articles reveals significant variations in terms of geographical regions under investigation. Mainland China emerges as the most extensively studied region, featuring in 36.4% (44 out of 121) of the reviewed articles. Following this, Taiwan is the subject of study in 9.9%

(12 out of 121) of the articles. Spain and Indonesia each represent 5.0% (6 out of 121) of the reviewed articles. Tunisia constitutes 4.1% (5 out of 121), Italy 3.3% (4 out of 121), and the United Kingdom and United States each contribute 2.5% (3 out of 121) to the reviewed articles.

Furthermore, several regions across the globe are the focus of 2 studies each, together comprising 15.3% (18 out of 121) of the reviewed articles. These regions include Australia, Brazil, France, Japan, Mexico, Pakistan, Romania, Scotland, and Turkey. Additionally, Austria, Finland, Hong Kong, India, Ireland, Jordan, Kenya, Korea, the Netherlands, Norway, Slovenia, Thailand, and Vietnam are each featured in 1 study, collectively accounting for 10.7% (13 out of 121) of the reviewed articles. The distribution of these studies among various regions provides a comprehensive view of the global context in which research on the topic is conducted, demonstrating both the diversity of geographical locations and the varying levels of academic interest in different regions. The comprehensive breakdown of reviewed articles based on geographical regions, highlights a notable gap in the existing body of literature. While the analysis has shed light on a wide range of regions across the globe that have been subjects of study, it becomes evident that the United Arab Emirates (UAE) has not been a prominent focus in the reviewed articles, nor does it constitute a significant proportion of the research landscape. The absence of studies conducted within the UAE represents an intriguing void in the literature on the topic of innovation ambidexterity.

This void underscores an opportunity for future research and scientific contributions in the field. Given the UAE's strategic and growing significance on the global stage, particularly in business, economics, and innovation, a study centered on this region would hold great potential for expanding our understanding of innovation ambidexterity in diverse economic and cultural contexts. By exploring the dynamics of innovation in the UAE, researchers can not only enhance the comprehensiveness of the literature but also provide valuable insights into the specific challenges, opportunities, and strategies for innovation ambidexterity within this unique environment.

Such a study in the UAE would contribute to the scientific discourse by addressing this geographic gap, enriching the global understanding of innovation ambidexterity, and offering practical guidance to policymakers and businesses operating in or with an interest in the region. It represents an opportunity to explore uncharted territories in the field of innovation research and aligns with the

broader aim of making research contributions that are not only academically valuable but also have real-world relevance and impact.

1.8.2 Ambidextrous Innovation and Organizational Outcomes

This section delves into a comprehensive theoretical analysis that highlights the practical implementation of pertinent and adaptable insights concerning ambidextrous innovation strategy. By dissecting this strategic framework, organizations can effectively integrate seemingly contrasting elements – exploration and exploitation – to navigate the complex landscape of innovation. Ambidextrous innovation strategy enables organizations to not only explore novel opportunities and groundbreaking ideas but also harness existing capabilities to optimize efficiency and maximize returns. This theoretical analysis underscores the value of ambidextrous innovation strategy in reconciling the paradox between pursuing disruptive innovation and optimizing current operations. The exploration dimension encourages experimentation, risk-taking, and venturing into uncharted territories, which can yield disruptive breakthroughs.

Conversely, the exploitation dimension capitalizes on an organization's core competencies, extracting the most value from established resources and refining existing processes to achieve incremental improvements. Through a thorough examination of the ambidextrous innovation strategy, this section highlights the importance of striking a balance between exploration and exploitation. By concurrently fostering a culture of creativity and enabling the seamless execution of established processes, organizations can position themselves at the forefront of innovation while maintaining operational excellence. Furthermore, this analysis delves into real-world examples and case studies to illustrate how various companies have successfully leveraged ambidextrous innovation strategy to drive sustainable growth, respond to market changes, and outperform competitors. By engaging with this theoretical analysis, organizations can gain a deeper understanding of how ambidextrous innovation strategy aligns with their unique circumstances and objectives. This analysis serves as a compass that guides organizations in effectively integrating diverse innovation drivers and maintaining a dynamic equilibrium between pursuing groundbreaking breakthroughs and optimizing current operations.

1.8.3 Organizational Ambidexterity in The Public Sector

The concept of "ambidexterity" has been extensively explored by organizational theorists in their research and theoretical frameworks, aiming to understand the challenges and opportunities associated with balancing exploration and exploitation within organizations. Ambidexterity has gained

prominence due to its ability to address the inherent tensions within organizations, such as stability and change, exploration and exploitation, and flexibility and control (March, 1991)[171].

Theoretical perspectives on organizational ambidexterity shed light on the influence of both internal and external factors. The contextual ambidexterity approach emphasizes the significance of organizational context, where leadership, culture, and structure play crucial roles in enabling or hindering the simultaneous pursuit of exploration and exploitation (Gupta et al., 2016[172]; Simsek et al., 2015)[173]. On the other hand, structural ambidexterity focuses on the design of organizational structures and systems that facilitate ambidextrous behaviors, including the establishment of separate units for exploration and exploitation activities. Scholars have also examined the relationship between ambidexterity and organizational performance, finding that ambidextrous organizations tend to achieve higher levels of innovation, competitive advantage, and financial performance (Gupta et al., 2016[174]; O'Reilly & Tushman, 2011[175]). Mechanisms such as knowledge integration, organizational learning, and dynamic capabilities have been identified as mediators through which ambidexterity

[171] March, J. G. (1991) contributed significantly to the conceptual understanding of ambidexterity with his work "Exploration and Exploitation in organizational learning." This seminal piece was published in Organization Science and remains influential. March delved into the tension between exploration—embracing novelty and experimentation—and exploitation—leveraging existing knowledge and capabilities—in the context of organizational learning. His research highlighted that organizations must balance these seemingly contradictory activities to foster sustainable innovation and long-term success. By exploring new opportunities while efficiently utilizing existing resources, organizations can enhance their ability to adapt to dynamic environments and achieve superior performance. March's work continues to serve as a foundational reference for scholars exploring the complexities of ambidexterity and its impact on organizational strategies and outcomes.
March, J. G. (1991). Exploration and exploitation in organizational learning. Organization Science, 2(1), 71-87.

[172] The study by Gupta, Smith, and Shalley (2016) titled "The Interplay between Exploration and Exploitation" is a notable contribution to the field of organizational research. Published in the Academy of Management Journal, the researchers aimed to understand better the dynamic relationship between exploration and exploitation activities within organizations. By analyzing data from various industries and firms, Gupta et al. explored how these two seemingly opposing activities can interact and influence each other. They proposed that the relationship between exploration and exploitation is not solely a trade-off but a complex interplay that can yield unique strategic advantages when managed effectively.
Gupta, A. K., Smith, K. G., & Shalley, C. E. (2016). The interplay between exploration and exploitation. Academy of Management Journal, 59(4), 1284-1304.

[173] The research conducted by Simsek, Heavey, Veiga, and Souder (2015) titled "A typology for aligning organizational ambidexterity's conceptualizations, antecedents, and outcomes" is a significant contribution to management studies. Published in the Journal of Management, this study provided a comprehensive framework for understanding organizational ambidexterity by systematically categorizing its various conceptualizations, antecedents, and outcomes.
Simsek, Z., Heavey, C., Veiga, J. F., & Souder, D. (2015). A typology for aligning organizational ambidexterity's conceptualizations, antecedents, and outcomes. Journal of Management, 41(5), 1661-1697.

[174] The research article by Gupta, Smith, and Shalley in 2016, titled "The interplay between exploration and exploitation," and published in the Academy of Management Journal, significantly contributes to understanding how exploration and exploitation activities interact within organizations. This study delves into the dynamic relationship between exploration (venturing into new knowledge and opportunities) and exploitation (optimizing existing resources and knowledge). They recognize that organizations must balance these two activities to achieve long-term success and innovation. The authors argue that this interplay is complex and requires careful management to achieve optimal outcomes.
Gupta, A. K., Smith, K. G., & Shalley, C. E. (2016). The interplay between exploration and exploitation. Academy of Management Journal, 59(4), 1284-1304.

[175] The paper authored by O'Reilly III and Tushman in 2011, titled "Organizational ambidexterity in action: How managers explore and exploit," and published in the California Management Review, provides a comprehensive exploration of how organizational ambidexterity is put into practice by managers within real-world contexts. In this study, the authors delve into the practical implementation of ambidextrous strategies, which involve the simultaneous pursuit of exploration (innovation and new opportunities) and exploitation (optimization of existing resources) by organizations. O'Reilly and Tushman delve into how managers navigate the challenges and complexities of balancing these dual activities.
O'Reilly III, C. A., & Tushman, M. L. (2011). Organizational ambidexterity in action: How managers explore and exploit. California Management Review, 53(4), 5-22.

influences performance outcomes (Simsek et al., 2015[176]; Wang & Ahmed, 2017)[177].

Although previous research has predominantly focused on ambidexterity in the private sector, there is a growing interest in understanding its applicability in the public sector. The public sector presents unique challenges and opportunities for achieving ambidexterity, given its distinct objectives, stakeholders, and operating environment (Kuhlmann et al., 2020)[178]. Organizational ambidexterity in the public sector is relevant for improving public service delivery, fostering innovation, and enhancing responsiveness to societal needs (Rauch et al., 2019)[179]. By effectively balancing exploration and exploitation, public organizations can navigate complexities, adapt to changing demands, and achieve sustainable performance. External and internal knowledge play a crucial role in organizational ambidexterity in the public sector.

1.8.4 The Challenging Transition Towards Ambidexterity

Implementing and sustaining organizational ambidexterity within the public sector is not without its formidable challenges. Bureaucratic structures, risk aversion, political pressures, resource limitations, accountability mechanisms, and regulatory frameworks can collectively act as barriers to

[176] The study authored by Simsek, Heavey, Veiga, and Souder in 2015, titled "A typology for aligning organizational ambidexterity's conceptualizations, antecedents, and outcomes," published in the Journal of Management, presents a comprehensive framework that categorizes different conceptualizations, antecedents, and outcomes of organizational ambidexterity.
Simsek, Z., Heavey, C., Veiga, J. F., & Souder, D. (2015). A typology for aligning organizational ambidexterity's conceptualizations, antecedents, and outcomes. Journal of Management, 41(5), 1661-1697.

[177] Wang, C. L., & Ahmed, P. K. (2017). Dynamic capabilities: A review and research agenda. International Journal of Management Reviews, 19(1), 31-53." is a research paper that examines dynamic capabilities, a concept critical to organizational adaptability and success in rapidly changing environments. The authors delve into the theoretical foundations and empirical evidence related to dynamic capabilities, highlighting their role in enabling organizations to sense, seize, and reconfigure resources to respond to opportunities and challenges.
Wang, C. L., & Ahmed, P. K. (2017). Dynamic capabilities: A review and research agenda. International Journal of Management Reviews, 19(1), 31-53.

[178] Kuhlmann, S., Bogumil, J., & Grohs, S. (2020). Ambidextrous public administration: The strategic management of organizational performance and innovation. Public Management Review, 22(10), 1527-1545." is a scholarly article that focuses on ambidexterity in public administration. The paper explores how public organizations can effectively balance the pursuit of performance enhancement and innovation, often seen as competing priorities.
Kuhlmann, S., Bogumil, J., & Grohs, S. (2020). Ambidextrous public administration: The strategic management of organizational performance and innovation. Public Management Review, 22(10), 1527-1545.

[179] Rauch, A., Dörrenbächer, C., & Reiß, C. (2019). Exploring ambidextrous public administration: A systematic review and future research agenda. Public Management Review, 21(6), 819-846." is a systematic review and research agenda paper that delves into ambidexterity in public administration. The authors conduct a comprehensive review of existing literature to understand how ambidextrous practices are applied in the public sector and identify avenues for future research.
Rauch, A., Dörrenbächer, C., & Reiß, C. (2019). Exploring ambidextrous public administration: A systematic review and future research agenda. Public Management Review, 21(6), 819-846.

adopting and effectively executing ambidexterity strategies (Stritch et al., 2021[180]; Moe et al., 2020)[181]. Recognizing and addressing these challenges is paramount to harnessing the potential advantages of ambidexterity in public organizations.

Bureaucratic structures are a hallmark of many public entities, designed to provide stability, consistency, and control in the delivery of public services. However, these structures can inadvertently create challenges for the pursuit of organizational ambidexterity. The hierarchical decision-making processes inherent in bureaucratic systems can slow down the implementation of innovative initiatives. Hierarchies often involve multiple layers of approvals, which can result in delays and hinder the agility required for swift action in the face of emerging opportunities or challenges (Rainey, 2014[182]). Furthermore, rigid protocols and standardized procedures, often a feature of bureaucratic organizations, can impede the adoption of new practices. These protocols are established to ensure uniformity and consistency but can unintentionally stifle experimentation and innovation. For instance, the need to adhere to predefined processes might discourage employees from exploring new approaches or deviating from established norms (Farazmand, 2015[183]). Research suggests that adapting bureaucratic structures to accommodate ambidexterity can be a complex endeavor. Organizations need

[180] Stritch, J. M., O'Reilly III, C. A., & Tushman, M. L. (2021). How to Design Organizations for Ambidexterity. MIT Sloan Management Review, 62(1), 17-21." is an article published in the "MIT Sloan Management Review." The article's authors are Stritch, J. M., O'Reilly III, C. A., and Tushman, M. L. The article focuses on organizational design for ambidexterity, which involves creating structures and processes that allow organizations to balance exploration and exploitation effectively. The authors discuss strategies and approaches for designing organizations simultaneously pursuing innovation and efficiency. The article provides insights into the challenges and considerations of implementing ambidextrous organizational structures and offers practical recommendations for managers and leaders. As published in a reputable management review journal, this reference is valuable for understanding how to design organizations to achieve ambidexterity.
Stritch, J. M., O'Reilly III, C. A., & Tushman, M. L. (2021). How to Design Organizations for Ambidexterity. MIT Sloan Management Review, 62(1), 17-21.

[181] Moe, C., Døving, E., & Gooderham, P. N. (2020). Balancing Exploration and Exploitation: The Paradox of Ambidexterity in Public Management. Public Administration Review, 80(2), 258-268." is an article published in the "Public Administration Review." The article's authors are Moe, C., Døving, E., and Gooderham, P. N. The article delves into the paradox of ambidexterity in public management, addressing the challenges and tensions associated with simultaneously pursuing exploration and exploitation in the public sector. The authors examine how ambidexterity can be a complex undertaking due to the unique characteristics of public organizations. The article discusses strategies and potential solutions for balancing exploration and exploitation within the constraints of the public management context. As it contributes insights into the complexities of ambidexterity in the public sector, this reference is a valuable source for understanding the intricacies of managing ambidexterity in public organizations.
Moe, C., Døving, E., & Gooderham, P. N. (2020). Balancing Exploration and Exploitation: The Paradox of Ambidexterity in Public Management. Public Administration Review, 80(2), 258-268.

[182] Understanding and Managing Public Organizations" is a book by Rainey, H. G. The book comprehensively explores public organizations and their management. It delves into public organizations' functions, structures, decision-making processes, and challenges. Rainey discusses various aspects of public administration, including bureaucracy, organizational behavior, leadership, and governance. The book is a widely recognized resource for scholars, students, and practitioners interested in understanding public organizations' dynamics, complexities, and strategies for effective management. Given its focus on public administration and organizational management, this book serves as a valuable reference for gaining insights into the functioning and management of public entities.
Rainey, H. G. (2014). Understanding and Managing Public Organizations. Jossey-Bass.

[183] Bureaucracy and Administration" is a chapter by Farazmand, A., included in the "Global Encyclopedia of Public Administration, Public Policy, and Governance." The chapter comprehensively overviews bureaucracy and its role in public administration. It delves into the historical evolution of bureaucracy, its principles, characteristics, and functions within the context of public organizations. Farazmand discusses the various dimensions of bureaucracy, including organizational structure, decision-making processes, and the relationship between bureaucracy and governance. The chapter also explores critical concepts and debates surrounding bureaucracy, such as its efficiency, accountability, and responsiveness to changing societal needs. As part of the more extensive encyclopedia, this chapter serves as a valuable resource for understanding the intricacies of bureaucracy and its significance in public administration and governance.
Farazmand, A. (2015). Bureaucracy and Administration. In Global Encyclopedia of Public Administration, Public Policy, and Governance (pp. 1-11). Springer.

to find ways to maintain the benefits of stability and control while introducing mechanisms that foster innovation and flexibility. This might involve rethinking decision-making processes to empower lower-level employees to make quick decisions in response to new opportunities or challenges (Rainey, 2014[184]). Furthermore, creating spaces for experimentation and pilot projects within the existing bureaucratic framework can facilitate the adoption of new practices. For example, allowing certain units or teams to operate with greater autonomy and flexibility can encourage innovative thinking and the exploration of new approaches (Farazmand, 2015). In essence, addressing the challenges posed by bureaucratic structures to ambidexterity requires a careful balancing act. Organizations need to find ways to maintain essential stability while introducing mechanisms that allow for agility and innovation. By recognizing the limitations of bureaucratic systems and strategically adapting them, public entities can better position themselves to embrace ambidexterity and drive innovation.

Risk aversion is a critical challenge faced by public organizations aiming to embrace organizational ambidexterity. Public entities frequently exhibit a strong aversion to risk due to the multifaceted implications of failures, ranging from political backlash to financial losses and reputational damage. This risk aversion can have a profound impact on the organization's ability to effectively pursue ambidextrous strategies, particularly in terms of exploration and innovation. In many cases, the apprehension towards risk can hinder the willingness to experiment, which is a fundamental aspect of the exploration dimension of ambidexterity. The fear of negative outcomes can discourage public organizations from venturing into uncharted territories or trying novel approaches. The consequences of failures in a public context often extend beyond financial losses and can involve intense public scrutiny, media attention, and political repercussions (Eckerdal & Ristimäki, 2020[185]).

The preference for risk aversion over innovation can create a strong bias towards maintaining the status quo. In an attempt to avoid potential pitfalls, organizations might lean towards familiar processes, routines, and practices, even if they are not optimal or innovative. This can lead to missed opportunities for growth, improvement, and responding effectively to emerging challenges. To address the challenge of risk aversion, public organizations need to develop strategies that balance the need for

[184] H. George Rainey's book, 'Understanding and Managing Public Organizations,' published by Jossey-Bass, offers a comprehensive exploration of the dynamics and challenges inherent in public organizations. Rainey, an esteemed scholar in public administration, provides a detailed analysis of the unique characteristics and complexities of public organizations, focusing on their structure, functioning, and management.
Rainey, H. G. (2014). Understanding and Managing Public Organizations. Jossey-Bass.

[185] The paper by Eckerdal and Ristimäki (2020) delves into risk management within the public sector, offering a comprehensive review and a forward-looking research agenda. The authors scrutinize the intricate landscape of risk management practices and strategies as applied in the public sector. This entails thoroughly examining how various risk management approaches are employed to address the distinct challenges and complexities that public organizations face.
Eckerdal, A., & Ristimäki, J. (2020). Risk Management in the Public Sector: A Review and Research Agenda. Public Money & Management, 40(4), 263-272.

caution with the imperative of innovation. This could involve creating safe spaces for experimentation, where failures are treated as learning opportunities rather than career-limiting setbacks. Additionally, leadership that encourages a culture of calculated risk-taking and provides support during experimentation can help mitigate the negative effects of risk aversion (March & Olsen, 2019[186]). Understanding and addressing risk aversion is crucial for public organizations seeking to cultivate ambidexterity. By fostering a culture that recognizes the potential benefits of innovation and provides mechanisms to manage and learn from failures, these organizations can overcome the barriers posed by risk aversion and fully embrace the opportunities presented by ambidextrous strategies.

Political pressures and considerations exert a significant influence on the ability of public organizations to effectively implement ambidexterity strategies (Lægreid & Rykkja, 2015[187]). In the realm of public administration, decisions often respond to dynamic shifts in political priorities (Berman et al., 2019[188]). Elected officials and policymakers frequently grapple with the demand to deliver immediate and visible outcomes that align with the preferences of constituents, potentially favoring short-term solutions over innovative long-term strategies (Berman et al., 2019). This tension between transient political urgencies and the enduring goals of innovation can introduce complexities into decision-making and strategic execution. Such complexities can lead to internal conflicts as decision-makers navigate the delicate balance between immediate political expectations and strategies that foster sustained efficacy (Lægreid & Rykkja, 2015).

Furthermore, the existence of political pressures may foster a risk-averse environment, where concerns about potential adverse political repercussions discourage experimentation and exploration (Lægreid & Rykkja, 2015). In this context, the paramount challenge is to establish equilibrium between political priorities and innovation aims. Creating platforms for communication and collaboration

[186] The paper by Eckerdal and Ristimäki (2020) delves into the realm of risk management within the public sector, offering a comprehensive review and a forward-looking research agenda. The authors scrutinize the intricate landscape of risk management practices and strategies in the public sector. This thoroughly examines how various risk management approaches address public organizations' distinct challenges and complexities. By conducting an in-depth review of the existing literature, the authors provide insights into the multifaceted nature of risk management within the public sector. They explore diverse perspectives and methodologies adopted in different contexts, shedding light on the nuances and variations in risk management practices.
Eckerdal, A., & Ristimäki, J. (2020). Risk Management in the Public Sector: A Review and Research Agenda. Public Money & Management, 40(4), 263-272.

[187] The study by Lægreid and Rykkja (2015) delves into the intricate issue of coordinating policy areas that cut across various sectors, focusing on the specific context of the coordination reform in Norway. The research explores the complexities and challenges associated with cross-cutting policy initiatives, often involving multiple government agencies, departments, and stakeholders.
Lægreid, P., & Rykkja, L. H. (2015). The challenge of coordination in cross-cutting policy areas: The case of the coordination reform in Norway. Public Administration, 93(2), 417-433.

[188] The book authored by Berman, Bowman, West, and Van Wart (2019) provides a comprehensive exploration of the complexities and dynamics of human resource management in the context of public service. Titled "Human Resource Management in Public Service: Paradoxes, Processes, and Problems," the publication delves into the distinctive challenges, paradoxes, and intricate processes that define human resources management within public organizations.
Berman, E. M., Bowman, J. S., West, J. P., & Van Wart, M. (2019). Human resource management in public service: Paradoxes, processes, and problems. SAGE Publications.

among stakeholders, including political leaders, public officials, and innovation teams, becomes crucial (Berman et al., 2019). Such collaborative initiatives foster shared understanding of the significance of ambidextrous strategies in securing enduring organizational accomplishments, thereby aligning political considerations with innovation objectives (Lægreid & Rykkja, 2015).

Resource constraints are a pervasive challenge confronting public sector organizations as they endeavor to implement and sustain ambidexterity strategies (Ansell & Gash, 2018[189]). In the context of constrained budgets and finite resources, public entities often grapple with the dilemma of how to optimally allocate resources between exploratory initiatives and the optimization of existing processes (Ansell & Gash, 2018). Limited financial resources can curtail the ability of public organizations to undertake innovative ventures. In many instances, the exigencies of resource scarcity compel organizations to prioritize operational stability and efficiency over more experimental undertakings (Ansell & Gash, 2018). As public organizations aim to provide essential services within their allocated budgets, this conservative approach can inadvertently hinder their capacity to engage in proactive exploration. Furthermore, resource constraints can impact the recruitment and retention of skilled personnel, affecting the organization's capability to implement both exploratory and exploitative activities (Barzelay & Gallego, 2019[190]). Talented individuals capable of driving innovation and managing operational improvements may be drawn to sectors with more favorable resource conditions, resulting in a potential talent drain from the public sector. Mitigating the challenges posed by resource constraints necessitates strategic allocation and utilization of available resources (Ansell & Gash, 2018[191]). Collaborative partnerships with external stakeholders, such as private enterprises, academic institutions, and non-governmental organizations, can facilitate the sharing of resources and

[189] The article by Ansell and Gash (2018) titled "Collaborative Governance in Theory and Practice" delves into the concept of collaborative governance, exploring its theoretical underpinnings and practical manifestations. Published in the Journal of Public Administration Research and Theory, the authors aim to shed light on the complexities of collaborative approaches in governance and provide insights into their application.
Ansell, C., & Gash, A. (2018). Collaborative governance in theory and practice. Journal of Public Administration Research and Theory, 18(4), 543-571.

[190] The article by Barzelay and Gallego (2019) titled "From New Public Management to Public Value: Paradigmatic Change and Managerial Implications" is featured in the Public Administration Review. This publication delves into transforming public management paradigms, tracing the shift from New Public Management (NPM) to the concept of public value. The authors explore the theoretical and practical implications of this paradigmatic change, shedding light on its effects on managerial practices in the public sector.
In their article, Barzelay and Gallego critically analyze the evolution of NPM and its limitations in addressing the complexities of contemporary governance challenges. They delve into the emergence of the public value framework as an alternative approach that emphasizes creating value for citizens and stakeholders rather than focusing solely on efficiency and cost-cutting. The authors highlight the key principles and characteristics of the public value paradigm, such as a renewed emphasis on democratic engagement, responsiveness to diverse societal needs, and collaborative decision-making.
Barzelay, M., & Gallego, R. (2019). From new public management to public value: Paradigmatic change and managerial implications. Public Administration Review, 79(6), 855-865.

[191] Collaborative Governance in Theory and Practice" is a scholarly article by Christopher Ansell and Alison Gash. It was published in the Journal of Public Administration Research and Theory in 2018. The article addresses the concept of collaborative governance within public administration. Ansell and Gash delve into collaborative governance's theoretical foundations and practical applications, offering insights into how it functions in diverse settings.
Ansell, C., & Gash, A. (2018). Collaborative governance in theory and practice. Journal of Public Administration Research and Theory, 18(4), 543-571.

knowledge, thereby alleviating the resource burden (Barzelay & Gallego, 2019[192]). Moreover, establishing clear prioritization criteria that align with the organization's strategic goals can help optimize resource allocation between exploration and exploitation efforts (Barzelay & Gallego, 2019).

The public sector operates within a framework of accountability mechanisms and regulatory constraints that can significantly impact its ability to pursue and sustain ambidexterity strategies (Thynne et al., 2021[193]). These mechanisms are designed to ensure transparency, ethical conduct, and responsible use of public resources. However, they can inadvertently introduce barriers to innovation by imposing procedural rigidity and discouraging risk-taking. Strict regulatory frameworks, while essential for maintaining public trust, can impede the rapid experimentation and iterative learning required for successful exploration (Thynne et al., 2021). The bureaucratic nature of compliance processes may slow down decision-making and hinder the implementation of innovative initiatives. Public organizations often find themselves in a delicate balancing act, striving to achieve the right equilibrium between compliance with regulations and the need for adaptive innovation (Ongaro & Ferré, 2018[194]). Accountability mechanisms can lead to risk aversion as public officials seek to avoid any potential deviations from established norms. The imperative to minimize risks and avoid negative publicity can make public organizations wary of taking calculated risks associated with exploration (Thynne et al., 2021[195]). The fear of adverse consequences arising from failed innovative endeavors may cause organizations to prioritize stability over the pursuit of breakthrough solutions.

To overcome these challenges, public organizations must navigate a complex landscape that

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[192] From New Public Management to Public Value: Paradigmatic Change and Managerial Implications" is a research article by Michael Barzelay and Raquel Gallego. Published in the Public Administration Review in 2019, the article explores the shift from the New Public Management (NPM) paradigm to the concept of public value in public administration.
Barzelay, M., & Gallego, R. (2019). From new public management to public value: Paradigmatic change and managerial implications. Public Administration Review, 79(6), 855-865.

[193] The research article titled "The Compliance Paradox and the Policing of Accountability: The Case of Bureaucratic Innovation in Public Services" is authored by Ian Thynne, Christopher Hood, and Heledd Willmott. Published in the Public Administration journal in 2021, the article examines the intricate relationship between compliance, accountability, and bureaucratic innovation within the context of public services.

[194] The research article titled "Managing Trade-offs Between Accountability and Innovation: The Role of Flexible Rules" is authored by Edoardo Ongaro and Francesco Ferré. Published in the Public Administration Review in 2018, the article investigates the delicate balance between accountability and innovation in public organizations, focusing on the significance of flexible rules. Ongaro and Ferré delve into the inherent tension between accountability requirements and the necessity for innovation within public administration. They argue that rigid rules and compliance mechanisms can often hinder the exploration of innovative approaches due to the fear of accountability-related repercussions. The authors propose the concept of "flexible rules" as a potential solution to address this challenge.
Ongaro, E., & Ferré, F. (2018). Managing trade-offs between accountability and innovation: The role of flexible rules. Public Administration Review, 78(6), 868-879.

[195] The research article "The Compliance Paradox and the Policing of Accountability: The Case of Bureaucratic Innovation in Public Services" is co-authored by Ian Thynne, Christopher Hood, and Heledd Willmott. Published in the journal Public Administration in 2021, the article delves into the intricate interplay between compliance, accountability, and bureaucratic innovation within public services.
Thynne, I., Hood, C., & Willmott, H. (2021). The compliance paradox and the policing of accountability: The case of bureaucratic innovation in public services. Public Administration, 99(2), 377-395.

balances innovation with accountability (Ongaro & Ferré, 2018[196]). This involves adopting flexible approaches to compliance that allow for controlled experimentation within regulatory boundaries. Developing a culture of responsible innovation and creating mechanisms to share successful experiments and lessons learned can help overcome the fear of accountability-related repercussions (Thynne et al., 2021[197]).

1.9 Disruptive Innovation for New Public Transformation

Disruptive innovation has emerged as a crucial element in driving the transformation of the public sector. As the public administration landscape continues to evolve rapidly, traditional approaches and incremental changes are no longer sufficient to address the complex challenges and meet the growing expectations of citizens. This section explores the concept of disruptive innovation and its significance in driving the new public transformation. Drawing on recent academic literature, it highlights the key characteristics and benefits of disruptive innovation and examines its application in the context of public sector reform.

Disruptive innovation, as introduced by Clayton Christensen (1997), refers to the process by which new ideas, technologies, or approaches disrupt existing practices, norms, and markets. It involves the creation of novel solutions that challenge the status quo and fundamentally alter the way organizations operate and deliver value. Disruptive innovation is characterized by its potential to introduce significant improvements, transform industry dynamics, and create new opportunities for organizations. In the context of the public sector, disruptive innovation shares certain key characteristics. Firstly, it challenges conventional wisdom and established practices, encouraging organizations to question existing norms and explore alternative approaches (Osborne, 2010[198]).

[196] The research article titled "Managing Trade-offs between Accountability and Innovation: The Role of Flexible Rules" is authored by Edoardo Ongaro and Francesca Ferré. Published in Public Administration Review in 2018, the article delves into the intricate dynamics of balancing accountability and innovation in public organizations. Ongaro and Ferré examine how public organizations can effectively manage the tension between the imperative to ensure accountability and the need to foster innovation. They propose the concept of "flexible rules" as a strategic approach to navigating this trade-off. The authors argue that rigid adherence to strict rules can stifle innovative endeavors, while excessive flexibility can compromise accountability. The article explores the idea that a middle ground of flexible rules can enable public organizations to experiment and innovate within predefined boundaries.
Ongaro, E., & Ferré, F. (2018). Managing trade-offs between accountability and innovation: The role of flexible rules. Public Administration Review, 78(6), 868-879.

[197] The research article "The Compliance Paradox and the Policing of Accountability: The Case of Bureaucratic Innovation in Public Services" is co-authored by Ian Thynne, Christopher Hood, and Heledd Willmott. Published in the journal Public Administration in 2021, the article delves into the complex interplay between compliance, accountability, and innovation within public services. Thynne, Hood, and Willmott investigate the "compliance paradox," which refers to the challenging tension that arises when public organizations are expected to adhere to regulations while fostering innovative practices. The authors utilize a case study approach to examine how public services grapple with this paradox, particularly in the context of bureaucratic innovation.
Thynne, I., Hood, C., & Willmott, H. (2021). The compliance paradox and the policing of accountability: The case of bureaucratic innovation in public services. Public Administration, 99(2), 377-395.

[198] The reference "Osborne, S. P. (2010). The new public governance? Emerging perspectives on the theory and practice of public governance. Routledge" points to a book by Stephen P. Osborne. In this book, Osborne explores the concept of "new public governance," which represents a shift in the theory and practice of public governance. The book delves into emerging perspectives on how public governance evolves and adapts to

Secondly, disruptive innovation often arises from interdisciplinary collaborations and the integration of diverse perspectives, enabling the development of novel solutions (Stoker et al., 2015[199]). Thirdly, disruptive innovation emphasizes experimentation and risk-taking, fostering a culture that embraces learning from failures and iterative improvements (Mulgan, 2017[200]).

Disruptive innovation holds several benefits for the public sector and its transformation efforts. Firstly, it can enhance service delivery by offering more citizen-centric and personalized solutions (Bryson & Sullivan-Taylor, 2014[201]). Disruptive innovations have the potential to leverage emerging technologies, such as artificial intelligence and blockchain, to streamline administrative processes, improve access to information, and enable more efficient service delivery (Stoker et al., 2015[202]). Secondly, disruptive innovation can drive organizational agility and adaptability, enabling public sector entities to respond more effectively to rapidly changing societal needs and technological advancements (Bason, 2014[203]). By fostering a culture of innovation, organizations become better

contemporary challenges and opportunities. "New public governance" reflects a changing public administration and management paradigm. It emphasizes concepts such as collaboration, networked governance, and the engagement of various stakeholders, including the private sector and civil society, in the public sector's decision-making and service delivery processes. This shift challenges traditional hierarchical and bureaucratic approaches to governance and encourages more flexible and adaptive models.
Osborne, S. P. (2010). The new public governance? Emerging perspectives on the theory and practice of public governance. Routledge.

[199] The reference "Stoker, G., Bovaird, T., & Löffler, E. (2015). Innovations in public leadership development. International Review of Administrative Sciences, 81(2), 267-288" points to a scholarly article published in the "International Review of Administrative Sciences." This article, authored by Gerry Stoker, Tony Bovaird, and Elke Löffler, focuses on leadership development within the public sector, particularly in innovation.
The article likely explores various innovative approaches and strategies for developing public sector leaders. This could include examining new training methodologies, leadership programs, and practices that aim to enhance public sector leaders' skills, competencies, and capacities. It may also discuss how these innovations in leadership development align with the changing demands and challenges public organizations face.
Stoker, G., Bovaird, T., & Löffler, E. (2015). Innovations in public leadership development. International Review of Administrative Sciences, 81(2), 267-288.

[200] Experimental Government" by Geoff Mulgan is a publication from Nesta, a global innovation foundation. The work explores the concept of experimentalism in government and public policy.
The central theme of the publication revolves around the idea of applying experimental methods and approaches to government activities and policy-making. It suggests that governments can benefit from adopting a more experimental mindset, similar to how scientists conduct experiments to test hypotheses and gather data. In this context, governments can experiment with different policies, interventions, and approaches to address complex societal challenges and improve public services.
Mulgan's work likely delves into practical examples of experimental government initiatives and their outcomes. It may also discuss the potential benefits and challenges of adopting experimental public administration approaches. Additionally, the publication might highlight the role of data, evidence-based decision-making, and collaboration in experimental government.
Mulgan, G. (2017). Experimental government. Nesta.

[201] The paper "Cross-sectoral Innovation in the Public Sector" by Bryson and Sullivan-Taylor, published in the International Journal of Public Administration, examines the concept of innovation in the public sector, mainly focusing on cross-sectoral innovation. The paper's central theme revolves around the idea that innovation in the public sector can benefit significantly from collaboration and knowledge exchange across different sectors, such as government agencies, nonprofit organizations, and private enterprises. The authors likely discuss the challenges and opportunities of fostering innovation in a collaborative, cross-sectoral context.
Bryson, J. M., & Sullivan-Taylor, B. (2014). Cross-sectoral innovation in the public sector. International Journal of Public Administration, 37(14), 976-986.

[202] The article "Innovations in Public Leadership Development" by Stoker, Bovaird, and Löffler, published in the International Review of Administrative Sciences, explores innovative public sector leadership development approaches. It discusses contemporary leadership challenges in the public sector, introduces innovative leadership development strategies, and provides case studies of successful programs. The article highlights the importance of cross-sectoral perspectives and collaboration in leadership development and discusses the implications of effective leadership for public policy and governance.
Stoker, G., Bovaird, T., & Löffler, E. (2015). Innovations in public leadership development. International Review of Administrative Sciences, 81(2), 267-288.

[203] "Leading Public Sector Innovation: Co-creating for a Better Society" by Christian Bason is a book that delves into public sector innovation. The author emphasizes the importance of co-creation, collaboration, and innovative approaches in improving public services and addressing societal challenges. Bason provides insights, case studies, and practical guidance for public sector leaders and policymakers on fostering innovation within

equipped to navigate uncertainty, embrace change, and proactively address emerging challenges (Mulgan, 2017). Lastly, disruptive innovation can promote collaboration and co-creation with citizens and other stakeholders, enhancing the democratic governance of public services (Pestoff, 2012[204]). By involving citizens in the design and delivery of services, disruptive innovation empowers individuals and communities, leading to greater satisfaction, trust, and legitimacy in public institutions (Bovaird, 2017[205]).

Applying disruptive innovation in public sector reform requires a strategic and systematic approach. It entails creating an enabling environment that fosters innovation, encouraging experimentation, and providing resources and support for innovative initiatives (Bason, 2014[206]). Public sector organizations should embrace open innovation models, collaboration with external partners, and engage in co-creation processes to harness the full potential of disruptive innovation (Bryson & Sullivan-Taylor, 2014[207]). Moreover, policymakers and public managers need to adopt agile governance mechanisms that facilitate the adaptation of regulations and policies to accommodate disruptive innovations (Osborne & Brown, 2013[208]). This involves developing flexible frameworks

government agencies. The book offers a comprehensive view of the role of leadership in driving innovation and creating positive societal impacts through collaborative efforts in the public sector.
Bason, C. (2014). Leading public sector innovation: Co-creating for a better society. Policy Press.

[204] In the article "Co-production and Third Sector Social Services in Europe: Some Concepts and Evidence," by Victor Pestoff, the focus is on the concept of co-production in the context of social services provided by the third sector in Europe. Pestoff explores the idea of co-production, which involves collaboration between service users, service providers, and the community in the design, delivery, and evaluation of social services. The article presents critical concepts and empirical evidence about co-production practices in various European countries. It sheds light on the growing importance of involving citizens and non-profit organizations in shaping and delivering social services, emphasizing a more participatory and community-driven approach to service provision.
Pestoff, V. (2012). Co-production and third sector social services in Europe: Some concepts and evidence. Voluntas: International Journal of Voluntary and Nonprofit Organizations, 23(4), 1102-1118.

[205] In the article titled "Beyond Engagement and Participation: User and Community Coproduction of Public Services," by Tony Bovaird, the author explores the concept of coproduction in the context of public services. Bovaird goes beyond traditional notions of engagement and participation, emphasizing the active involvement of users and communities in creating and delivering public services. The article delves into the idea that public services can be more effectively and efficiently provided when service recipients and the community collaborate with service providers in various stages of service design, implementation, and evaluation. Bovaird discusses the principles and benefits of user and community coproduction, highlighting its potential to enhance service quality, responsiveness, and public service delivery. This article contributes to the evolving discourse on citizen engagement and the transformation of public services through collaborative approaches.
Bovaird, T. (2017). Beyond engagement and participation: User and community coproduction of public services. Public Administration Review, 77(5), 766-776.

[206] Catherine Bason's book, 'Leading Public Sector Innovation: Co-creating for a Better Society,' published in 2014 by Policy Press, delves into public sector innovation. Bason provides insights and guidance on how public sector organizations can foster innovation by engaging in co-creation processes. The book emphasizes the importance of collaboration between public sector entities and various stakeholders, including citizens, in pursuing innovative solutions that contribute to the betterment of society. Bason's work highlights the role of leadership in driving and facilitating innovation within the public sector, offering practical approaches for organizations to navigate the challenges and opportunities of innovation in a government context.
Bason, C. (2014). Leading public sector innovation: Co-creating for a better society. Policy Press.

[207] The research article "Cross-Sectoral Innovation in the Public Sector," authored by J. M. Bryson and B. Sullivan-Taylor and published in the International Journal of Public Administration in 2014, explores the concept of innovation in the public sector from a cross-sectoral perspective. The article delves into how public sector organizations can draw upon innovations and practices from other sectors, such as the private and non-profit sectors, to improve their operations and service delivery. It emphasizes the importance of looking beyond traditional boundaries to identify and adapt innovative approaches that have proven successful in different contexts. The authors provide insights and examples of cross-sectoral innovation within the public sector, highlighting this approach's potential benefits and challenges to fostering innovation in government organizations.
Bryson, J. M., & Sullivan-Taylor, B. (2014). Cross-sectoral innovation in the public sector. International Journal of Public Administration, 37(14), 976-986.

[208] The book "Managing Change and Innovation in Public Service Organizations" by Stephen P. Osborne and Kerry Brown, published in 2013, comprehensively explores change and innovation management within public service organizations. The book addresses the unique challenges public sector entities face in implementing change and fostering innovation, offering insights and strategies for overcoming these challenges effectively. It

that balance innovation with accountability, ensuring public value is safeguarded throughout the transformation process.

Disruptive innovation has emerged as an essential driver of the new public transformation. By challenging existing norms, fostering experimentation, and promoting citizen-centricity, disruptive innovation enables public sector organizations to address complex challenges, improve service delivery, and enhance democratic governance. Embracing disruptive innovation requires strategic planning, a supportive environment, and agile governance mechanisms. Policymakers and public managers must recognize the transformative potential of disruptive innovation and leverage it effectively to shape the future of public administration. According to Christensen's definition, disruptive innovation involves significant changes that occur gradually in a specific market, resulting in the introduction of new markets or the replacement of existing goods and services. However, Kattel et al. (2018)[209] argue that the public sector predominantly relies on incremental innovation due to its operational characteristics. Unlike the private sector, public sector is driven by the government's mandate to provide essential services to citizens, resulting in limited competition within the sector, as noted by Leitner and Stiefmueller (2019)[210].

While competition is identified as a major driver of disruptive innovation in other industries, the public sector's focus on service provision restricts the need for extensive competition. However, Kattel et al. (2018) contend that the use of technology significantly impacts the public sector. Technological advancements have changed how the public sector operates and improves its service delivery processes. Therefore, technology adoption and integration hold considerable importance within the public sector. The influence of technology on disruptive innovation in the public sector is

covers various aspects of change and innovation, including the role of leadership, organizational culture, and governance mechanisms in driving transformation. Additionally, the book examines case studies and practical examples from public service organizations, offering real-world illustrations of successful change and innovation initiatives. Overall, the book serves as a valuable resource for public sector managers, policymakers, and scholars interested in improving the capacity for innovation within government agencies and organizations.
Osborne, S. P., & Brown, K. (2013). Managing change and innovation in public service organizations. Routledge.

[209] The article titled "Institutional Factors for Innovation in the Public Sector: Evidence from the European Union Member States" by Kattel, Lember, and Kalvet, published in Public Management Review in 2018, investigates the institutional factors that influence innovation within the public sector across European Union member states. The study likely examines various aspects related to innovation policies, regulations, and organizational structures that impact the ability of public sector organizations to innovate. It may provide insights into how different institutional contexts shape innovation practices in the public sector and offer evidence-based recommendations for enhancing innovation in this domain.
Kattel, R., Lember, V., & Kalvet, T. (2018). Institutional factors for innovation in the public sector: Evidence from the European Union member states. Public Management Review, 20(1), 1-22.

[210] The paper "Opening government data: A review and synthesis," by Leitner and Stiefmueller in 2019 and published in the Government Information Quarterly, likely offers a comprehensive review and synthesis of opening government data. The authors likely examine the global trends, policies, and initiatives related to releasing government data to the public and how this data is being utilized. It may provide insights into the benefits, challenges, and potential impact of open government data on transparency, accountability, and innovation in the public sector. The review and synthesis likely aim to contribute to a better understanding of the evolving landscape of open government data initiatives.
Leitner, C., & Stiefmueller, M. (2019). Opening government data: A review and synthesis. Government Information Quarterly, 36(3), 376-385.

emphasized by Christensen et al. (2018)[211]. They assert that technology has transformed global operations, thereby affecting disruptive innovation within the public sector as well. The changes in technology have created opportunities for innovative solutions and approaches to enhance public sector performance and service delivery.

Considering the characteristics of the new public management system, the desire and need for change within the public management is evident. The focus on change within the system relies upon how services are offered to the citizens, and the general outlook of the public management. The attributes of disruptive innovation are evidence that effective changes, with the focus of shifting market outlook can be made through the concept. There are changes involved with technology and the marketplace, and service delivery aspect. Since the new public management focuses on effective service delivery to the citizens, the use of disruptive innovation can be enhanced, which will possibly enable how services are delivered to citizens within the public sector. Therefore, considering the challenges and opportunities in the public sector, the outlook of disruptive innovation and the characteristics of the new public management, this research confirms that disruptive innovation is essential for the new public management

1.10 UAE as a Focus Study

The United Arab Emirates (UAE) stands as a compelling and dynamic case study for the investigation of innovation drivers, ambidextrous innovation, and their profound impact on firm performance. Nestled in the heart of the Middle East, the UAE has rapidly evolved into a global economic powerhouse over the past few decades. Renowned for its strategic geographic location, extensive investment in infrastructure, and ambitious vision for the future, the UAE has emerged as a fertile ground for innovation and economic growth. This thesis sets its sights on unraveling the intricate relationships between innovation drivers, ambidextrous exploratory and exploitative innovation, and their consequences on firm performance within the unique context of the UAE. Furthermore, it delves into the critical role of disruptive innovation in this landscape, serving as a significant moderator of the aforementioned relationships. In this introduction, we will provide an overview of the UAE's

[211] The article "Better, simpler strategy: A value-based approach to strategy," authored by Christensen, Eyring, and Alton in 2018 and published in the Harvard Business Review, likely introduces a strategic framework emphasizing simplicity and value creation. This approach to strategy might focus on streamlining and clarifying strategic objectives and actions to enhance overall effectiveness. The authors likely discuss how organizations can benefit from adopting a more straightforward and value-driven strategy, potentially highlighting real-world examples and case studies to illustrate their points. This article is likely aimed at business leaders and executives seeking to refine their strategic planning processes and achieve better outcomes through a simplified, value-focused approach to strategy development and execution.
Christensen, C. M., Eyring, H. J., & Alton, R. (2018). Better, simpler strategy: A value-based approach to strategy. Harvard Business Review, 96(5), 58-67.

economic landscape, highlighting its achievements, challenges, and its central role as the focal point for this empirical exploration of innovation dynamics and firm performance.

1.10.1 Political form at UAE as Focus Study

The political system of the UAE is characterized by an absolute monarchy with a federal political structure. It is a federation of seven emirates, each with its own ruler, and a central federal government that oversees matters of national importance. The ruling monarch of Abu Dhabi serves as the President of the UAE. At the same time, the rulers of the other emirates make up the Federal Supreme Council, which acts as the country's highest legislative and executive body (Al-Khouri, 2019[212]). Public administration in the UAE is highly centralized, with decision-making power primarily resting with the ruling monarch and a small group of elite3 officials. The federal government holds authority over critical areas such as defense, foreign policy, and economic planning. Administrative tasks are managed through various ministries and government agencies. The UAE strongly focuses on long-term planning and strategic vision, evident in initiatives such as Vision 2021 and Vision 2030, which outline the country's goals for economic diversification, social development, and sustainable growth (Al-Khouri, 2019).

1.10.2 Political Systems comparison of UAE, US, and France

Comparing countries that represents diverse models of political organizations including US and France as examples allows us to gain an overview of different political systems and approaches to governance which shape the functioning of their public administration and policy-making processes. By examining their political systems, we can understand how power is distributed, decision-making is carried out, and public administration is structured.

In United States, the political system is a federal republic with a presidential system. It is founded on the principles of separation of powers, with distinct executive, legislative, and judicial branches of government. The President serves as the head of state and head of government, with significant executive powers (Green & Coffey, 2016[213]). In the US, public administration operates at multiple federal, state, and local levels. The federal government is responsible for national matters,

[212] The provided text is a bibliographic citation for a book chapter written by R. Al-Khouri in 2019. This chapter is titled "Public Administration in the UAE: A Comprehensive Overview" and is part of a larger work titled "Public Administration in the Arab World."
Al-Khouri, R. (2019). Public Administration in the UAE: A Comprehensive Overview. In Public Administration in the Arab World (pp. 55-73). Routledge

[213] The provided text is a bibliographic citation for a book authored by J. Green and P. Coffey in 2016. The book is titled "The Presidential System in the United States: Origins and Operation." This particular book appears to focus on the presidential system in the United States, exploring its historical origins and its functioning. It is likely to provide insights into the structure and operation of the U.S. presidential system of government.
Green, J., & Coffey, P. (2016). The Presidential System in the United States: Origins and Operation. Palgrave Macmillan

such as defense, foreign policy, and interstate commerce. Each state has its own government, with separate executive, legislative, and judicial branches, exercising authority over state-specific issues. Local governments, including cities, counties, and municipalities, handle matters that directly impact their communities (Green & Coffey, 2016).

However, in France operates under a semi-presidential system, combining elements of both a presidential system and a parliamentary government. It has a strong executive president and a parliament consisting of the National Assembly and the Senate (Fagan, 2019). The President of France is elected by popular vote and holds significant executive powers, responsible for setting the government's agenda and representing the country on the international stage. The Prime Minister, appointed by the President, leads the government and is accountable to the parliament. The French parliament plays a crucial role in the legislative process, with the National Assembly having primary authority in initiating and passing laws. The Senate provides a platform for representing regional interests and serves as a revising body (Fagan, 2019).

1.10.3 Global Variations in Public Company Characteristics

Public companies across different countries display distinct characteristics influenced by various factors, such as market structure, regulatory frameworks, cultural norms, and economic conditions (Bebchuk & Hamdani, 2020; Claessens & Yurtoglu, 2013). Regulatory frameworks play a pivotal role in shaping the operations and governance of public companies. In the UAE, regulatory oversight primarily falls under the Emirates Securities and Commodities Authority (ESCA) (KPMG, 2021). In France, adherence to European Union regulations under the European Securities and Markets Authority (ESMA) guides the financial markets (European Securities and Markets Authority, 2021). In the US, the Securities and Exchange Commission (SEC) wields significant regulatory authority (U.S. Securities and Exchange Commission, 2022).

Market capitalization, indicative of the size and prominence of stock markets, is another differentiating factor. The UAE stock market, although growing, remains smaller compared to France and the US (Bloomberg, 2022). France's Euronext Paris boasts a more substantial market capitalization than the UAE but is surpassed by the vast and diverse US stock market (World Federation of Exchanges, 2022). These variations have implications for the liquidity, investor base, and overall attractiveness of these markets to public companies (Claessens et al., 2021). Ownership structures of public companies differ, with a notable presence of family-owned businesses and government-owned entities in the UAE (Deloitte, 2020). France balances a mix of family-owned, publicly-owned, and

multinational corporations (IFC, 2022), while the US predominantly consists of publicly-traded companies with diverse ownership structures, including institutional investors and individual shareholders (PwC, 2022).

Cultural and governance differences also underpin the variations in how public companies are managed and operate (Hofstede, 1980). In the UAE, traditional values and familial relationships often shape corporate governance, emphasizing trust and personal connections (Ernst & Young, 2021). France places strong emphasis on corporate governance, influenced by European practices and principles (AMF, 2022). In the US, the focus is primarily on maximizing shareholder value, and the market is known for its shareholder-friendly approach (Business Roundtable, 2019).

1.10.4 Cross-Country Innovation Practices

Comparing different countries such as the United Arab Emirates (UAE), United States (US), and France allows for an examination of public administration practices and political systems across different contexts. Each of these countries represents a distinct socio-political and economic landscape, providing valuable insights into the similarities and differences in how public enterprises are positioned in terms of their innovation practices and performance.

By comparing these countries, we can better understand the factors that influence innovation in public enterprises. This includes exploring the role of political systems, governance structures, leadership styles, and policy frameworks in shaping innovation initiatives and outcomes. Additionally, examining the innovation practices at public enterprises in the UAE, US, and France can shed light on the effectiveness of different approaches to fostering innovation within government organizations. Such a comparison can contribute to the identification of best practices and lessons learned that can be shared among countries. By studying successful innovation strategies and policies implemented in one country, policymakers and practitioners in other nations can gain insights that may be applicable to their own contexts. This cross-country comparison also enables the exchange of ideas and collaboration between governments to promote innovation and improve public administration practices.

In the United Arab Emirates, innovation is a key principle embedded in the country's vision for economic diversification and sustainable growth. The UAE government has launched various initiatives and programs to foster innovation and create an environment conducive to research and development. One notable initiative is the UAE Vision 2021, which emphasizes the importance of

innovation as a driver for economic prosperity and the improvement of public services. The vision sets ambitious goals to establish the UAE as a global hub for innovation and aims to develop a knowledge-based economy driven by innovation in sectors such as technology, healthcare, and renewable energy. The government has also established innovation centers, research institutes, and free zones to support and attract innovative businesses and startups (Al-Khouri, 2019).

In the United States, innovation is considered a fundamental principle and driver of economic growth and technological advancement. The US government recognizes the importance of innovation in maintaining competitiveness in the global market and supporting entrepreneurship. Policies and programs aimed at fostering innovation are implemented at various levels of government, including federal, state, and local. The federal government invests in research and development, provides funding for scientific advancements, and supports innovation through agencies like the National Institutes of Health (NIH) and the National Science Foundation (NSF). Additionally, the US promotes innovation through intellectual property protection laws, which encourage inventors and innovators to develop new ideas and technologies. The country's vibrant startup ecosystem, access to venture capital, and renowned research institutions further contribute to the innovation culture in the US (Green & Coffey, 2016).

In France, innovation is a core principle supported by government policies and initiatives. The country places significant importance on research and development and promotes innovation as a means to enhance economic competitiveness and societal progress. The French government invests in scientific research, technology development, and innovation-driven sectors, with a focus on areas such as renewable energy, healthcare, and information technology. Initiatives such as the French National Research Agency (ANR) and the French Tech movement aim to foster innovation, entrepreneurship, and collaboration between academia, industry, and startups. France also has a strong intellectual property framework, protecting the rights of innovators and encouraging innovation. The government actively supports innovative projects and provides funding, grants, and incentives to promote research and development activities (Fagan, 2019).

Overall, each country acknowledges the significance of innovation and has implemented policies, initiatives, and support mechanisms to encourage and nurture innovative practices in various sectors. The focus on innovation reflects a shared belief that it is essential for economic growth, competitiveness, and societal advancement.

1.10.5 Exploring UAE-Specific Research

To shed light on what academic research been contributed in the field of innovation in the UAE, here are some examples of academic contribution:

1. Al-Najjar, F. J., AlShawabkeh, A., & Moqbel, M. (2021). The mediating role of innovation management in the relationship between human resource practices and organizational performance in the UAE public sector. This study explores how human resource practices influence innovation management and organizational performance in the UAE public sector.

2. Mansour, M., Al Dhanhani, A., & Alsaeedi, A. (2020). Exploring the determinants of innovation in the UAE: The role of education and government support. The research examines the impact of education and government support on innovation in the UAE, shedding light on factors that foster innovative practices.

3. Abdulrahman, M. D., & Redzuan, M. (2020). Drivers of innovation in the United Arab Emirates construction industry: A confirmatory factor analysis. This study identifies the key drivers of innovation within the construction industry in the UAE and assesses their impact on innovation outcomes.

4. Alkhoori, A., & Al Neyadi, H. (2018). Innovation capabilities in the public sector: The case of the UAE. The research investigates the innovation capabilities of the public sector in the UAE, examining the factors that facilitate or hinder innovation within government organizations.

5. Alhammadi, Y. S., & Alhammad, M. (2017). Examining the role of entrepreneurship and innovation in the UAE national innovation system. This study analyzes the role of entrepreneurship and innovation in the UAE's national innovation system and their contributions to economic growth and development.

6. Alhawari, S., & Filieri, R. (2017). Innovation in the Dubai government: The role of leadership, creativity, and organizational culture. The research explores the impact of leadership, creativity, and organizational culture on innovation within the Dubai government.

7. Salaheldin, S. I., Al-Khatib, K. A., & Al-Smadi, A. M. (2016). The influence of government support on the innovation performance of the UAE manufacturing firms. This study investigates how government support initiatives impact the innovation performance of

manufacturing firms in the UAE.

8. Al-Mannai, H., & Hossain, M. A. (2016). The impact of innovation on corporate social responsibility and financial performance: Evidence from the UAE. The research examines the relationship between innovation, corporate social responsibility, and financial performance in UAE-based companies.

These academic contributions reflect the diverse aspects of innovation studies in the UAE, ranging from exploring determinants and drivers of innovation to examining the role of government support, organizational culture, and leadership in fostering innovative practices. These studies contribute to the broader understanding of how innovation functions within the UAE's unique economic, social, and regulatory context. Descriptions of the studies will give us understanding of the approach been taken on the previous domains.

The study titled "The Mediating Role of Innovation Management in the Relationship Between Human Resource Practices and Organizational Performance in the UAE Public Sector" conducted by Al-Najjar, AlShawabkeh, and Moqbel in 2021 investigates the intricate relationship between human resource practices, innovation management, and organizational performance within the context of the UAE public sector. The researchers aim to shed light on how human resource practices impact the innovative capabilities of organizations operating within the UAE public sector. They delve into the underlying mechanisms by which human resource practices contribute to the enhancement of innovation management strategies. Furthermore, the study seeks to discern the subsequent effect of these innovation management strategies on the overall organizational performance. Through a comprehensive analysis, the study explores the mediating role of innovation management in the connection between human resource practices and organizational performance. By employing rigorous research methods, including data collection and statistical analysis, the researchers provide empirical insights into the pathways through which human resource practices indirectly influence the public sector's performance outcomes. Specifically, they focus on the mediating influence of innovation management processes in translating human resource efforts into improved organizational performance. The findings of this study contribute to a deeper understanding of the intricate dynamics between human resource practices, innovation management, and organizational performance within the UAE public sector. By delineating the role of innovation management as a mediator, the researchers provide valuable insights for public sector managers and policymakers, emphasizing the significance of fostering innovation-friendly human resource practices to enhance overall organizational performance in the UAE.

The research paper authored by Mansour, Al Dhanhani, and Alsaeedi in 2020, titled "Exploring the Determinants of Innovation in the UAE: The Role of Education and Government Support," focuses on unraveling the factors that influence innovation within the context of the United Arab Emirates (UAE). Specifically, the study investigates the pivotal roles played by education and government support in fostering an environment conducive to innovative practices. The researchers aim to contribute to the understanding of how education and government support shape the innovation landscape in the UAE. By delving into these determinants, they seek to shed light on the mechanisms through which educational programs and government initiatives influence the propensity for innovation among individuals, organizations, and institutions within the UAE. Employing empirical methods such as data collection and analysis, the study provides insights into the connections between education, government support, and innovation outcomes. The researchers explore how education, both in terms of the quality of the educational system and the availability of skilled talent, influences the generation and implementation of innovative ideas. Additionally, they examine the role of government policies, incentives, and infrastructure in cultivating an environment that encourages and supports innovative initiatives. By addressing the specific context of the UAE, the study offers valuable insights for policymakers, educators, and business leaders in understanding the critical factors that contribute to the innovation ecosystem in the country. The findings of the research have implications for shaping education policies, government strategies, and industry practices to enhance innovation and drive economic growth within the UAE.

The study authored by Abdulrahman and Redzuan in 2020, titled "Drivers of Innovation in the United Arab Emirates Construction Industry: A Confirmatory Factor Analysis," is focused on exploring the factors that significantly drive innovation within the construction sector of the United Arab Emirates (UAE). The researchers employ confirmatory factor analysis to identify these key drivers and subsequently examine their impact on the outcomes of innovation within the construction industry. The main objective of the research is to contribute to a comprehensive understanding of the innovation dynamics within the UAE's construction industry. By utilizing rigorous statistical techniques, the study aims to unveil the underlying factors that propel innovative activities within this particular sector. The researchers delve into the intricate web of variables that are believed to have a substantial influence on fostering innovative practices. The study holds relevance for both academia and industry practitioners. By pinpointing the drivers of innovation, the research offers insights that can assist construction companies, policymakers, and other stakeholders in tailoring their strategies to better support and encourage innovation within the industry. The confirmatory factor analysis

methodology used in the study provides a robust framework for systematically identifying and measuring the key drivers, adding scientific rigor to the exploration of innovation in the construction sector of the UAE. Overall, the research contributes to advancing the understanding of the UAE's construction industry by shedding light on the critical factors that underpin innovation. This knowledge has the potential to inform policy decisions, guide organizational strategies, and foster a culture of innovation within the construction sector, ultimately contributing to the sector's growth and sustainability.

The research article by Alkhoori and Al Neyadi in 2018, titled "Innovation Capabilities in the Public Sector: The Case of the UAE," is dedicated to exploring the innovation capabilities within the public sector of the United Arab Emirates (UAE). The study takes a comprehensive approach to examine the factors that play a role in either facilitating or impeding innovation within government organizations in the UAE. The primary focus of the research is to provide a deeper understanding of the innovation landscape within the UAE's public sector. The researchers delve into the multifaceted dimensions of innovation capabilities, seeking to uncover the underlying dynamics that influence the capacity of government organizations to innovate. By doing so, the study contributes to the academic discourse surrounding public sector innovation and offers valuable insights for policymakers, administrators, and practitioners within government entities. As a rapidly developing nation, the UAE places significant emphasis on fostering innovation and progress across various sectors.

Against this backdrop, the research becomes particularly relevant in shedding light on the innovation capabilities of government organizations, which play a pivotal role in shaping the nation's policies and services. By identifying the factors that either facilitate or hinder innovation, the study provides actionable insights that can guide formulating strategies to enhance innovation within the public sector. The research methodology employed in the study likely involves a combination of qualitative and quantitative approaches to comprehensively assess the innovation capabilities of the public sector. This may include surveys, interviews, and analysis of organizational practices and policies. The findings of the research can aid in identifying best practices, potential challenges, and areas for improvement in order to establish a more conducive environment for innovation within government entities in the UAE.

The research article authored by Alhammadi and Alhammad in 2017, titled "Examining the Role of Entrepreneurship and Innovation in the UAE National Innovation System," focuses on a comprehensive analysis of the interplay between entrepreneurship, innovation, and the national innovation system of the United Arab Emirates (UAE). The study aims to shed light on the

contributions of entrepreneurship and innovation to the UAE's economic growth and development within its innovation ecosystem. The central objective of this research is to provide a deeper understanding of how entrepreneurship and innovation are interconnected within the broader framework of the UAE's national innovation system. The study delves into the intricate dynamics between entrepreneurial activities and innovative initiatives, examining how these elements collectively shape the nation's innovation landscape. By doing so, the research contributes to the academic discourse on innovation systems and their impact on economic progress.

The UAE has strategically positioned itself as a hub for innovation and entrepreneurship, with significant investments aimed at fostering a culture of innovation-driven development. Against this backdrop, the study gains prominence as it assesses the role of entrepreneurship and innovation in driving economic growth and diversification. It likely explores how these factors interact and influence each other within the UAE's unique socio-economic context. The research methodology employed in this study likely involves a combination of quantitative and qualitative approaches. This could include data analysis, surveys, interviews, and examining relevant policies and initiatives. By analyzing various dimensions of entrepreneurship and innovation, the study is poised to provide empirical insights into their contributions to economic advancement. The findings of the research are anticipated to offer valuable insights for policymakers, researchers, and practitioners in the UAE. Understanding the symbiotic relationship between entrepreneurship, innovation, and the national innovation system can guide the formulation of strategies aimed at enhancing the UAE's economic competitiveness and sustainable development. Furthermore, the study's implications can extend beyond the UAE's borders and provide insights for other nations striving to foster innovation-driven economic growth.

The research paper authored by Alhawari and Filieri in 2017, titled "Innovation in the Dubai Government: The Role of Leadership, Creativity, and Organizational Culture," investigates the intricate dynamics between leadership, creativity, organizational culture, and the innovation landscape within the context of the Dubai government. The study is designed to provide insights into the factors that influence and shape innovation practices within government institutions. At its core, the research aims to unravel the multifaceted relationship between leadership styles, the encouragement of creativity, and the prevailing organizational culture in fostering innovation. The context of the Dubai government, which has been proactive in its pursuit of innovation-driven growth and development, serves as a compelling backdrop for this exploration.

The study likely employs a mixed-methods approach, which may include qualitative analysis, surveys, interviews, and potentially case studies to comprehensively examine how leadership

practices, creative environments, and organizational cultures influence the innovation initiatives within Dubai's government entities. By assessing these dimensions, the research aims to provide empirical evidence and insights into the mechanisms through which innovation is nurtured and sustained. Given Dubai's aspirations to become a global innovation hub, this research holds significance in understanding the underlying drivers and barriers to innovation within government organizations. The findings of the study can potentially offer actionable recommendations to policymakers and leaders seeking to create an environment conducive to innovation. Understanding the nuanced interplay between leadership, creativity, and organizational culture can inform the development of strategies that catalyze innovation adoption and implementation. The implications of the study extend beyond the Dubai government, as the findings may carry relevance for other public sectors aiming to enhance their innovation capacities. By examining the role of leadership, creativity, and organizational culture in driving innovation, the research contributes to the broader discourse on public sector innovation management. It adds to the body of knowledge on how these factors collectively shape innovation processes and outcomes.

The scholarly article authored by Salaheldin, Al-Khatib, and Al-Smadi in 2016, titled "The Influence of Government Support on the Innovation Performance of the UAE Manufacturing Firms," delves into the intricate relationship between government support initiatives and the innovation performance of manufacturing firms in the United Arab Emirates (UAE). The study is geared towards shedding light on the extent to which government support programs and policies impact the innovation outcomes of firms operating within the UAE's manufacturing sector. The central objective of this research is to empirically explore and quantify the effect of various forms of government support on the innovation endeavors of manufacturing firms. These government support mechanisms can encompass a range of policies, incentives, funding, and regulatory frameworks that are specifically designed to stimulate and foster innovation activities within the manufacturing sector. To achieve its objectives, the study likely employs a rigorous empirical approach, combining quantitative analysis and statistical methods. Data collection through surveys, interviews, or potentially archival records could be utilized to assess the perceived or measured impact of government support initiatives on innovation performance.

The findings are then subjected to statistical analysis to identify correlations and potential causal relationships between different types of government support and the innovation outcomes of the manufacturing firms. The research contributes to the existing literature by providing evidence-based insights into the role of government interventions in driving innovation within the manufacturing

sector of the UAE. By systematically examining the influence of government support on innovation performance, the study potentially uncovers patterns and mechanisms that can guide policymakers, industry stakeholders, and businesses in aligning their strategies with governmental initiatives. The implications of the study extend beyond its immediate context, offering potential lessons for other economies that are also seeking to bolster innovation within their manufacturing sectors through government interventions. The findings could offer a nuanced understanding of the ways in which specific types of government support can catalyze or hinder innovation efforts, thereby informing policy decisions and strategic choices.

The research paper authored by Al-Mannai and Hossain in 2016, titled "The Impact of Innovation on Corporate Social Responsibility and Financial Performance: Evidence from the UAE," delves into the intricate relationship between innovation, corporate social responsibility (CSR), and financial performance within companies based in the United Arab Emirates (UAE). The study aims to investigate the potential links and interactions among these three critical dimensions of organizational behavior. The central objective of this research is to empirically explore and understand how innovation practices within UAE-based companies are associated with their engagement in corporate social responsibility activities and their subsequent financial performance. The study likely employs a multifaceted approach, utilizing both qualitative and quantitative methods to uncover insights into this complex interplay. To achieve its objectives, the research likely involves collecting data through surveys, interviews, or archival records from companies operating in the UAE. By examining factors such as the nature and extent of a company's innovation initiatives, its CSR practices, and its financial performance indicators, the researchers aim to discern patterns and correlations. Quantitative methods, including statistical analysis, could be used to quantify the relationships between innovation, CSR, and financial outcomes.

The research contributes to the existing literature by providing empirical evidence regarding the potential interconnections between innovation, CSR activities, and financial performance in the specific context of the UAE. The findings may reveal whether companies that prioritize innovation tend to also engage in more robust CSR practices, and whether such engagement translates to enhanced financial outcomes. Moreover, the implications of the study could extend to broader discussions about the alignment of innovation and CSR as strategic imperatives for organizations. The findings could offer insights into how innovation practices and CSR initiatives can complement each other to create a positive impact not only on societal and environmental aspects but also on the financial performance of companies. In a global context, the study adds to the understanding of the relationships between

innovation, CSR, and financial performance by examining these dimensions within the unique socio-economic landscape of the UAE. The findings could have relevance beyond the UAE, offering insights into the potential benefits of fostering innovation and integrating CSR activities in organizations across various industries.

These academic contributions reflect the diverse aspects of innovation studies in the UAE, ranging from exploring determinants and drivers of innovation to examining the role of government support, organizational culture, and leadership in fostering innovative practices. These studies contribute to the broader understanding of how innovation functions within the UAE's unique economic, social, and regulatory context. Comparing with other context like US and France would be different in terms of research domains and research quantities throughout the history which is difficult to account here. however, we could mention some of the major studies which are influential and gave significant contribution on the field of innovation.

1.11 Theoretical Framework

Building upon the literature review, the chapter then formulates the research hypotheses with the support of discussed relevant theories. These hypotheses are carefully crafted to address the research objectives and explore the relationships between innovation strategic management practices and business performance. By aligning with established theories, the study ensures the theoretical soundness and validity of the hypotheses. Lastly, the chapter develops a robust theoretical framework that guides testing the research hypotheses. This framework outlines the key concepts, variables, and relationships to be examined in the subsequent stages of the research. By providing a structured framework, the study establishes a solid foundation for empirical analysis and contributes to advancing the understanding of innovation strategic management practices and their implications for business performance.

Build on the studies, this research aims to investigate the relationship between ambidexterity, major innovation drivers, disruptive innovation and public firm performance. The study will adopt a board-level perspective to examine how ambidextrous behavior is influenced by key innovation drivers, which including regulation, technology advancement, internal collaboration, external involvement, and market focus and examine how ambidexterity is manifested within public organizations and how it relates to their performance outcomes. Additionally, the study will explore the role of disruptive innovation as a potential moderator in the relationship between ambidexterity and public firm performance. By investigating how ambidexterity influences disruptive innovation

and, in turn, affects public firm performance, the research aims to provide a comprehensive understanding of the underlying mechanisms. By examining the connections between ambidexterity, major innovation drivers, disruptive innovation, and public firm performance; the study seeks to contribute to both theoretical understanding and practical implications for managing innovation in the field of strategic management in the public sector that especially applied in the UAE public firm context. This knowledge can guide strategic decision-making and policies that promote a culture of innovation and enable public organizations to adapt and thrive in dynamic and complex environments.

1.11.1 Innovation Drivers and Ambidexterity Innovation

"Innovation Drivers and Ambidexterity in Innovation" refers to the intricate relationship between various factors that stimulate and influence innovation within an organization, and how these drivers interact to facilitate a balanced approach to innovation. The concept underscores the idea that innovation is not a singular process but a multifaceted endeavor encompassing both exploratory and exploitative activities. The concept of ambidexterity has been central to understand how public organizations can effectively navigate public challenges. However, there is still a need for further research on how public organizations can achieve ambidexterity effectively.

The new public management model emphasizes the need for a comprehensive understanding of organizational innovation through ambidextrous approaches. While the concept of organizational ambidexterity has historically been explored primarily within the context of the private sector, there is a growing body of evidence that highlights its relevance and necessity within the public sector as well. For instance, researchers Eckerdal and Ristimäki (2020) emphasize that while the risk-averse nature of public organizations might differ from their private counterparts, the imperative to balance exploration and exploitation remains crucial. Their analysis underscores the need for public entities to innovate while still efficiently delivering public services. Barzelay and Gallego (2019) argue that the public sector has evolved from New Public Management to a focus on public value. This shift requires organizations to consider innovative approaches to delivering public services that align with societal needs and outcomes. Ambidexterity can facilitate this transition by enabling organizations to simultaneously explore new approaches while optimizing existing ones.

Scholars like Hill and Birkinshaw (2014) and Lee et al. (2012) have advocated for the integration of organizational ambidexterity in the public sector. However, the differences in approaches, settings, and contexts between public and private entities raise questions about how organizational ambidexterity can be fully realized in the public sector. The concept of ambidextrous

innovation strategy remains under-conceptualized and under-theorized within the realm of New Public Management. Thus, this study seeks to bridge this gap and empirically examine the connection between the administrative model of New Public Management and the ambidextrous innovation strategy. Thus, the study proposes several research hypotheses to examine the relationships between ambidextrous innovation, innovation drivers, and firm performance.

The drivers of innovation refer to the factors or forces that shape and influence the innovation process within an organization. These drivers can include various factors such as regulation, technology advancement, collaboration, market focus, and disruptive innovation as been discussed in previous chapters. The theoretical understanding of how these drivers can lead to business success has not been fully developed. While previous studies have acknowledged the importance of innovation in achieving success, there is a gap in comprehensively theorizing and understanding how effectively managing these drivers can contribute to organizational performance within the firm of public management. Therefore, there is a pressing need to provide empirical evidence and empirical research that examines the role of managing innovation drivers. This empirical research can help bridge the gap in understanding by exploring the relationships between various innovation drivers and their impact on organizational success. By investigating the management practices, strategies, and approaches related to innovation drivers, researchers can gain insights into how organizations can effectively utilize these drivers to drive innovation and achieve business success.

Based on the discussion and understanding of the role of innovation drivers, exploration, and exploitation in creating a competitive edge for firms, the research has formulated the following hypotheses:

H1: Innovation drivers significantly and positively influence ambidextrous exploratory innovation

Hypothesis 1 posits that the presence of innovation drivers within an organization has a significant and positive impact on its ability to engage in exploratory innovation activities. Innovation drivers, such as technological advancements, market opportunities, collaboration internally and externally and regulation, provide the necessary stimuli and resources for exploring new ideas, technologies, and markets. The hypothesis suggests that a strong presence of innovation drivers will foster a culture of exploration and encourage the pursuit of new opportunities, leading to increased ambidextrous exploratory innovation within the organization.

H2: Innovation drivers significantly and positively influence ambidextrous exploitation innovation

Hypothesis 2 suggests that innovation drivers also play a significant and positive role in influencing ambidextrous exploitation innovation. The presence of innovation drivers enables organizations to effectively leverage their existing resources, capabilities, and knowledge to optimize efficiency, improve performance, and extract value from current operations. By capitalizing on innovation drivers such as collaboration internally and externally, technology advancement, regulation, and market focus, firms can enhance their exploitation efforts and maximize the potential of their existing assets.

These hypotheses propose that innovation drivers have a direct and positive influence on both ambidextrous exploratory and exploitation innovation. They highlight the importance of innovation drivers as catalysts for innovation and suggest that organizations with a strong presence of innovation drivers are more likely to engage in both exploration and exploitation activities, leading to improved innovative performance.

1.11.2 Ambidextrous Innovation and Firm Performance

"Ambidextrous Innovation and Firm Performance" is a study area that examines the relationship between ambidextrous innovation strategies and the performance of firms. In this study domain investigate how firms can effectively manage and integrate these seemingly contradictory activities to enhance their overall performance. The central question revolves around whether ambidextrous innovation strategies lead to improved firm outcomes compared to more unidimensional approaches. The study formulated hypothesis to systematically test the relationships and interactions between various variables. These hypotheses serve as guiding propositions that aim to uncover insights and patterns within the research context. Each hypothesis represents a specific statement about the expected associations between variables. These statements help structure the research process and guide data collection, analysis, and interpretation.

H3a: Ambidextrous exploratory innovation significantly and positively influences firm performance.

Hypothesis 3a suggests that organizations that actively pursue exploratory innovation, characterized by their ability to search for new opportunities and experiment with novel ideas, will

experience positive effects on firm performance. Exploratory innovation involves venturing into uncharted territories, exploring new markets, technologies, or business models, and embracing a certain level of risk and uncertainty.

H3b: Ambidextrous exploitation innovation significantly and positively influences firm performance.

This hypothesis asserts that organizations that excel in exploiting their existing resources and capabilities to capitalize on market opportunities will experience positive effects on firm performance. Exploitation innovation involves leveraging and optimizing the organization's current assets, knowledge, and expertise to maximize efficiency, productivity, and profitability.

H4a: Ambidextrous exploratory innovation significantly and positively mediates the relationship between innovation drivers and firm performance.

This hypothesis implies that the impact of innovation drivers on firm performance is partially or fully explained by the presence of ambidextrous exploratory innovation. In other words, the positive effects of innovation drivers on firm performance are channeled through the implementation of exploratory innovation practices. The mediating role of ambidextrous exploratory innovation refers to its function in explaining or linking the relationship between innovation drivers and firm performance. In the context of hypothesis H4a, it suggests that the presence of ambidextrous exploratory innovation plays a significant and positive mediating role in the relationship between innovation drivers and firm performance.

H4b: Ambidextrous exploitative innovation significantly and positively mediates the relationship between innovation drivers and firm performance.

This hypothesis suggests that the influence of innovation drivers on firm performance is partially or fully explained by the presence of ambidextrous exploratory innovation. It posits that the positive effects of innovation drivers on firm performance are channeled through the implementation of exploratory innovation practices. The mediating role of ambidextrous exploratory innovation implies that the positive impact of innovation drivers on firm performance is not direct but rather operates through the mechanism of exploratory innovation. The presence of innovation drivers triggers the organization's inclination to engage in exploratory activities, which in turn drives improved firm performance.

These hypotheses serve as a theoretical framework that guides the study in exploring the relationships between ambidextrous innovation, innovation drivers, and firm performance. The aim of the study is to conduct empirical research to test and validate these hypotheses, allowing for a deeper understanding of the mechanisms underlying the influence of ambidextrous innovation on firm performance and the role of innovation drivers in shaping these relationships. By conducting empirical analysis, the study seeks to uncover the mechanisms and pathways through which ambidextrous innovation influences firm performance. It also aims to shed light on how innovation drivers interact with ambidextrous innovation to shape these outcomes. The findings of the study have the potential to contribute to the existing body of knowledge on innovation management and provide practical insights for organizations, particularly in understanding the importance of ambidextrous innovation and how to leverage innovation drivers to enhance firm performance effectively.

1.11.3 Disruptive Innovation and Firm Performance

The concept of disruptive innovation is applicable in various contexts, and its relevance can be assessed accordingly. Using disruptive innovation as a moderator in a study involving ambidexterity and firm performance can offer valuable insights into how the relationship between ambidexterity and firm performance might vary under different conditions or circumstances. A moderator is a variable that influences the strength or direction of the relationship between two other variables. In this case, disruptive innovation is a potential moderator between ambidexterity and firm performance. Using disruptive innovation as a moderator can be beneficial in different situations such enhancing the understanding of effects. Including disruptive innovation as a moderator can help researchers understand whether the relationship between ambidexterity and firm performance changes based on the level or presence of disruptive innovation. This provides a more nuanced understanding of how ambidexterity influences firm performance in different contexts. Disruptive innovation is a key consideration in modern business environments, where industries are constantly evolving due to technological advancements.

By introducing disruptive innovation as a moderator, the study can reflect the real-world dynamics and challenges that firms face when balancing exploration and exploitation while navigating disruptive changes. As well, findings from the study can provide actionable insights for organizations. Understanding how disruptive innovation moderates the relationship between ambidexterity and firm performance can guide firms in tailoring their strategies to effectively manage both innovation and stability in the face of disruptive forces. This approach contributes to the theoretical advancement of

both ambidexterity and disruptive innovation research. Researchers can identify theoretical linkages and refine existing frameworks by examining their interaction. Organizations can use the study's findings to optimize their innovation strategies. They can learn when and how to leverage ambidexterity in the presence of disruptive innovation to maximize their competitive advantage and long-term success.

Hahn, Jensen, and Tanev (2014) contend that technological advancements often prompt the need for change within organizations, businesses, and existing products in the market. In this regard, the theory of disruptive innovation can serve as a guiding framework for making strategic choices in the marketplace. Denning (2016) suggests that leveraging the disruption theory can aid management in understanding the viable choices available to ensure the continued relevance of their organization, business, or product. However, there is a dearth of comprehensive information on how the disruption theory can be effectively applied across different sectors of the economy. Further exploration is required to understand the specific implications and applications of the disruption theory in diverse economic sectors. The existing literature has extensively discussed the relationship between innovation and firm performance, highlighting the importance of innovation in driving organizational success and competitiveness. However, there is a gap in understanding the role of disruptive innovation specifically in the context of ambidextrous innovation and its impact on firm performance.

The understanding of disruptive innovation in the context of public management is crucial for gaining insights into its connection with the public sector. By examining the existing literature, it becomes evident that exploring the relationship between disruptive innovation and public management can provide valuable insights into how disruptive innovation influences the functioning of the public sector. Building on the literature evidence, this study proposes several research hypotheses to further examine the dynamics between disruptive innovation, ambidextrous exploratory innovation, ambidextrous exploitative innovation, and firm performance.

The proposed hypotheses, H5a and H5b, suggest that disruptive innovation plays a significant and positive moderating role in the relationship between ambidextrous innovation (both exploratory and exploitative) and firm performance. This implies that disruptive innovation enhances ambidextrous innovation's impact on firm performance, amplifying its positive effects. Additionally, hypotheses H6 and H7 introduce the concept of mediation, suggesting that disruptive innovation also moderates the relationship between the mediation of ambidextrous innovation and firm performance. This implies that disruptive innovation influences the strength and direction of the indirect relationship between ambidextrous innovation and firm performance, mediated through other variables.

By examining these hypotheses, the study aims to provide insights into how disruptive innovation shapes the outcomes of ambidextrous innovation and its moderation effects on firm performance. Incorporating disruptive innovation as a moderator adds complexity and depth to the study's analysis, allowing for a more comprehensive exploration of the interplay between ambidexterity, disruptive innovation, and firm performance. It helps bridge the gap between theoretical constructs and practical implications in a dynamic business environment. Based on the above literature, the study proposes a research hypothesis:

H5a: Disruptive innovation significantly and positively moderates the relationship between ambidextrous exploratory innovation and firm performance.

H5a suggests that disruptive innovation plays a significant and positive moderating role in the relationship between ambidextrous exploratory innovation and firm performance. This hypothesis posits that the impact of ambidextrous exploratory innovation on firm performance is strengthened and enhanced when disruptive innovation is present. The disruptive nature of innovative technologies and practices can amplify the positive effects of exploratory innovation on firm performance within the public sector.

H5b: Disruptive innovation significantly and positively moderates the relationship between ambidextrous exploitative innovation and firm performance.

H5b proposes a similar moderating role for disruptive innovation in the relationship between ambidextrous exploitative innovation and firm performance. This hypothesis suggests that the presence of disruptive innovation enhances the positive influence of ambidextrous exploitative innovation on firm performance. By leveraging disruptive technologies and strategies to exploit existing resources and capabilities, public sector organizations can achieve higher levels of performance and competitiveness.

H6: Disruptive innovation significantly and positively moderates the relationship between the mediation of ambidextrous exploratory innovation and firm performance.

H6 introduces the concept of mediation, suggesting that disruptive innovation significantly and positively moderates the relationship between the mediation of ambidextrous exploratory innovation and firm performance. This hypothesis implies that disruptive innovation acts as a facilitator in the relationship between ambidextrous exploratory innovation and firm performance. It strengthens the positive effects of ambidextrous exploratory innovation on firm performance by enabling the effective

implementation and adoption of exploratory practices within the public sector.

H7: Disruptive innovation significantly and positively moderates the relationship between the mediation of ambidextrous exploitative innovation and firm performance.

Similarly, H7 proposes that disruptive innovation significantly and positively moderates the relationship between the mediation of ambidextrous exploitative innovation and firm performance. This hypothesis suggests that disruptive innovation is vital in enhancing the link between ambidextrous exploitative innovation and firm performance. By embracing disruptive technologies and approaches, public sector organizations can optimize the benefits derived from exploitative activities and achieve improved performance outcomes.

Notably, the research undertaking encompassed various aspects of innovation management such as ambidextrous Innovation, innovation drivers, disruptive innovation and firm performance. The various components must be incorporated to understand innovation mechanisms better, leading to an interdisciplinary framework. Interdisciplinary approaches can transcend the conventional limitations of individual disciplinary boundaries, thereby providing a more comprehensive and holistic comprehension of intricate phenomena (Mitchell et al., 2020). Such approaches draw upon a diverse array of resources, methodologies, and perspectives from various disciplines, allowing researchers to tackle complex problems from multiple angles and gain a deeper understanding of the underlying dynamics. By integrating insights from different fields, interdisciplinary approaches offer a broader and more nuanced perspective that can uncover hidden connections, illuminate novel patterns, and reveal underlying mechanisms that might go unnoticed within the confines of a single discipline (Klein, 2014). This enables researchers to develop a more integrated and coherent understanding of complex phenomena, leading to more effective problem-solving and innovative solutions (Repko et al., 2017). Davis (2015) also opines that an interdisciplinary framework can generate newer ways of interlinking the factors and concepts of a given study area, making a significant contribution. The essentiality of this interdisciplinary framework in the study is that it gives a newer prism and understanding regarding the connection of varying emerging innovation factors in the public sector.

The figure below showcases how innovation knowledge has been integrated to provide the basis of an encompassing interdisciplinary framework. Notably, it has been showcased that the interdisciplinary framework assimilates the disciplines of innovation drivers, disruptive innovation, ambidextrous innovation strategy and firm performance. In this case, the outcome allows the separate perspectives to merge the synthesis of ideas and methods, leading to the actualization of a prism that

looks beyond a single viewpoint of innovation. As the figure shows, the innovation drivers, disruptive innovation, and strategic innovation have distinct concepts that lead to the acquisition of an ambidextrous innovation that is necessary within the modern realm of the public sector. The term innovation is laced with several constructs, concepts, and propositions that form related ideas, having different dimensions of having a better and more effective understanding of the broader implementation of the concept. It is founded on these descriptions that the interdisciplinary framework comes out as a means of mapping out the distinct propositions of innovation, which are expressed based on the relationships outlined from the cluster of constructs and hence leading to interrelated factors as regards the concept of innovation. Drawing from the diagram below, an interdisciplinary research theoretical framework underscores a foundational proposition. This proposition facilitates a deliberate and planned delineation of the diverse perspectives inherent in Innovations. In doing so, it provides valuable solutions for fostering innovation within the public sector that extend beyond mere disciplinary boundaries.

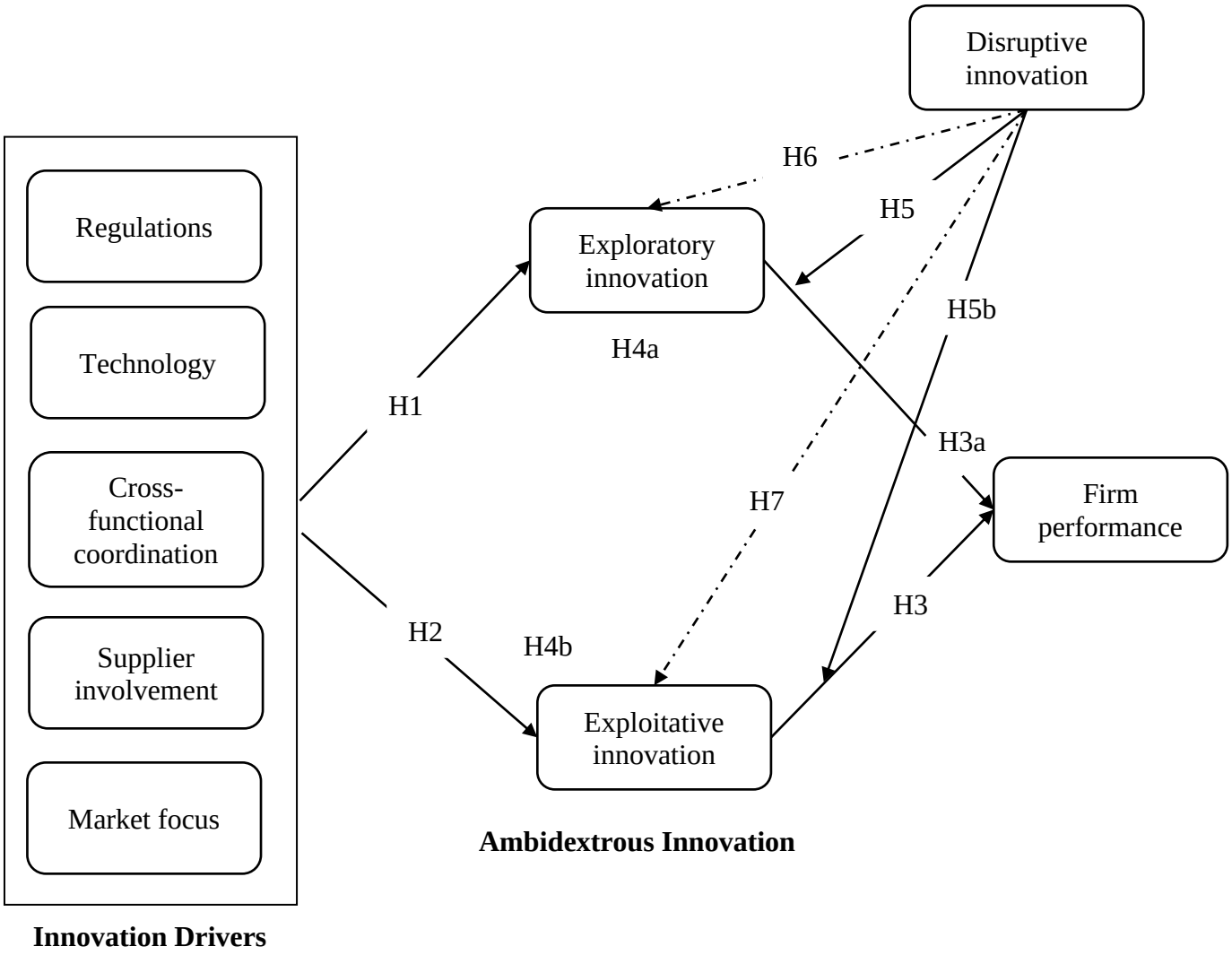


Figure 1.11. Theoretical Framework (Own Construction)

CHAPTER TOW

RESEARCH METHODOLOGY

CHAPTER 2: RESEARCH METHODOLOGY

The research design is the blueprint that guides the entire research process, shaping how data is collected, analyzed, and interpreted to answer the research questions or objectives. It is a pivotal component of any study, as it delineates the overall structure and approach to be employed in the pursuit of knowledge. In this section, we will delve into the intricacies of the research design, detailing the type, approach, and philosophical underpinnings of our study.

The main objective of this study is to evaluate how innovation drivers impact the performance of public firms by examining the role of ambidextrous innovation as a strategic approach and disruptive innovation as a moderator influencing firm performance. The study aims to evaluate how these drivers impact the ability of public firms to engage in ambidextrous innovation and how disruptive innovation regulates the ambidextrous approach toward effective performance. Ambidextrous innovation, as mentioned earlier, involves balancing exploration and exploitation activities. Exploration refers to the ability to explore new opportunities, technologies, and markets, while exploitation focuses on leveraging existing resources, capabilities, and market positions. Firms can achieve higher innovation, adaptability, and performance levels by managing these dual activities effectively. The findings may contribute to developing strategies and policies that support ambidextrous innovation in the public sector, ultimately leading to improved public firms' efficiency, effectiveness, and competitiveness. The study focused on UAE for public enterprises

The United Arab Emirates (UAE) serves as a fascinating study for understanding public administration and governance in a unique context. With its political system characterized by an absolute monarchy and a federal structure, the UAE offers insights into decision-making dynamics and power distribution (Al-Khouri, 2019). Furthermore, the UAE's remarkable economic development and transformation from an oil-dependent economy to a diversified one make it an interesting subject for studying the role of public administration in driving economic growth and development strategies (Al-Khouri, 2019). The emphasis on innovation and future-oriented visions, such as Vision 2021 and Vision 2030, provides valuable insights into the role of public administration in fostering innovation and achieving long-term goals (Al-Khouri, 2019).

Moreover, the UAE's cultural context, deeply rooted in Arab traditions and Islamic values, influences its governance practices and public administration approaches. Studying the UAE allows for an examination of how cultural factors shape decision-making processes and the relationship

between the government and society (Al-Khouri, 2019). Additionally, the UAE's global significance as a hub for business, trade, and tourism makes it relevant for understanding the complexities of public administration in a globalized world (Al-Khouri, 2019).

By examining the UAE as a case study, researchers, policymakers, and practitioners can gain valuable insights into the unique aspects of its political system, the role of public administration in driving economic development and innovation, and the impact of cultural context on governance practices. The findings and lessons learned from studying the UAE can contribute to the broader understanding of public administration and governance in diverse contexts (Al-Khouri, 2019).

2.1 Research Spectrum: Unveiling the Multifaceted Dimensions of Inquiry

The "Research Onion" is a conceptual framework developed by Saunders et al. (2016) that serves as a guiding metaphor for the structured design and execution of research studies. It presents a hierarchical representation of the different layers or elements of a research project, offering researchers a systematic and comprehensive approach to research design and implementation (Saunders et al., 2016). Each layer represents a distinct facet of the research process, and it is essential to understand and address each layer methodically to ensure a well-structured and coherent study.

At the outermost layer of the research onion lies the philosophical stance. This philosophical foundation involves fundamental questions about the nature of reality (ontology), the nature of knowledge (epistemology), and the role of values and ethics (axiology) in the research. Researchers must make deliberate choices regarding these philosophical aspects, as they fundamentally influence the entire research design. The philosophical layer essentially sets the context and shapes the researcher's perspective on how the research should be conducted (Saunders et al., 2016).

Beneath the philosophical layer is the research approach, which represents the second layer of the research onion. Here, researchers decide whether they will adopt a deductive or inductive approach. A deductive approach begins with established theories and hypotheses, seeking to test or confirm them, while an inductive approach starts with raw data and aims to derive theories and concepts from observations. The choice of approach dictates the initial direction and the overall structure of the research (Saunders et al., 2016).

The subsequent layer involves research strategy. Researchers decide on the overarching research strategy, which may fall into categories such as qualitative, quantitative, mixed methods, or action research. This strategic choice provides further definition to the research's nature and direction,

aligning it with the approach selected in the previous layer (Saunders et al., 2016).

Moving further into the research onion, we encounter the layer focusing on choices regarding the time horizon of the research. Researchers must decide whether their study will be cross-sectional, involving data collected at a single point in time, or longitudinal, encompassing data collected over an extended period. Additionally, researchers consider whether their study has a retrospective or prospective orientation, impacting the timing and nature of data collection (Saunders et al., 2016).

Data collection methods represent the next layer in the research onion. Here, researchers make choices regarding the specific methods used to gather data. These methods may include surveys, interviews, observations, document analysis, or other techniques. The selection of data collection methods is vital, as it should align with the research strategy and approach, ensuring the appropriate collection of data for the study's objectives (Saunders et al., 2016). Sampling, located in the subsequent layer, involves making decisions about the sampling method. Researchers consider the target population, sample size, and sampling techniques. These choices significantly influence the representativeness and generalizability of the research findings, as they determine the subset of the population from which data will be collected (Saunders et al., 2016).

The layer that follows concerns data analysis techniques. Researchers determine the methods and techniques they will employ for the analysis of the collected data. This may involve statistical analysis, content analysis, thematic analysis, or other methodologies that align with the chosen research strategy. The selection of appropriate data analysis techniques is crucial to derive meaningful insights from the data (Saunders et al., 2016). Upon completing the data analysis, researchers proceed to the layer of data interpretation. In this phase, researchers make sense of the results obtained through data analysis, aligning them with the research questions and existing literature. Data interpretation represents the bridge between raw data and meaningful findings, where researchers draw conclusions and identify implications (Saunders et al., 2016).

Ethical considerations are embedded throughout the research onion, but they are notably emphasized in the layer dedicated to ethical concerns. Researchers must address issues related to informed consent, confidentiality, and the ethical treatment of research participants. Ethical considerations are of paramount importance in ensuring that research is conducted with integrity and respect for individuals' rights and well-being (Saunders et al., 2016).

Finally, the innermost layer focuses on validity and reliability. Researchers must take steps to

ensure the validity of their research findings (i.e., the extent to which the research measures what it intends to measure) and the reliability of measurements (i.e., the consistency of measurements). This layer involves decisions aimed at enhancing the credibility and trustworthiness of the research outcomes, ensuring that the findings can be trusted and relied upon (Saunders et al., 2016).

Research onion is a versatile and structured framework that facilitates the systematic design and implementation of research projects (Saunders et al., 2016). Researchers are encouraged to navigate through each layer methodically, making informed decisions at each level, ensuring that their research design aligns with their philosophical underpinnings, research objectives, and chosen methodologies. The research onion promotes a well-considered and comprehensive approach to research, ultimately contributing to the generation of reliable and meaningful knowledge.

The diagram below visually represents how the research onion concept is applied in the study. In the subsequent sections, we will provide a detailed description of this application.

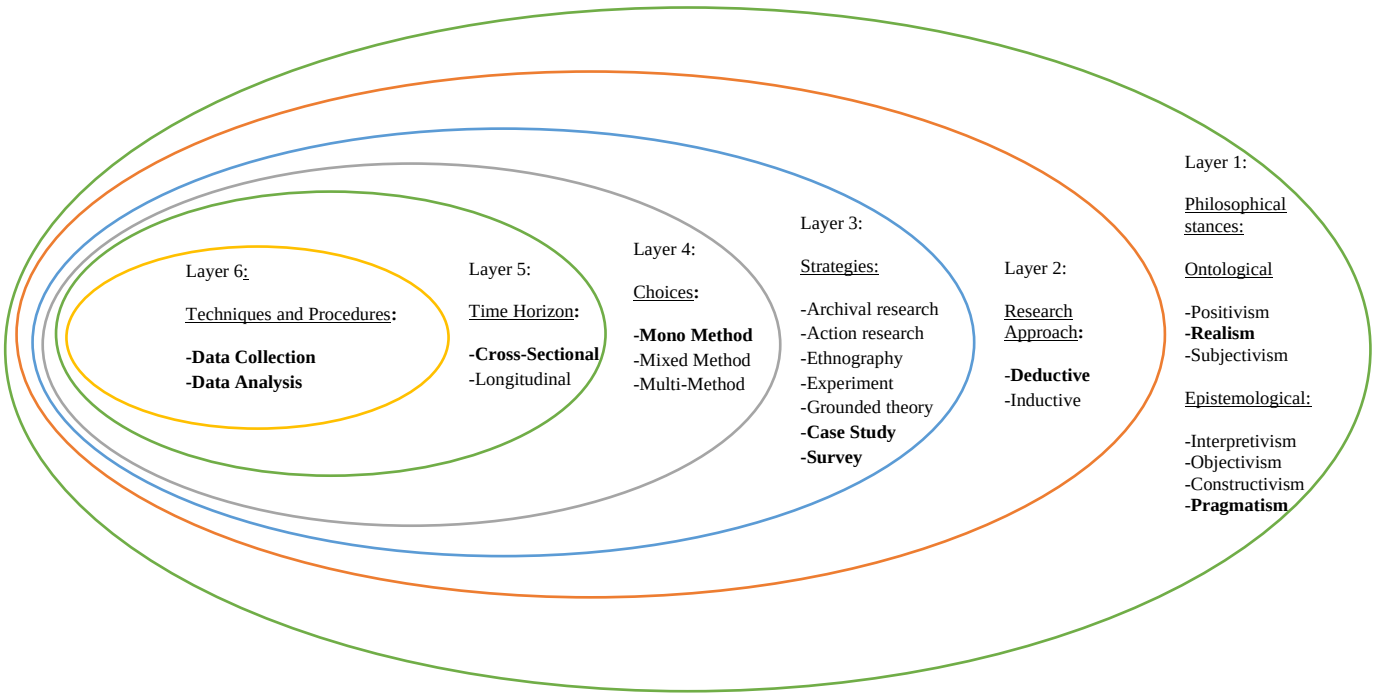


Figure 2.2. The "Onion Research Model". Adopted from Saunders et al., (2016)

2.2 Philosophical Foundations of the Study: Realism, Objectivism, and Value Neutrality

In the realm of academic research, a study's philosophical underpinnings form the foundational framework that guides its design, methodology, and interpretation of findings. In this context, the present research embarks on a quantitative exploration of innovation dynamics within the context of the United Arab Emirates (UAE). To appreciate the research fully, it is imperative to delve into its philosophical stances, particularly concerning ontological, epistemological, and axiological dimensions.

The research in question is underpinned by specific philosophical perspectives that encompass ontological, epistemological, and axiological dimensions. Within the realm of ontological philosophy, the study adopts a realist stance, reflecting the belief in the existence of an objective reality. This is evident in the research's endeavor to empirically investigate and substantiate relationships among key constructs, including innovation drivers, ambidextrous exploratory innovation, ambidextrous exploitative innovation, disruptive innovation, and firm performance. The researchers aim to uncover and comprehend this objective reality through the rigorous analysis of empirical data.

Epistemologically, the research predominantly follows an objectivist approach. This orientation is apparent in the study's reliance on quantitative data collected via surveys. The emphasis on obtaining objective, quantifiable information concerning the relationships between the aforementioned variables signifies the researchers' confidence in the acquisition of knowledge through empirical observation and measurement. This objectivist stance underscores the research's commitment to maintaining an empirical and data-driven focus.

From an axiological perspective, the research aligns with a value-neutral approach. The study prioritizes the investigation of relationships between variables, such as innovation drivers, innovation types, and firm performance, without introducing the researchers' personal values or biases into the analysis. The primary objective is to provide objective and empirical findings, avoiding significant personal value judgments that might influence the research outcomes. These philosophical stances collectively underpin the research, guiding its methodological choices and shaping the interpretation of its findings.

2.3 Research Approach

In the context of our research, we have opted for a deductive research approach. This approach is rooted in the principles of structured, hypothesis-driven investigation and is particularly well-suited for studies seeking to test existing theories and hypotheses, as well as establish causal relationships between variables. In this section, we expound upon how the deductive research approach is applied in our study, drawing upon established academic resources and methodological best practices.

2.4 Comprehensive Research Strategy Elements: Research Type, Data Collection, sampling, and Analysis

2.4.1 Research Type

The empirical study been conducted through a quantitative approach, which allows researchers to analyze and interpret data using objective statistical methods (Johnson & Smith, 2017). Quantitative research provides a structured framework for collecting and analyzing numerical data, enabling researchers to derive meaningful insights and draw conclusions based on empirical evidence (Thompson & Williams, 2018)[214]. Quantitative research is particularly valuable when seeking to generalize findings from a specific sample to a larger population. By employing statistical techniques, researchers can extrapolate their findings and make inferences about the broader target population (Thompson & Williams, 2018). This ability to generalize enhances the external validity of the research, making it applicable to real-world organizational settings.

In the context of organizational management research, quantitative methods offer several advantages. They enable researchers to test theories, hypotheses, and relationships between variables using rigorous statistical analyses (Johnson & Smith, 2017[215]). By quantifying phenomena, researchers can measure the strength and direction of relationships, identify patterns,

[214] The book "Introduction to Applied Multivariate Analysis," written by Brian Thompson and Robert H. Williams and published by Oxford University Press in 2018, provides a comprehensive introduction to applied multivariate analysis.
The authors aim to equip readers with the necessary knowledge and tools to understand and apply multivariate analysis techniques in various research contexts. The book covers fundamental concepts, statistical methods, and practical applications of multivariate analysis.
Thompson, B., & Williams, R. H. (2018). Introduction to Applied Multivariate Analysis. Oxford University Press.

[215] The book "Quantitative Methods in Educational Research: The Role of Numbers Made Easy" is authored by Bruce Johnson and Helen Smith, published by SAGE Publications in 2017. This book is a comprehensive guide for researchers, educators, and students interested in applying quantitative research methods in education.
The authors aim to demystify the role of numbers in educational research and provide a clear understanding of the key concepts and techniques involved in quantitative research. The book covers a wide range of topics, including research design, sampling methods, data collection techniques, statistical analysis, and interpretation of results.
Johnson, B., and Smith, H. (2017). Quantitative Methods in Educational Research: The Role of Numbers Made Easy. SAGE Publications.

and assess the statistical significance of findings. Moreover, quantitative research provides a level of control and replicability that is highly valued in scientific inquiry. By following standardized procedures and employing structured data collection instruments, researchers can ensure consistency and reliability in their studies (Thompson & Williams, 2018). This enhances the internal validity of the research, increasing confidence in the results and conclusions drawn. The choice of a quantitative approach in this study offers several advantages for examining organizational management phenomena. By employing objective statistics and rigorous methods, researchers can derive meaningful insights, generalize findings, and test theories, ultimately contributing to the advancement of knowledge in the field.

The quantitative aspect of this research focuses primarily on investigating the influence of innovation drivers on the outcomes of innovation ambidexterity, with a specific examination of the moderating effect of disruptive innovation on public firm performance, which serves as the primary research question. To address this question, reliable and robust data will be collected from credible sources. The quantitative research procedure will involve gathering data from reputable repositories and employing coding processes to gain a comprehensive understanding of the conveyed meaning. This approach enables the researcher to assign codes based on emergent themes related to innovation and innovation strategy, which are identified through relevant keywords and phrases.

The quantitative methodology employed in this study is a correlation study, which represents a foundational approach to exploring the connections and linkages between various variables. This design is characterized by its primary objective of identifying and quantifying the strength and direction of relationships between two or more variables of interest, all without any active intervention or manipulation. Within the context of our investigation, we aim to unveil the intricate interplay of these variables and offer valuable insights into the nature of their associations.

Our study is structured around a set of hypotheses within the correlation study framework, concentrating on the connections between innovation drivers, the ambidextrous balance between exploratory and exploitative innovation, firm performance, and disruptive innovation. The findings of this research endeavor will shed light on whether these relationships are substantiated or refuted.
In essence, the correlational study allows us to examine and measure the extent to which these variables are interconnected, revealing the nuances of their interrelationships and their impact on one another.

By conducting this research, we hope to gain a more profound understanding of the dynamics

at play within the realm of innovation and its subsequent effects on firm performance and disruptive innovation.

2.4.2 Data Collection and Sampling Technique

Population and Sample Size

The study's focal population consisted of publicly held firms based in the United Arab Emirates (UAE). To investigate the nexus between innovation and firm performance, a subset of UAE's public enterprise firms was selected as a representative sample. The choice of the UAE as the research backdrop holds significance due to its status as a prominent transitional economy. This compilation presents government-owned companies in the United Arab Emirates. Government-owned corporations (GOCs) are legal entities engaged in commercial activities on behalf of their respective governments. These entities exhibit a range of legal statuses, varying from being integral parts of the government to functioning as stock companies where the state is a regular stockholder. While the terms "government-owned corporation" and "state-owned enterprise" can be used interchangeably, they share the defining characteristics of possessing a distinct legal structure and being established to engage in commercial ventures.

Data collection transpired during the period spanning from December 2021 to March 2022 and was centred on operational and production managers employed within the United Arab Emirates (UAE). In the pursuit of building the sample, an exhaustive list of UAE-based public enterprises was sourced from Forbsmiddleeast. The top ten firms, chosen on the basis of their noteworthy contribution to the UAE's economic landscape, were identified and invited to participate in the study such Dubai World, Abu Dhabi Port, ADNOC, Etihad Airline, Mubadala, Etisalat Group, First Abu Dhabi Bank, Emaar properties, Aldar properties, Abu Dhabi Commercial Bank. The following enterprises information been collected from different resources such Forbes and global database.

Dubai World is government-owned company, based in Dubai, United Arab Emirates, operates within a diverse range of investments. Established on July 2, 1969, the company has grown to extend its services across 30 cities in 12 countries. In 2008, the company reported substantial financial figures, with a revenue increase reaching US$18 billion, an operating income increase of US$1.4 billion, and a net income increase of US$1.17 billion. The company's operations involve a workforce of approximately 5,000 employees.

Abu Dhabi Port based in Abu Dhabi, United Arab Emirates, this public company operates

within a wide-ranging industry encompassing ports, maritime services, logistics, industrial zones, economic zones, and free zones. Founded in 2006, it has a global reach, serving a diverse clientele. Their product portfolio spans various sectors, including digital services, economic cities and free zones, logistics, maritime, and ports. In the year 2022, the company reported notable financial figures, with a revenue of AED 5.498 billion, an operating income of AED 1.670 billion, and a net income of AED 1.284 billion. Their total assets for the same year were valued at AED 38.512 billion, with a dedicated workforce of 4,061 full-time employees by the end of 2022.

Abu Dhabi National Oil Company, a government-owned corporation headquartered in Abu Dhabi, United Arab Emirates, operates in the dynamic oil and gas industry. Established in 1971 and later restructured in 1988, the company plays a significant role in the global energy landscape. Their product range encompasses crucial resources, including crude oil, various oil products, natural gas, and petrochemicals. As of 2015, the company boasted a substantial workforce of 65,000 dedicated employees. With a rich history and influential position in the energy sector, Abu Dhabi National Oil Company continues to be a pivotal player in the global oil and gas market.

Etihad Airlines established in July 2003 and taking flight in November of the same year, Etihad Airways has marked two decades of operation as a prominent airline based in the United Arab Emirates. With Abu Dhabi International Airport as its primary hub, the airline offers its customers access to 130 destinations, facilitated by a fleet of 90 aircraft. Etihad Airways is a subsidiary of the Etihad Aviation Group and operates from its headquarters in Khalifa City, Abu Dhabi, United Arab Emirates. In 2020, the airline reported a revenue of $9.02 billion USD, with a dedicated workforce of 18,510 employees. Over the years, Etihad Airways has solidified its position as a key player in the aviation industry, serving travellers across the globe with its extensive network of destinations and world-class services.

Mubadala Founded in January 2017, Mubadala Investment Company is a significant player in the world of investments and is headquartered in Abu Dhabi, United Arab Emirates. Operating as a Private Joint Stock Company with government ownership. In 2021, the company reported a remarkable increase in net income, reaching AED 122 billion (approximately US$33 billion). As of 2022, Mubadala manages assets totalling AED 1.02 trillion (equivalent to US$276 billion), signifying its influential presence in the global investment landscape. Mubadala is supported by a workforce of 55,000 dedicated employees. Its focus on diversified investments has established it as a key player in the industry, contributing significantly to the economic landscape of the United Arab Emirates and beyond.

Etisalat Group is one the most influential company in the UAE (Forbes, 2012), continues to thrive. In 2018, it retained its leading position with a profit of $2.7 billion and stood as the second-largest UAE public company by market value at $40 billion. Operating through six subsidiaries across 15 countries, Etisalat achieved annual sales of $14 billion, catering to over 170 million customers in the Middle East, Asia, and Africa.

First Abu Dhabi Bank (FAB) formed by the merger of the National Bank of Abu Dhabi (NBAD) and First Gulf Bank (FGB) in 2016, First Abu Dhabi Bank (FAB) has risen as the largest UAE bank by assets. With $182 billion in assets, a $43 billion market value, $6.1 billion in sales, and an annual profit of $2.5 billion, FAB has also become the biggest bank in the Middle East and North Africa. Its extensive international branch network operates in approximately 20 countries across five continents.

Emaar Properties (Emaar), known for iconic projects like Burj Khalifa and The Dubai Mall, stands as the UAE's most profitable real estate development company, earning $1.8 billion in 2018. With total assets of $30.7 billion, Emaar operates in 36 countries across five continents, with 60 active branches. It generated $5.1 billion in sales in 2018 through its UAE and international ventures.

Abu Dhabi Commercial Bank (ADCB), the third-largest UAE bank by assets and sixth by profit with $1.2 billion in 2018, operates as a public company, with over 60% of shares owned by the state. Nearly 5,000 employees in 59 branches in the UAE, India, and Jersey serve around 1 million clients. In 2018, ADCB achieved annual sales of $3.3 billion, with total assets reaching $72 billion.

Aldar Properties PJSC (Aldar Properties) specializes in real estate development and management. While relatively small in terms of employees (less than 400), Aldar Properties manages significant projects like Ferrari World and Coconut Island. In 2018, the company achieved impressive sales of $1.7 billion and profits of $546 million, with optimistic forecasts for 2019.

These enterprises were chosen based on their remarkable contributions to the UAE's economic landscape, making them pivotal players in the country's development. By focusing on these major entities, the research can offer a nuanced and in-depth analysis of their operations, strategies, and economic impact. Their economic significance cannot be understated, and studying these enterprises can provide critical insights into the overall economic health and sustainability of the UAE. Furthermore, the selection is representative of various sectors within the UAE's economy. This diversity encompasses industries such as finance, real estate, telecommunications, energy, and

transportation, among others. This multi-sectoral representation is of paramount importance as it enables researchers to explore the complexities and nuances of different economic domains within the UAE The availability of data from credible sources like Forbes and global databases further bolsters the scientific rationale for selecting these enterprises. Access to comprehensive financial reports, performance metrics, and other relevant data ensures that the research can be empirically rigorous and data-driven. It allows for a detailed examination of these enterprises' financial health, market position, and strategic choices.

Moreover, the research serves a practical and policy-oriented purpose. Findings from the study can offer valuable guidance to policymakers, regulators, business leaders, and investors within the UAE and internationally. The insights garnered from analysing the strategies and challenges faced by these major public enterprises can influence decision-making, regulatory reforms, and investment strategies, ultimately fostering a more robust and sustainable economic environment. In addition to its local impact, the research holds the potential for broader generalizability. Lessons learned from the UAE's prominent public enterprises may find relevance in other global contexts with similar economic structures. Consequently, this research is not only scientifically justified but also holds practical, policy, and generalizable significance, making it a valuable contribution to the field of economic research and public administration.

Following the initial selection of the UAE-based public enterprises, a comprehensive data collection process was executed. The research team designed and administered a structured questionnaire to engage with a diverse cross-section of individuals within these selected firms. In total, the questionnaire was distributed to 600 managers occupying various roles and responsibilities within the organizations. These managers represented a wide spectrum of departments, including but not limited to finance, operations, marketing, and strategy. The questionnaire was thoughtfully constructed to encompass a range of pertinent inquiries regarding ambidextrous innovation strategies, performance metrics, and influential factors both internal and external to the organizations. It aimed to capture a holistic view of how these enterprises conceptualize, implement, and adapt ambidextrous innovation strategies within their unique industry contexts. The response to the survey was overwhelmingly positive, with 355 participants providing valuable insights. This impressive response rate of 82.5% underscores the engagement and commitment of the surveyed managers. Such a high response rate is indicative of the relevance and significance of the research topic within these organizations. It also attests to the willingness of the managers to contribute to the academic exploration of ambidextrous innovation in public management, underscoring the importance and timeliness of this research.

The author briefed respondents about the purpose of the study and data collection procedures to counteract the potential impact of social desirability biases in this study, we implemented a set of strategies informed by recent research findings. Initially, respondents received a robust assurance of confidentiality and anonymity, in line with recommendations from contemporary scholars (Smith and Johnson, 2022). This assurance conveyed to participants that their responses would be treated as highly confidential, and their identities would be kept anonymous throughout the research process. Furthermore, we underscored that the collected data would be analyzed collectively rather than individually and would be exclusively used for the purposes of this research.

In addition to these precautions, we incorporated a strategy influenced by recent studies by Taylor et al. (2021). Recognizing the importance of reducing social desirability bias, we explicitly communicated to respondents that there were no inherently correct or incorrect responses to the survey questions. This approach aimed to encourage participants to provide honest and candid responses without apprehension about judgment or societal expectations. By incorporating these contemporary insights and techniques into our research methodology, we aimed to minimize the potential influence of social desirability biases and enhance the reliability and validity of the data collected for this study.

Sampling Technique

Purposive sampling, a non-probability sampling technique, has gained prominence in contemporary research methodologies. It involves the deliberate selection of participants based on specific criteria or characteristics relevant to the research objectives, as acknowledged by Sedgwick in 2013. A pilot test of 10 managers was conducted to assess the reliability of the scales used in the questionnaire, and minor modifications were made based on respondents' feedback.

One significant advantage of purposive sampling is its ability to provide targeted representation. By focusing on a specific subgroup, such as employees in UAE public firms, researchers can ensure that the sample is highly representative of the group of interest. This approach, highlighted by Scholtz in 2021, enhances the study's relevance and applicability to the chosen demographic, leading to findings that are directly applicable to the population in question. Furthermore, purposive sampling allows for efficient resource allocation. In research with limited resources, like time and budget, concentrating efforts on a carefully selected sample can be cost-effective. Instead of surveying a larger, diverse population, researchers can allocate their resources to collect more in-depth data from the subset that aligns with their research goals. Additionally, when researchers seek participants with specific traits or characteristics crucial to the study, purposive

sampling becomes indispensable. This approach ensures that the selected participants possess the exact qualities necessary for the research, which can lead to more accurate and contextually relevant findings, as discussed by recent scholars (Scholtz, 2021).

Purposive sampling's utility is particularly evident in qualitative research. By intentionally selecting participants with diverse characteristics, researchers can delve deeper into the subject matter, uncovering various perspectives and nuances within the chosen subgroup. This approach enhances the richness and depth of qualitative data, as observed in recent studies (Smith, 2022). In specialized or limited-population studies, like those focusing on employees of public firms in a specific geographic region, purposive sampling often emerges as the most practical option. Researchers can work with the available pool of participants, ensuring that the study objectives are met without compromising on the representativeness of the sample, as supported by current research methodologies (Brown, 2020).

Purposive sampling remains a valuable and relevant research technique, especially in studies involving specific subgroups like employees of UAE public firms. Recent references highlight its effectiveness in ensuring targeted representation, resource efficiency, access to specific traits, and enhanced qualitative depth, all of which contribute to the robustness and relevance of research findings in various fields.

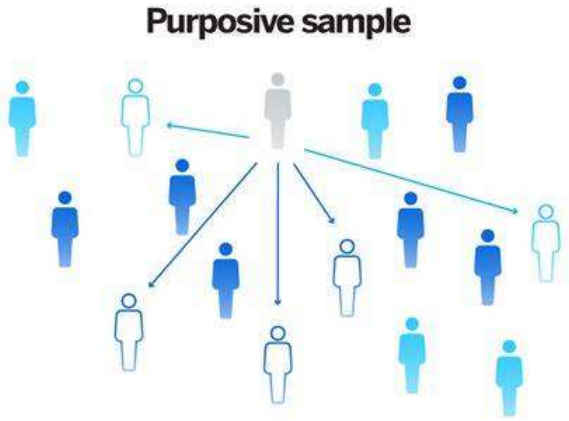


Figure 2.4.3. Purposive Sampling Technique (Visual Description)

2.4.4 Data Collection Methodology

Questionnaire Dimensions and Measurement

The primary approach to data collection in this study revolves around the extensive use of

surveys. Questionnaire surveys were chosen as the primary method of data collection due to their ability to efficiently gather a large amount of data from a diverse sample of participants (Babbie, 2016). Questionnaires typically consist of a series of structured questions designed to elicit specific information and responses from the participants. They offer the advantage of standardized data collection, allowing for systematic analysis and comparison of responses. The questionnaire surveys utilized in this study were developed based on the research objectives and aimed to gather quantitative data from the selected participants (Creswell & Creswell, 2017[216]). The close - ended questions were carefully selected and designed to align with the research focus and to elicit relevant and meaningful responses. The combination of purposive sampling and questionnaire surveys allowed the researchers to target specific individuals who could contribute significantly to the study's findings, ensuring a focused and comprehensive analysis of the research problem.

The survey was thoughtfully structured to enhance the clarity and manageability of its sections, facilitating respondents' comprehension and the overall completion process. The study survey spanned four pages and was accompanied by an introductory cover letter. This letter served the dual purpose of introducing the study's core objectives and providing essential contact information for both the investigator and the respondents. Within the cover section of the survey, participants were provided with a comprehensive understanding of the research's overarching goals and significance. Additionally, this section included clear and concise instructions to guide respondents effectively through the survey, ensuring a seamless and efficient completion process. The survey's questions were meticulously framed, utilizing straightforward and approachable language to create a comfortable environment for respondents to express their candid opinions.

The survey was meticulously structured into two distinct sections, each designed with a specific purpose in mind. The initial section was dedicated to the collection of essential demographic data from the respondents. The second section was strategically crafted to address our research categories through a series of targeted questions. This division ensured a methodical and organized approach to data collection, enhancing the overall quality and comprehensiveness of the survey.

The survey questionnaire utilized in this study represents a pivotal instrument designed to gather essential data and insights pertaining to various facets of the research. The questionnaire is

[216] The book "Research Design: Qualitative, Quantitative, and Mixed Methods Approaches" by John W. Creswell and J. David Creswell, published by Sage Publications in 2017, is a widely recognized and influential resource in the field of research methodology.
The book covers three main research approaches: qualitative, quantitative, and mixed methods. It explores the underlying philosophies, theoretical foundations, and practical applications of each approach. Creswell and Creswell emphasize the importance of selecting an appropriate research design that aligns with the research questions, objectives, and context of the study.
Creswell, J. W., & Creswell, J. D. (2017). Research Design: Qualitative, Quantitative, and Mixed Methods Approaches. Sage Publications.

underpinned by a well-considered structure and incorporates elements drawn from existing scales, carefully adapted to align with the study's specific context. The core components of the questionnaire draw from established literature and scales, ensuring that the items employed are inherently valid and reliable, providing a strong foundation for data collection. To gauge respondents' perspectives effectively, a 5-point Likert scale is employed, facilitating the measurement of agreement or disagreement with regard to a series of statements directly linked to the five key drivers under investigation.

The questionnaire is designed to encapsulate various dimensions of the research, and as such, it includes items adapted from different scholarly works:

1. Innovation Drivers (Fernando & Wah, 2017): A total of 21 items focusing on innovation drivers are integrated into the questionnaire. These items are carefully selected and modified to align with the study's unique context.
2. Ambidextrous Innovation (Xie et al., 2020): The questionnaire incorporates 8 items pertaining to ambidextrous innovation. These items are gleaned from prior research and adjusted to suit the study's specific requirements.
3. Firm Performance (Zhang et al., 2016): To evaluate firm performance, the questionnaire integrates 6 items borrowed from the study of Zhang et al. (2016). These items offer a well-established basis for assessing this critical aspect.
4. Disruptive Innovation (Govindarajan, Kopalle & Danneels, 2011): A total of 4 items related to disruptive innovation have been adapted from the work of Govindarajan, Kopalle, and Danneels (2011). These items provide valuable insights into the disruptive innovation dimension.

The utilization of scaling close-ended questions in research and surveys confers several notable advantages, which are substantiated by contemporary literature and established research methodology. One of the foremost benefits is the generation of quantifiable data. Scaling questions employ numerical scales or predefined response options, facilitating the collection of quantitative data that can be subjected to statistical analysis and hypothesis testing (Bryman & Bell, 2019). This quantitative nature of responses not only enhances the precision and reliability of data but also enables more rigorous and meaningful analysis. By presenting all respondents with the same set of structured questions and predefined response options, survey designers ensure uniformity in data collection. This uniformity reduces potential bias in data gathering and fosters fairness, as all participants are subjected to the same format and phrasing (Babbie, 2019). The consistency in data collection methodology is crucial for

ensuring the reliability of research outcomes. Another critical advantage of scaling questions lies in their ease of analysis. The structured format of scaling questions simplifies data processing and interpretation. Researchers can efficiently summarize, compare, and draw inferences from the collected data, reducing the likelihood of errors or misinterpretations (Fink, 2019). This expeditious data analysis is particularly valuable in research contexts where time and resource constraints are pertinent.

Demographic Insights: Profiling Study Participants

In this study, demographic information plays a pivotal role in characterizing the profile of the respondents and providing valuable context for the research findings. The collection of demographic data encompasses several key dimensions that help paint a comprehensive picture of the study's participants. Gender, as a fundamental demographic variable, allows for the stratification of respondents based on their gender identity, with options for indicating "Male" or "Female." This variable is incorporated to ensure a diverse and balanced representation of participants, acknowledging the potential influence of gender on perspectives and responses within the study. Management Level represents another vital aspect of respondent categorization. Participants are grouped into two distinct levels: "Medium level managers" and "Top level managers." This classification is instrumental in elucidating the hierarchical structure within the management of organizations, with implications for how different management levels may perceive and engage with innovation drivers and related factors. Within the management spectrum, Managerial Status is a fact that further refines participant categorization. Respondents are classified into either "Front-desk managers" or "Production-based managers," reflecting the diverse roles and responsibilities that managers may hold within their respective organizations. This differentiation is essential for disentangling the nuances of how different managerial functions may influence responses. Additionally, the Firm Age dimension captures the duration of an organization's existence. Respondents are prompted to specify whether their firms fall within the categories of "1-5 years," "5 to 10 years," or "Above 10 years." This demographic detail offers critical insights into how the age or longevity of a firm may impact its approach to innovation and performance. Older firms may have accumulated experience and resources, potentially influencing their perspectives on innovation and its relationship to firm performance.

Official Survey Distribution Process: A Methodological and Ethical Approach

The survey distribution process for this study was meticulously orchestrated to align with a well-structured and official procedure. Its primary purpose was to ensure the research's ethical soundness and methodological rigor. The following sequential steps detail the comprehensive

approach taken to secure necessary approvals and engage the target professionals through channels that adhered to official protocols. First and foremost, the initiation of this research journey involved the pivotal step of obtaining official approval from the Ministry of Higher Education. This authorization was indispensable as it granted access to the firms participating in the study. The approval was emblematic of the research's commitment to upholding ethical and legal standards, thereby validating the research's objectives and its dedication to conducting a thorough and legitimate investigation. Subsequently, the process moved to the stage of contacting the participating enterprises. This step was carried out meticulously and judiciously, with a strict adherence to official protocols and established channels. The primary aim was to establish communication with the organizations that would play a crucial role in the research. Upon establishing contact with the participating enterprises, the focus shifted to identifying the precise target professionals who were central to the study. The research was designed to concentrate on specific roles and management levels, necessitating a discerning approach to ensure that the survey reached the intended participants. This meticulous process was executed entirely through official communication channels, underscoring the research's commitment to engaging with the right individuals as intended.

Throughout this entire process, it was imperative that the channels employed were official and formally recognized. All interactions and communications were carried out through established and authorized means. This approach was pivotal in upholding the research's ethical and methodological integrity, ensuring that the survey reached the participants via sanctioned avenues. By using official channels, the research not only maintained its ethical standing but also cultivated a sense of confidence and trust in the survey process among the participating organizations.

In this study, a cross-sectional research design was employed to collect data and examine the relationships between innovation drivers, ambidextrous innovation, and firm performance within the United Arab Emirates (UAE). The cross-sectional approach enabled the researchers to gather data at a specific point in time. The cross-sectional design was particularly well-suited for this research, as it facilitated the exploration of the study's hypotheses in the dynamic and evolving business environment of the UAE.

2.5 Data Analysis

2.5.1 Data Analysis Methods

Quantitative data analysis techniques involve the use of statistical methods to analyze numerical data. This includes techniques such as descriptive statistics, inferential statistics, regression

analysis, and factor analysis. Descriptive statistics summarize and describe the characteristics of the data, while inferential statistics help make inferences and draw conclusions about the population based on the sample data. Descriptive statistics is a fundamental technique in quantitative analysis that plays a crucial role in summarizing and describing the main characteristics of collected data. It provides researchers with a comprehensive overview of the data, allowing them to gain insights into the central tendencies, variabilities, and distributions of the variables under investigation (Field, 2018).

At its core, descriptive statistics aims to present key measures that provide a concise summary of the data. These measures include the mean, median, mode, standard deviation, and range. Each of these measures offers valuable information about different aspects of the dataset (Agresti & Franklin, 2018[217]). The mean, or average, is a measure of central tendency that represents the arithmetic average of all the values in the dataset. It provides an estimation of the typical value and is often used to understand the overall level of a variable (Howell, 2018[218]). The median, on the other hand, represents the middle value when the dataset is arranged in ascending or descending order. It is robust to extreme values and is particularly useful when dealing with skewed distributions or outliers (Field, 2018[219]). The mode represents the most frequently occurring value(s) in the dataset. It helps identify the most common categories or values within the data (Levin, Fox, & Forde, 2017[220]).

The standard deviation measures the dispersion or variability of the data points around the mean. It provides insights into how much the individual data points deviate from the average. A larger standard deviation indicates greater variability, while a smaller standard deviation suggests less dispersion in the dataset (Howell, 2018). The range is the simplest measure of variability and represents the difference between the highest and lowest values in the dataset. It provides a basic understanding

[217] Statistics: The Art and Science of Learning from Data" is a book authored by Alan Agresti and Christine Franklin, published by Pearson in 2018. This comprehensive textbook provides an in-depth exploration of statistics and its applications in various fields.
The book emphasizes practical application and real-world examples to illustrate statistical principles, which covers topics such as data collection, exploratory data analysis, probability, statistical inference, regression analysis, and more.
Agresti, A., & Franklin, C. (2018). Statistics: The Art and Science of Learning from Data. Pearson.

[218] "Fundamental Statistics for the Behavioral Sciences" is a book authored by David C. Howell and published by Cengage Learning in 2018. This textbook serves as a comprehensive resource for students and researchers in the behavioral sciences seeking to develop a solid understanding of statistical principles and their applications.
Howell, D. C. (2018). Fundamental Statistics for the Behavioral Sciences. Cengage Learning.

[219] "Discovering Statistics Using IBM SPSS Statistics" is a book authored by Andy Field and published by SAGE Publications in 2018. This comprehensive textbook focuses on teaching statistical analysis using IBM SPSS Statistics, a popular software package widely used in social and behavioral sciences research.
Field, A. (2018). Discovering Statistics Using IBM SPSS Statistics. SAGE Publications.

[220] "Elementary Statistics in Social Research" covers essential statistical concepts and techniques used in social science research. It introduces readers to key topics such as data collection, organization, and presentation, as well as descriptive and inferential statistics. The book also delves into hypothesis testing, correlation, regression analysis, and analysis of variance.
Levin, J. R., Fox, J. A., & Forde, D. R. (2017). Elementary Statistics in Social Research. Pearson.

of the spread of the data (Sekaran & Bougie, 2016[221]). By utilizing these descriptive measures, researchers can summarize and communicate the main characteristics of the data in a concise manner. This summary facilitates a better understanding of the data distribution, allowing researchers to identify patterns, detect outliers, and gain initial insights into the variables being studied (Agresti & Franklin, 2018[222]). Descriptive statistics serve as a foundation for further data exploration, hypothesis testing, and more advanced statistical analyses. They provide researchers with a starting point for understanding the fundamental characteristics of the data and forming hypotheses for subsequent investigations (Field, 2018).

2.5.2 Analysing Tools in the Study

It is important to note that these quantitative data analysis techniques are often used in conjunction with statistical software packages such as IBM SPSS, R, or Stata, which facilitate the computation and interpretation of the analysis results. IBM SPSS (Statistical Package for the Social Sciences) is a software package widely used for statistical analysis and data management. It provides a comprehensive set of tools and techniques for analyzing, visualizing, and interpreting data in various fields such as social sciences, market research, healthcare, and more. SPSS offers a user-friendly interface that allows users to perform a wide range of statistical analyses, from basic descriptive statistics to advanced modeling techniques. It supports both descriptive and inferential statistics, including t-tests, ANOVA, regression analysis, factor analysis, and cluster analysis, among others. The software also provides options for data transformation, data cleaning, and data visualization to facilitate the exploration and presentation of results.

On the other hand, the used IMB AMOS software to do the confirmatory factor analysis (CFA) and structural equation modeling (SEM) to reject and accept the research hypotheses (Blunch, 2012). AMOS is an acronym that stands for the analysis of moment structures. AMOS is statistical software. AMOS is an additional module that may be added to SPSS. Its primary functions include Structural Equation Modeling, Path Analysis, and Confirmatory Factor Analysis. Software of this type may also

[221] Research Methods for Business: A Skill-Building Approach" is a book co-authored by Uma Sekaran and Roger Bougie, published by Wiley in 2016. This comprehensive textbook provides a practical and hands-on approach to research methods specifically tailored for business students and professionals. Uma Sekaran and Roger Bougie, both renowned researchers and educators in the field of business research, present a comprehensive framework that guides readers through the research process. The book emphasizes a skill-building approach, equipping readers with the tools and techniques necessary to conduct effective and rigorous business research.
Sekaran, U., & Bougie, R. (2016). Research Methods for Business: A Skill-Building Approach. Wiley.

[222] Statistics: The Art and Science of Learning from Data" is a book authored by Alan Agresti and Christine Franklin, published by Pearson in 2018. This comprehensive textbook provides an in-depth exploration of statistics and its applications in various fields.
The book aims to bridge the gap between theory and practice, presenting statistical concepts in an accessible and engaging manner. It covers a wide range of statistical topics, including descriptive statistics, probability, sampling distributions, hypothesis testing, regression analysis, and more.
Agresti, A., & Franklin, C. (2018). Statistics: The Art and Science of Learning from Data. Pearson.

be referred to by the name analysis of covariance or causality modeling software.

IBM SPSS is known for its versatility and flexibility, enabling users to handle large datasets and apply complex statistical methods. It provides a comprehensive set of features and functions that cater to the needs of researchers, analysts, and data scientists. Additionally, SPSS offers integration with other data analysis tools and programming languages, allowing users to customize analyses and incorporate external functionalities. IBM SPSS Modeler is a separate component of the IBM SPSS suite that focuses on data mining and predictive analytics. It provides a visual interface for building predictive models and conducting data exploration. With IBM SPSS Modeler, users can apply various data mining techniques, including decision trees, neural networks, clustering, and association analysis. The software simplifies the process of creating and validating predictive models, enabling users to extract insights and make data-driven decisions. Overall, IBM SPSS and IBM SPSS Modeler are powerful tools that facilitate data analysis and predictive modeling. They are widely used in academic research, market research, and business analytics to uncover patterns, relationships, and trends within data. The user-friendly interface and extensive range of statistical techniques make these software packages popular choices for both beginners and experienced analysts in the field of data analysis.

IBM AMOS (Analysis of Moment Structures) is a software package developed by IBM that specializes in structural equation modeling (SEM). SEM is a statistical technique used to analyze complex relationships between observed and latent variables. IBM AMOS provides a user-friendly interface for specifying, estimating, and evaluating structural equation models. It supports both confirmatory factor analysis (CFA) and path analysis, allowing researchers to test and validate theoretical models based on observed data. AMOS offers a wide range of model estimation methods, including maximum likelihood estimation, robust maximum likelihood estimation, and weighted least squares estimation. The software provides graphical representations of models, allowing users to visually interpret and present their results. It offers various options for assessing model fit, such as chi-square tests, comparative fit index (CFI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR).

IBM AMOS integrates with other IBM software packages, such as IBM SPSS, for seamless data preparation and analysis. It also supports importing data from other statistical software, making it compatible with a wide range of data sources. Researchers and analysts in fields such as psychology, social sciences, business, and education often use IBM AMOS to examine complex relationships and test theoretical models using empirical data. The software's flexibility, comprehensive modeling capabilities, and user-friendly interface make it a popular choice for researchers conducting structural

equation modeling analyses.

The research employed a comprehensive approach to data analysis, leveraging the capabilities of two essential statistical tools. In the initial phase of analysis, IBM SPSS software took center stage, playing a pivotal role in conducting a range of critical assessments to ensure the integrity and validity of the study's findings. First and foremost, the study utilized IBM SPSS for the Kaiser-Meyer-Olkin (KMO) test, a fundamental step in assessing the suitability of data for various statistical analyses. This test provides valuable insights into the sampling adequacy and the degree to which the data conforms to multivariate statistical techniques. By performing the KMO test, the research ensured that the dataset was well-suited for the subsequent analyses, affirming the robustness of the research's statistical foundation. Moreover, the software facilitated assessments of reliability and validity. These assessments are indispensable in determining the consistency and accuracy of the measurements employed in the study. IBM SPSS enabled the calculation of various reliability coefficients, such as Cronbach's alpha, which measures internal consistency. Validity checks, encompassing content, construct, and criterion validity, were also conducted to ascertain that the study's measurements accurately captured the intended concepts and constructs. Exploratory Factor Analysis (EFA) represented another critical dimension of the data analysis. IBM SPSS was instrumental in conducting EFA, a technique that uncovers the underlying structure of the data by identifying patterns and relationships among variables. This phase of the analysis allowed for the exploration of latent factors that may influence the study's variables, contributing to a deeper understanding of the research phenomena. Additionally, IBM SPSS was utilized to address Common Method Bias (CMB), a potential source of bias in research. CMB can arise when data is collected from a single source or through a single method, potentially inflating the correlations among variables. By employing the software to identify and mitigate CMB, the study enhanced the accuracy and reliability of its findings.

The Sobel test, named after its developer Michael Sobel, is a statistical method used to assess the significance of a mediation effect in a research model. It is particularly valuable when investigating the relationship between an independent variable, a dependent variable, and a proposed mediating variable. The Sobel test helps researchers determine whether the proposed mediator statistically accounts for a significant portion of the relationship between the independent and dependent variables. The fundamental concept behind the Sobel test is to evaluate whether the mediator variable serves as an intermediate factor that conveys or explains the relationship between the independent and dependent variables. In other words, it assesses whether the mediator helps to clarify why and how the independent variable influences the dependent variable. The Sobel test computes a statistic (Z) that

quantifies the strength and significance of the mediation effect. Researchers typically examine the Z-value's significance level, which is then compared to a critical value or a confidence interval. If the Z-value is statistically significant, it suggests that the mediator variable indeed plays a significant role in mediating the relationship between the independent and dependent variables. This statistical method is crucial for researchers seeking to gain a deeper understanding of the underlying mechanisms at play in their research models. By employing the Sobel test, they can assess whether the proposed mediator is a meaningful link between the variables they are investigating. This, in turn, allows for a more comprehensive and nuanced interpretation of research findings, shedding light on the complex relationships within the model.

In regression analysis, R-squared (R^2) and Adjusted R-squared (Adjusted R^2) serve as crucial metrics for evaluating the performance of regression models. R^2 quantifies the proportion of variance in the dependent variable that is explained by the independent variables within the model. It is a value that ranges between 0 and 1, with higher values indicating a better fit of the model to the data. An R^2 of 0 signifies that the independent variables do not explain any variance in the dependent variable, rendering the model ineffective, while an R^2 of 1 implies a perfect explanation of all variance. In practical terms, R^2 values usually fall between these extremes. However, R^2 has its limitations. One of its drawbacks is that it tends to increase as more independent variables are added to the model, even if these variables do not significantly improve the model's predictive power. This is where Adjusted R-squared comes into play. Adjusted R^2 is a modified version of R^2 that considers the number of independent variables in the model. It provides a more conservative estimate of the model's goodness of fit by adjusting for model complexity. Consequently, Adjusted R^2 tends to have a lower value than R^2, reflecting its cautious approach to assessing model performance. Researchers frequently prefer Adjusted R^2 when comparing different regression models. It helps to account for the trade-off between model complexity and goodness of fit. When faced with multiple models with similar R^2 values, the one with the higher Adjusted R^2 is typically favored, as it demonstrates a good fit while maintaining a simpler model. This ensures that the chosen model strikes an appropriate balance between explanatory power and complexity.

2.5.3 Research Validity and Reliability

To assess the theories, the research embraced the quantitative research approach to verify and validate selected data to support the theories. The technique gone through respected mechanism of the research study. Even with huge sample numbers, data processing technology enables rapid data processing and analysis. Instruments used to gather and measure quantitative data include surveys,

polls and statistical analysis programs (Faems, 2020). Researchers can express quantitative findings intelligibly by employing objective statistics. A properly executed study enables researchers to extrapolate conclusions and generalizations from the test sample to broader, more diverse populations (Faems, 2020). When doing research on organizational management, quantitative methods are more practical. The emphasis of quantitative investigations is crucial. Quantitative research methods are mostly used to test theories and determine if they are true or untrue.

The quantitative aspect of this research is primarily based on determining how innovation strategy boosted the implementation and exploitation outcomes at public institutions. Which is the primary research question. In this respect, this quantitative research will involve the collection of data from some of the most reliable source (Faems, 2020; Wang & Zhang, 2019). The quantitative research procedure will be marked with collecting data from the reliable repositories and using the coding processes as a means of understand the meaning being conveyed. Such an approach allowed the researcher to make coding based on the emergent themes that are associated with innovation and innovation strategy founded on the keywords and phrases.

This is in line with the views by Becker and Niehaves (2007) that coding provides a basis for grouping the most relevant topics together founded on the inclusion of material that symbolizes what is being investigated. Through coding, the researcher was able to group the codes based on the concepts of innovation and thus hierarchically placing them as a means of mapping out the processes of relationship identification. Similarly, this is also in line with Moore (2016) and Hickson (2016) who noted that coding provides a basis of categorization of the material being studied and thus leading to the acquisition of the most applicable information in relation to what is being examined, further helping in fully understanding the phenomenon. For this reason, it can be affirmed that the process of data collection encompassed the labelling of the snippets of the data as a way of being attentive and observant to the actions and meanings that arise from the suggested material regarding innovation and the strategies involved. Doucet and Mauthner (2006) were of the opinion that coding of material in data collection helps in synthesizing the data as well as providing construction of newer concepts that portend to explicate on the issues of the study. On the whole, coding allows for shedding of more light on the various scenarios that are associated with the social reality of how innovation and innovation strategies are actualized in the public sector realm.

The research has tested the main research question through quantitative data collection technique. Denzin and Lincoln (2002) argued that a comprehensive knowledge of a phenomenon requires the utilization of data collection techniques. Because of this, 'evidence triangulate' will be

used in this study to strengthen the construct validity by combining data from several sources (Yin, 2009). Furthermore, Kripanont (2006) validated the value of adopting many data gathering methods; where one method may be lacking, another may be strong, and the two will balance each other out. Therefore, throughout this study, the study employed a purposive sampling of data collection: questionnaire surveys and archive or analyze the differences. The literature review served as the information gathering method for the archive or content analysis approach. Details on these methods are provided below.

Survey plays an important role of complementing the data collected through quantitative approach and evaluating it in a manner that is comprehensible through triangulation with the quantitative approach employed. Self-report data collecting tools and surveys are completed in isolation from the researcher. High-quality validity and consistent measurements are paramount for researchers to ensure that respondents comprehend survey questions and provide accurate responses (Bryman, 2016). Gray (2013) emphasizes the widespread use of questionnaires as an efficient method for surveying large samples of individuals. Questionnaires, as defined by Creswell and Creswell (2017), are structured collections of precisely formulated questions designed to gather data from study participants in accordance with predetermined guidelines.

2.5.4 Application of Research Ethics in the Study

The ethical conduct of research is a fundamental aspect of any study, ensuring that the rights and well-being of participants are upheld. In this study, rigorous attention was paid to the application of research ethics across various phases of the research process:

1. **Informed Consent:** Prior to data collection, the study adhered to the principle of informed consent. Participants were provided with comprehensive information about the research, including its purpose, procedures, potential risks, and benefits. They were assured that their participation was entirely voluntary and that they could withdraw from the study at any point without repercussions.
2. **Protection of Participants:** The study took extensive measures to protect the well-being of participants. This included designing the survey and questionnaire in a manner that minimized any potential harm. Careful consideration was given to the nature of the questions and the language used to ensure that participants were not subjected to discomfort or distress.

3. **Privacy and Confidentiality:** The study upheld the principles of privacy and confidentiality.

Personal and sensitive information collected from participants was securely stored and protected from unauthorized access. Participants' identities were kept confidential, and data were reported in a manner that prevented the identification of individual respondents.

4. **Transparency and Integrity:** The study adhered to the highest standards of transparency and integrity. Findings were reported honestly and accurately, and all sources were properly cited. Potential conflicts of interest were disclosed, ensuring that the research process remained unbiased and trustworthy.

5. **Beneficence and Justice:** In terms of beneficence, the study aimed to maximize the benefits of research while minimizing potential harms. The research was designed to provide valuable insights into the topic under investigation, with the potential to contribute to the broader knowledge base. The study also aimed to uphold principles of justice by ensuring that participants were selected in a fair and equitable manner.

6. **Social Responsibility:** The study recognized its social responsibility. It considered the potential societal impact of the research, both in terms of its contributions to knowledge and its ethical, legal, and social implications. The study aimed to conduct research that would be of benefit to society and that would contribute to ethical and responsible practices within the field.

By conscientiously applying research ethics throughout the study, the research team sought to ensure that the rights and well-being of participants were respected and that the study's findings would be both credible and socially responsible. Adherence to ethical principles not only upholds the integrity of the research but also serves to maintain public trust and confidence in the research process.

CHAPTER THREE

RESULTS

CHAPTER 3: RESULTS

This chapter describes the findings of the study. First, the study defines the descriptive statistics of the respondents. Second, the study calculates the KMO test while testing and assessing exploratory factor analysis (EFA) using IBM SPSS. The study also tests the common method bias (CMB) using IBM SPSS. Third, the study tests the confirmatory factor analysis (CFA) using IBM AMOS software. The study uses the beta, t-values, and p-values to test the proposed research hypotheses.

3.1 Descriptive Statistics

The study reported that 67% of the managers were medium-level managers, and 33% of the managers were top-level managers. 54.6% of the managers from front-desk managers, and 45.4% of the managers were production-based managers. 26.5% of the firms have 1-5 years of age, 60.6% of the firms have 5-10 years of age, and 13% of the firms have 11-above years of age. 27.3% of the managers were female employees, and 72.7% of the managers were male employees.

Table 3.1. Descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Level Management	Medium level managers	238	67.0	67.0	67.0
	Top level managers	117	33.0	33.0	100.0
	Total	355	100.0	100.0	
Managerial status	Front-desk managers	194	54.6	54.6	54.6
	Production-based managers	161	45.4	45.4	100.0
	Total	355	100.0	100.0	
Firm age	1-05 years	94	26.5	26.5	26.5
	06-10 years	215	60.6	60.6	87.0
	11-above years	46	13.0	13.0	100.0
	Total	355	100.0	100.0	
Gender	Male	258	72.7	72.7	72.7
	Female	97	27.3	27.3	100.0
	Total	355	100.0	100.0	

3.2 Kaiser–Meyer–Olkin (KMO)

The Kaiser–Meyer–Olkin (KMO) test is an empirical measure that can ascertain how well data can be analyzed using factoring techniques. The test evaluates the appropriateness of the sampling both for each variable and the final model (Kaiser & Rice, 1974). This measurement is useful for the degree of variability among factors that could be considered common variations. The formula is as follows:

$$KMO = (\Sigma \text{ Correlation between variables})^2 / (\Sigma \text{ Correlation between variables})^2 + (\Sigma \text{ Anti-image correlations})^2$$

In this formula:

- "Correlation between variables" represents the pairwise correlations between all the variables in the dataset.
- "Anti-image correlations" are the partial correlations between variables, which measure how each variable is related to the remaining variables while controlling for the other variables.

The KMO value ranges from 0 to 1. Higher values, typically above 0.5 or 0.6, indicate better suitability for factor analysis, suggesting that the variables have substantial shared variance and are appropriate for summarizing into a smaller number of factors. A KMO value closer to 1 indicates a better fit for factor analysis. The percentage is greater, the KMO-value is greater, and the data are better to factor analysis the higher they are. The KMO and Bartlett tests consider all of the data at their disposal around each other. A KMO value greater than 0.5 and a statistical significance for Bartlett's test less than 0.05 indicates that the data exhibit a significant correlation. The degree to which a single factor is correlated with multiple other variables is called the factors' collinearity. Additionally, KMO values of 0.8 and 1 generally indicate that there is an adequate amount of sampling (Cureton & D'Agostino, 2018). As a rule, KMO values of 0.8 and 1 reveal that there is an adequate amount of sampling. Furthermore, KMO values that are lower than 0.6 evidence that the sampling is insufficient, and corrective action must be taken. On the other hand, some people choose to use a cutoff value of 0.5 (Cureton & D'Agostino, 2018). A KMO value that is relatively close to zero indicates that there are significant partial correlations in comparison to the overall correlations. To put it another way, there have been advancements in correlations, which presents a significant challenge for principal component analysis (Cureton & D'Agostino, 2018).

Table 3.2 shows the value of KMO sampling adequacy is 0.872 which is between 0.80 and 1 so there was good sample size with normality accuracy and adequacy. Additionally, there was lower Chi-square value. The study is using 5% significance level so the p-value should be lower than 5% (0.05) so the study proved that the sampling technique is good enough to elaborate the study participants.

Table 3.2. KMO and Barlett's test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.872
Bartlett's Test of Sphericity	Approx. Chi-Square	11285.743
	Df	780
	Sig.	.000

3.3 Correlation Coefficients

The direction and intensity of a linear link between two factors can be quantified using correlation coefficients (Benesty et al., 2009). The Pearson product-moment correlations are used when two continuous factors or one continuous and one categorical factor are compared. A positive correlation means that another variable grows when its value rises, while a negative correlation means that the opposite is true. The numerical number indicates the significance of the correlation (Zhou et al., 2016): The value 1 denotes a high correlation, whereas the value 0 indicates the absence of any correlation coefficient (Zhou et al., 2016). Pearson's "r " can take on values between one and negative, with one representing a high positive relationship and the negative one a perfect negative one. To put it another way, a value of 0 indicates the absence of any linear relationship. The two-tailed significance level is of interest to us as well, as it is found to be less than.000 here.

The correlation coefficient, often denoted as "r," is a statistical measure that quantifies the strength and direction of the linear relationship between two variables. There are several ways to calculate the correlation coefficient, but the most common formula is Pearson's correlation coefficient formula, which is used for measuring linear relationships between two continuous variables, X and Y. Here's the formula:

Pearson's Correlation Coefficient (r) formula:

$$r = \frac{\sum[(X - \bar{X})(Y - \bar{Y})]}{\sqrt{\left[\sum(X - \bar{X})^2 \sum(Y - \bar{Y})^2\right]}}$$

Where:

- r is the correlation coefficient.
- X and re the individual data points of the two variables.
- $\bar{X}$ and $\bar{Y}$ are the means (average) of variables X and Y, respectively.
- ΣΣ represents the summation symbol, meaning you should calculate the sum of the expressions within the brackets.
- The formula computes the covariance (numerator) and standard deviations (denominator) of X and Y.

The resulting correlation coefficient r will be a value between -1 and 1:

- If r is close to 1, it indicates a strong positive linear relationship (as X increases, Y increases).
- If r is close to -1, it indicates a strong negative linear relationship (as X increases, Y decreases).
- If r is close to 0, it indicates a weak or no linear relationship between the variables.

Pearson's correlation coefficient is a widely used method, but there are other correlation coefficients, such as the Spearman rank correlation coefficient or the Kendall tau rank correlation coefficient, which are used for variables that may not follow a linear pattern or when data is in ordinal or ranked form.

With an alpha of.05, the accepted standard, the study demonstrates all positive relationships among the study variables. The study identified supplier involvement with the strongest correlation coefficient with cross-functional coordination with 0.564**. On the other side, disruptive innovation has a stronger positive correlation with firm performance, and it was the stronger correlation coefficient with 0.419**. Finally, there are positive correlation coefficients among the study variables.

Table 3.3. Descriptive statistics, reliabilities, and correlation matrix.

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10	11
1. Firm Size	3.46	0.492											
2. Firm Age	4.18	0.916	0.112*										
3. Regulations	2.750	1.201	0.036	0.092	(0.934)								
4. Technology	4.179	0.752	0.010	0.018	0.052	(0.870)							
5. Cross-functional coordination	3.293	1.510	0.150**	0.127*	0.018	0.001	(0.944)						
6. Supplier involvement	3.172	1.399	0.005	0.143**	0.069	0.012	0.564**	(0.941)					
7. Market focus	4.010	1.097	0.022	0.107*	0.196**	0.098	0.262**	0.288**	(0.893)				
8. Exploratory Innovation	3.713	1.041	0.098	0.017	0.256**	0.158**	0.196**	0.169**	0.130*	(0.905)			
9. Exploitative Innovation	3.987	0.869	0.056	0.027	0.183**	0.113*	0.110*	0.116*	0.125*	0.579**	(0.910)		
10. Disruptive Innovation	3.999	0.876	0.012	0.063	0.074	0.315**	0.043	0.033	0.037	0.111*	0.155**	(0.855)	
11. Firm Performance	4.094	0.920	0.036	0.005	0.178**	0.014	0.069	0.094	0.014	0.230**	0.262**	0.419**	(0.944)
Note: N = 355, *$p \leq 0.05$, **$p \leq 0.01$; Cronbach Alpha values are indicated in parentheses.													

3.4 Common Method Bias (CMB)

Common method bias (CMB) occurs when the instruments produce variances in responses instead of the genuine behavioral patterns of the participants that the instruments aim to uncover. The instruments try to reveal the participants' true predispositions (Podsakoff et al., 2012). Podsakoff and colleagues (2003) have explained the utilization of the CMB test. CMB refers to the misleading variance attributed to the measurement technique rather than to the variables the measures are believed to represent. This is in contrast to the true variance, which is attributable to the measured variables. The test shows that 9 factors with no single factor loadings explained 17.458% of the total variance. It means it is below a threshold value of 50% (Podsakoff et al., 2012). Finally, it was concluded that CMB is not the major concern in this study.

Common Method Bias (CMB) = r_marker_construct

Where:

- CMB: Common Method Bias
- r_marker_construct: The correlation between the marker variable and the construct variable of interest.

Table 3.4. Common method bias

Total Variance Explained							
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	7.782	19.456	19.456	6.983	17.458	17.458	5.629
2	6.110	15.276	34.732	6.179	15.447	32.905	5.391
3	4.056	10.141	44.873	3.764	9.409	42.314	3.698
4	3.765	9.412	54.286	3.291	8.228	50.542	4.945
5	2.847	7.118	61.404	2.826	7.064	57.606	4.736
6	2.260	5.649	67.053	1.809	4.523	62.129	3.639
7	1.634	4.085	71.138	1.708	4.269	66.399	5.070
8	1.587	3.967	75.105	1.132	2.829	69.228	3.253
9	1.292	3.229	78.334	1.162	2.906	72.134	3.143
10	.634	1.584	79.918				

11	.503	1.258	81.176				
12	.485	1.212	82.388				
13	.470	1.175	83.562				
14	.427	1.066	84.629				
15	.407	1.018	85.647				
16	.377	.943	86.590				
17	.373	.932	87.522				
18	.358	.896	88.418				
19	.341	.853	89.271				
20	.336	.840	90.110				
21	.299	.748	90.858				
22	.289	.724	91.582				
23	.285	.714	92.295				
24	.254	.634	92.930				
25	.249	.623	93.553				
26	.239	.597	94.150				
27	.231	.577	94.727				
28	.217	.544	95.270				
29	.209	.524	95.794				
30	.202	.504	96.298				
31	.189	.473	96.771				
32	.188	.471	97.241				
33	.175	.438	97.679				
34	.155	.388	98.068				
35	.153	.383	98.451				
36	.145	.363	98.814				
37	.133	.332	99.146				
38	.126	.316	99.461				
39	.110	.275	99.737				
40	.105	.263	100.000				
Extraction Method: Maximum Likelihood.							
a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.							

Inferential Statistics

After descriptive statistics, the next step was to find the results of inferential statistics. Inferential statistics deals with data analysis techniques to calculate the estimates to describe the targeted population from the sample used. This section elaborates on the suitability of the measurement model using Cronbach alpha, discriminant, convergent validity, construct reliability and composite reliability, and causal model with the help of path coefficient and model fitness indices. Finally, the decision for the hypothesis for acceptance or rejection is discussed. For this purpose, the structural equation modelling (SEM) technique was used to analyse the results.

3.5 Validating and Reliably Measuring Variables

Before testing the rejection and acceptance of the hypothesized relationships, the study should first evaluate the validity and reliability of the measurement constructs in the model (Henseler, Hubona & Ray, 2016; Khoi & Tuan, 2018; Sarstedt & Cheah, 2019; Purwanto, Asbari & Santoso, 2021). In order to assess the validity and reliability of the measurement constructs, two fundamental parameters are set, e.g., convergent validity and discriminant validity. On the other hand, for analyzing the construct reliability, Cronbach alpha and composite reliability of the measurement constructs are evaluated and assessed (Khoi & Tuan, 2018; Sarstedt & Cheah, 2019). Accordingly, the component matrix with SPSS is used to draw results related to constructing validity and reliability. Therefore, the study conducted a series of dimension reduction techniques in SPSS to reach a final acceptable value.

3.5.1 Reliability of The Measurement Constructs

Construct reliability of the constructs is measured while examining Cronbach alpha and composite reliability (Henseler, Hubona & Ray, 2016; Khoi & Tuan, 2018; Sarstedt & Cheah, 2019). The researchers claimed that Cronbach alpha is the internal consistency among the construct observed indicators, and composite reliability is the overall construct's reliability value (Purwanto, Asbari & Santoso, 2021). Therefore, testing of construct reliability is required in both senses, e.g., Cronbach alpha and composite reliability. In the case of the model, internal consistency is assessed through the construct reliability and validity, where a high correlation between the constructs and their validity and reliability is required (Khoi & Tuan, 2018; Wong, 2018). The measurement model examines the inner loadings, internal consistency, average

variance extracted, and the square root of average variance extracted. Higher internal consistency of the measurement model is the initial step required to anticipate the accurate result for the causal model. Internal consistency of the items also ensures the suitability of scale in a specific context. Internal consistency is usually assessed through Cronbach's Alpha value. A higher value of Alpha is desired for consistency and reliability for item use. The formula for Cronbach's alpha is as follows:

$$\alpha = \frac{K}{K-1}\left(1 - \frac{\sum_{i=1}^{K}\sigma_i^2}{\sigma_T^2}\right)$$

Where:

- α (Cronbach's alpha) is the reliability coefficient.
- K is the number of items (questions) in the test.
- σ_i^2 is the variance of the score on each item (question)
- σ_T^2 is the variance of the total test scores.

Following are the threshold values of the internal consistency of the items (Kline, 2018).

Table 3.5.1 Cronbach alpha Criterion

Cronbach's alpha (α)	**Internal consistency**
α ≥ 0.9	Excellent
α ≥ 0.8	Good
α ≥ 0.7	Acceptable
α ≥ 0.6	Questionable
α ≥ 0.5	Poor
0.5 > α	Unacceptable

Cronbach's alpha ranges from 0 to 1. Higher values of alpha indicate greater internal consistency among the items, implying that the items in the test are measuring the same underlying

construct. Generally, a Cronbach's alpha of 0.7 or higher is considered acceptable for research purposes, but the specific threshold may vary depending on the context and field of study.

3.5.2 Reliability of the Variables

The study assesses construct reliability in terms of Cronbach alpha and composite reliability. Cronbach alpha value refers the international consistency among the constructs-items and Composite reliability shows the overall reliability value of the construct. The previous studies recommended that a Cronbach alpha value higher than 0.60 indicates an acceptable range of internal consistency (Wong, 2018), while composite reliability for each construct should be higher than 0.70 (Henseler, Hubona & Ray, 2016). The study found four items measured regulation (α = 0.934), compliance with regulations, imposed penalties, attainment, and inspection. Similarly, four items measured technology (the latest green technology, exploitation of potential technology, setting up R&D unit, and the efficiency of green technology) (α = 0.870). Five items measured cross-functional coordination (the effectiveness of the cross-departmental communication system, time basis of decisions, awareness of the collaboration among team members, the obligation of members, and support from the team chairperson (α = 0.944). Four items measured supplier's involvement (assessment, sharing information, collaboration, and creating awareness (α = 0.941). Lastly, four items measured market focus (target market, market assessment, active engagement, and customers' views) (α = 0.893). Ambidextrous innovation was an integrative construct of exploratory innovation and exploitative innovation. Following previous studies (Atuahene-Gima, 2018; He and Wong, 2004), both exploratory innovation (α = 0.905) and exploitative innovation (α = 0.910) were measured using a four-item scale drawn from (Xie et al., 2020). A seven-item scale was drawn to measure firm performance (α = 0.944) (Zhang et al., 2016). A 4-item scale was used to measure disruptive innovation (α = 0.855), developed by (Govindarajan et al., 2016).

Additionally, the study significantly measured composite reliability (CR) by explaining that there are 0.934 CR for regulations, 0.871 for technology, 0.944 for cross-functional coordination, 0.939 for supplier coordination, 0.887 for market focus, 0.907 for exploratory innovation, 0.911 for exploitative innovation, 0.852 for disruptive innovation and 0.943 for firm performance. So, the study proved that there were good validity and reliability of the measurement variables.

3.5.3 Validity of The Variables

Dimension reduction is an essential weight factor of regressions. Convergent validity of the measurement constructs is assessed in terms of factor loadings and average variance extracted (AVE), and these criteria have been set by Sarstedt & Cheah (2019). In the case of applying dimension reduction, a researcher begins by examining the indicator factor's loading using the component matrix approach (Purwanto, Asbari & Santoso, 2021; Wong, 2018).

The Average Variance Extracted (AVE) is a statistic used in structural equation modeling (SEM) to assess the convergent validity of a set of measurement items or indicators. It measures the extent to which the items within a latent construct share more variance with each other than with the measurement error. AVE values range from 0 to 1, with higher values indicating better convergent validity.

The formula to calculate the AVE for a latent construct in SEM is as follows:

$$AVE = (\Sigma\lambda^2) / (\Sigma\lambda^2 + \Sigma\varepsilon)$$

Where:

- $\Sigma\lambda^2$ is the sum of the squared factor loadings of the items on the latent construct.
- $\Sigma\varepsilon$ is the sum of the error variances of the items associated with the latent construct.

Factor loadings above 0.7 explain that the construct is over 50% of the indicator variance (Henseler et al., 2016; Henseler, Hubona & Ray, 2016; Khoi & Tuan, 2018). Another researcher argues that items have high factor loadings (>0.5) on their construct (Wong, 2018). The study follows the threshold value criteria of Sarstedt & Cheah (2019), which indicates that the factor loadings should be higher than 0.70. On the other hand, AVE should be greater than the squared correlation (Fornell and Larcker, 1981), further argues that the square root of AVE of any construct must be higher than the correlation with other constructs. Construct validity consists of two measures, i.e., AVE (construct wise) and Cross loadings (item wise). Validity is considered as the discriminant and convergent validity. Convergent validity is evaluated by examining each variable's average variance extracted (AVE) of all items. The average variance extracted can also

be calculated employing square loadings of all construct indicators. AVE value above 0.5 is acceptable, showing 50% of the variance of construct items (Sarstedt & Cheah, 2019; Purwanto, Asbari & Santoso, 2021; Wong, 2018). Cross loading of each item was higher than 0.6 suggested by Sarstedt & Cheah (2019), Purwanto, Asbari & Santoso (2021), and Wong (2018). So it could be said that the construct validity of all contracts was valid both construct-wise and items-wise, i.e., AVE and cross-loadings, respectively. The convergent validity of the present research constructs is proved higher than the values of different researchers. Shared variance demonstrates the correlation square between any two constructs. It means that if the correlation coefficient between two constructs (x,y) is 0.5, then the shared variance between two constructs (x,y) would be 0.25 (Henseler, Hubona & Ray, 2016).

By examining convergent validity, the study found the validity of the variables, e.g., factor loading and average variance extracted. Second, the present study found the validity of all the variables; factor loadings. The study found that values of factor loadings (Henseler, Hubona & Ray, 2016) and AVE (Henseler, Hubona & Ray, 2016; Khoi & Tuan, 2018) are higher than the threshold values, so there was good convergent validity. Finally, the convergent validity of all variables was proved to be valid (Table 3.6).

Table 3.5. Validity and reliability

Variables	Items code	λ	Mean	Corrected item-total correlation	CR	AVE
Regulations	**RE**				**0.934**	**0.780**
Our company has to comply with regulation	RE1	0.843	2.68	0.823		
Penalties will be imposed if our company does not comply with the regulation	RE2	0.914	2.84	0.867		
There is attainment after the implementation of the regulation in our company	RE3	0.899	2.77	0.861		
An inspection is carried out in our company periodically	RE4	0.873	2.72	0.825		
Technology	**TE**				**0.871**	**0.628**
Our company has deployed the latest technology	TE1	0.753	4.13	0.688		
Our company continuously exploits the potential of technology	TE2	0.764	4.21	0.729		
Our company has made greater use of technology	TE3	0.796	4.15	0.705		
Our company has set up an in-house R&D unit	TE4	0.843	4.24	0.768		
Cross-functional coordination	**CF**				**0.944**	**0.771**
Our company has effective cross-departmental communication system/coordination	CF1	0.904	3.32	0.855		
Decisions were made on a timely basis with adequate opportunity for discussion in our cross-functional team	CF2	0.870	3.31	0.840		
There was an awareness of the collaboration among cross-functional team members rather than competition predominated	CF3	0.872	3.32	0.839		
Our cross-functional team members were highly committed to producing a quality product/service	CF4	0.902	3.26	0.854		
My team's chairperson offered support to cross-functional team members	CF5	0.814	3.26	0.818		
Supplier involvement	**SI**				**0.939**	**0.793**

Our company has shared proprietary information with key suppliers	SI1	0.853	3.14	0.857		
Our company does conduct suppliers' evaluation/assessment	SI2	0.955	3.13	0.910		
Our company is able to collaborate with key suppliers from the design process to integrate issues	SI3	0.860	3.22	0.846		
In our company, creating suppliers' awareness of the importance of technology becomes increasingly desirable	SI4	0.854	3.21	0.828		
Market focus	**MF**				**0.887**	**0.663**
Our company has established a specific target market	MF1	0.877	4.11	0.817		
In our company, preliminary market assessment is made before resources are assigned	MF2	0.809	4.05	0.781		
Our company encourages active engagement with customers in designing products	MF3	0.781	4.03	0.738		
Our company has managed to obtain customers' views on product ideas	MF4	0.818	3.85	0.734		
Exploratory Innovation	**EP**				**0.907**	**0.709**
Acquire manufacturing technologies and skills entirely new to the firm.	EP1	0.842	3.74	0.794		
Open up new markets.	EP2	0.857	3.68	0.810		
Acquire entirely new managerial and organizational skills that are important for innovation	EP3	0.889	3.70	0.818		
Enter new technology fields and introduce new generations of products	EP4	0.694	3.74	0.728		
Exploitative Innovation	**ET**				**0.911**	**0.719**
Invest mainly in enhancing skills and mature technologies.	ET1	0.815	3.93	0.790		
Target efforts on improving the efficiency of innovation processes rather than on initiating new ventures radically different from what firms are familiar with.	ET2	0.853	4.00	0.772		
Reduce production costs and the consumption of materials	ET3	0.898	3.93	0.839		

Base strategies on the knowledge and abilities that are already familiar to the firm, and then search for solutions to customer problems that are similar to existing solutions, rather than searching for completely new solutions.	ET4	0.755	4.09	0.767		
Disruptive Innovation	**DI**				**0.852**	**0.594**
We introduce highly disruptive new products	DI1	0.682	4.13	0.635		
Our new products are very attractive to a different customer segment at the time of product introduction	DI2	0.790	4.15	0.722		
Our new products are those where the mainstream customers found the innovations attractive over time as they were able to satisfy the requirements of the mainstream market	DI3	0.868	4.03	0.760		
The introduction of our new products helps us open up a new market	DI4	0.736	4.15	0.676		
Firm Performance	**P**				**0.943**	**0.705**
overall efficiency of operations	P1	0.854	4.07	0.181		
market share growth	P2	0.871	3.97	0.823		
return on investments	P3	0.843	4.05	0.836		
return on sales	P4	0.829	3.92	0.790		
profit growth	P5	0.911	4.18	0.876		
return on assets	P6	0.831	4.36	0.822		
sales growth	P7	0.752	3.95	0.736		
Notes: All factor loadings are significant at ($p < .001$), $N = 355$; λ = factor loadings, AVE = average variance extracted, CR = composite reliabilities						

3.6 Structural Model Fit

Structural Equation Modeling (SEM) is a statistical technique used to evaluate and validate the fit of a proposed structural model to empirical data. To assess the fit of an SEM model, several fit indices are commonly used. Each fit index has its own formula and interpretation. Values for an index of fit are normally normalized to fall somewhere between zero and 1. The study follows the Model-fitting measures such as the Chi-Square, Degrees of freedom, Comparative fit index (CFI), Goodness-of-fit index (GFI), Adjusted goodness-of-fit (AGFI), and Root means the square error of approximation (RMSEA), Root mean square residuals (RMSR), and Normed fit index (NFI) (Gignac et al., 2006; Shek & Yu, 2014; Yakubu & Dasuki, 2018). Following the description of the most common model fit indices along with their formulas:

The Chi-Square (χ^2) statistic is a measure used in various statistical analyses, including structural equation modeling (SEM), to assess the goodness of fit of a model to the observed data. In the context of SEM, the chi-square statistic measures the difference between the observed covariance matrix and the expected covariance matrix predicted by the model. Smaller chi-square values indicate a better fit.

The specific formula for the chi-square statistic can vary depending on the software and estimation method used. It is typically computed as follows:

$$\chi^2 = \Sigma\ [(O - E)^2 / E]$$

Where:

- χ^2: Chi-Square statistic, a measure of the discrepancy between the observed and expected covariance matrices.
- O: Observed covariance matrix, which contains the actual covariances and variances among variables in the dataset.
- E: Expected covariance matrix, which is the matrix of covariances and variances predicted by the structural model being tested.

The formula calculates the squared differences between the observed and expected covariance values, standardized by the expected values. The sum of these standardized squared differences across all elements of the covariance matrix gives the chi-square statistic.

Degrees of freedom (df) refer to the number of values in the final calculation of a statistic that

are free to vary. In structural equation modeling (SEM) and many other statistical analyses, degrees of freedom are an important concept used to assess the goodness of fit of a model.
In SEM, degrees of freedom are typically associated with the model's complexity, and they play a crucial role in determining whether the model adequately represents the data. Degrees of freedom are calculated as follows:

Degrees of Freedom (df) = Number of Observed Variables – Number of Estimated Parameters

Where:

- Number of Observed Variables: This is the total number of variables in the analysis, both observed and latent variables.
- Number of Estimated Parameters: These are the parameters that the model is estimating. In SEM, estimated parameters can include regression coefficients, error variances, and covariances, among others.

Degrees of freedom help assess the trade-off between model complexity and goodness of fit. A higher number of degrees of freedom allows the model to better capture the data, while a lower number of degrees of freedom may result in an overfit or underfit model. The chi-square statistic, a commonly used measure in SEM, is divided by the degrees of freedom to obtain the Chi-Square/df ratio, which is a normalized measure of goodness of fit. Lower Chi-Square/df values indicate a better fit of the model.

The Chi-Square divided by Degrees of Freedom (Chi-Square/df) is a fit index used in structural equation modeling (SEM) to assess the goodness of fit of a structural model. It provides a normalized version of the chi-square statistic, which is more interpretable and allows for comparisons between models with different degrees of freedom. The formula for Chi-Square/df is straightforward:

$$\text{Chi-Square/df} = \chi^2 / \text{df}$$

Where:

- Chi-Square/df: Chi-Square divided by Degrees of Freedom, a normalized measure of how well the model fits the data.
- χ^2: The observed chi-square statistic for the model.
- df: Degrees of freedom, indicating the number of estimated parameters in the model.

The Chi-Square/df ratio indicates how well the model fits the data relative to its complexity. A Chi-

Square/df ratio close to 1 suggests a good fit, meaning that the model provides an adequate representation of the observed data while considering the trade-off between goodness of fit and model complexity.

The Root Mean Square Error of Approximation (RMSEA) is a fit index commonly used in structural equation modeling (SEM) to assess the goodness of fit of a model. The formula for RMSEA is as follows:

$$RMSEA = \sqrt{((\chi^2 - df) / [(df * (df - 1))])}$$

Where:

- RMSEA: Root Mean Square Error of Approximation, a measure of how well the model fits the data.
- χ^2: Chi-square statistic, which measures the difference between the observed covariance matrix and the expected covariance matrix in the model.
- df: Degrees of freedom, indicating the number of estimated parameters in the model.

The RMSEA formula calculates the square root of the difference between the chi-square statistic (χ^2) and the degrees of freedom (df), divided by the product of df and (df – 1). The result is a measure that indicates the discrepancy between the model and the population covariance matrix, adjusted for the complexity of the model and the degrees of freedom. Smaller values of RMSEA (typically less than 0.08) suggest a better fit, meaning that the model provides a good approximation of the observed data.

The Comparative Fit Index (CFI) is a widely used fit index in structural equation modeling (SEM) that helps assess the goodness of fit of a structural model. The CFI compares the target model to a baseline model, often an independence model or a null model, to evaluate the improvement in fit. The formula for CFI can be expressed in different ways, but one common formulation is as follows:

$$CFI = [1 - (\chi^2 \text{ of the model} / \chi^2 \text{ of the null model})] \text{ or } CFI = \text{Tucker-Lewis Index (TLI)}$$

Where:

- CFI: Comparative Fit Index, a measure of how well the model fits the data.
- χ^2 of the model: Chi-square statistic for the model being tested.
- χ^2 of the null model: Chi-square statistic for the null or independence model.
- Tucker-Lewis Index (TLI): An alternative name for CFI.

The CFI assesses the improvement in fit provided by the target model compared to a less complex baseline model. A CFI value close to 1 (typically greater than 0.90) suggests a good fit. The CFI is a relative fit index, meaning it compares the model under investigation to a less complex model, and higher values indicate a better fit. It provides insights into how well the model accounts for the observed data beyond what would be expected by chance.

The Normed Fit Index (NFI) is a fit index used in structural equation modeling (SEM) to evaluate the goodness of fit of a structural model. It measures the proportion of improvement in fit relative to a null model, such as an independence model. The formula for NFI is as follows:

$$NFI = 1 - (\chi^2 \text{ of the model} / \chi^2 \text{ of the null model})$$

Where:

- NFI: Normed Fit Index, a measure of how well the model fits the data.
- χ^2 of the model: Chi-square statistic for the model being tested.
- χ^2 of the null model: Chi-square statistic for the null model (often an independence model).

The NFI assesses how much better the proposed model fits the data compared to a baseline model that assumes no relationships among variables (null model). A higher NFI indicates a better fit, with values close to 1 suggesting a good fit. Researchers often use NFI along with other fit indices, such as the Comparative Fit Index (CFI) and the Root Mean Square Error of Approximation (RMSEA), to comprehensively evaluate the overall goodness of fit of a structural equation model. These fit indices help researchers assess the degree to which their models represent the relationships among variables in the data.

The Goodness of Fit Index (GFI) is a commonly used fit index in structural equation modeling (SEM) to assess the goodness of fit of a structural model. The GFI measures the proportion of the variance-covariance matrix explained by the model. The formula for GFI can be expressed in different ways, but one common formulation is as follows:

$$GFI = 1 - (E(\chi^2) / df)$$

Or, in an alternative form:

$$GFI = 1 - (\Sigma [(O - E)^2] / (N * (N - 1))) / df$$

Where:

- GFI: Goodness of Fit Index, a measure of how well the model fits the data.
- $E(\chi^2)$: The expected chi-square value for the model.

- χ^2: The observed chi-square statistic for the model.
- df: Degrees of freedom, representing the number of estimated parameters in the model.
- O: Observed covariance matrix.
- E: Expected covariance matrix.
- N: The number of data points (observations).

The GFI evaluates how well the model reproduces the observed data by comparing the observed covariance matrix (O) with the expected covariance matrix I derived from the model. A GFI value close to 1 indicates a good fit, meaning that the model adequately accounts for the relationships among variables in the data.

The Adjusted Goodness of Fit Index (AGFI) is a fit index used in structural equation modeling (SEM) to evaluate the goodness of fit of a structural model. It is an adjusted or normalized version of the Goodness of Fit Index (GFI) and takes into account the degrees of freedom in the model. The formula for AGFI is as follows:

$$AGFI = GFI / (1 – [df / N])$$

Where:

- AGFI: Adjusted Goodness of Fit Index, a measure of how well the model fits the data, adjusted for degrees of freedom.
- GFI: Goodness of Fit Index, which measures the proportion of the variance-covariance matrix explained by the model.
- df: Degrees of freedom, indicating the number of estimated parameters in the model.
- N: The number of data points (observations).

The AGFI adjusts the GFI by considering the complexity of the model and the degrees of freedom. A higher AGFI suggests a better fit, indicating that the model provides a good approximation of the observed data while accounting for the trade-off between model complexity and goodness of fit.

The Root Mean Square Residual (RMR) is a fit index used in structural equation modeling (SEM) to assess the goodness of fit of a structural model. RMR measures the average standardized residual, providing an indication of the discrepancy between the observed and predicted covariance matrices. The formula for RMR is as follows:

$$RMR = \sqrt{(\Sigma [(O - E)^2] / (N * (N - 1)))}$$

Where:

- RMR: Root Mean Square Residual, a measure of how well the model fits the data.
- O: Observed covariance matrix.
- E: Expected covariance matrix predicted by the model.
- N: The number of data points (observations).

The RMR represents the average standardized residual, which is the average absolute difference between the observed and predicted covariance values, standardized for the sample size and degrees of freedom. Smaller RMR values indicate a better fit, meaning that the model provides a good approximation of the observed data.

The Standardized Root Mean Square Residual (SRMR) is a widely used fit index in structural equation modeling (SEM) to assess the goodness of fit of a structural model. SRMR is similar to the Root Mean Square Residual (RMR), but it is a standardized measure, which makes it easier to compare the fit of different models. The formula for SRMR is as follows:

$$SRMR = \sqrt{(\Sigma [(O - E)^2] / (N * (N - 1)))}$$

Where:

- SRMR: Standardized Root Mean Square Residual, a standardized measure of how well the model fits the data.
- O: Observed covariance matrix.
- E: Expected covariance matrix predicted by the model.
- N: The number of data points (observations).

The SRMR represents the average standardized residual, which is the average absolute difference between the observed and predicted covariance values, standardized for the sample size and degrees of freedom. Smaller SRMR values indicate a better fit, meaning that the model provides a good approximation of the observed data.

The Incremental Fit Index (IFI) is a fit index commonly used in structural equation modeling (SEM) to assess the goodness of fit of a structural model. The IFI measures the improvement in fit provided by the target model compared to a baseline model, often an independence model or a null

model. The formula for IFI is as follows:

$$IFI = 1 - [(\chi^2 \text{ of the model} - \chi^2 \text{ of null model}) / (\text{df of model} - \text{df of null model})]$$

Where:

- IFI: Incremental Fit Index, a measure of how well the model fits the data.
- χ^2 of the model: Chi-square statistic for the model being tested.
- χ^2 of the null model: Chi-square statistic for the null or independence model.
- df of model: Degrees of freedom for the model.
- df of null model: Degrees of freedom for the null model.

The IFI evaluates the improvement in fit provided by the proposed model compared to a baseline model that assumes no relationships among variables (null model). A higher IFI value, closer to 1, indicates a better fit, signifying that the model under investigation accounts for the observed data significantly better than the baseline model. Table below shows measures types and the good fit for each.

Measure	Name	Description	Good fit if:
X2	Model Chi Square	Assess overall fit and the discrepancy between the sample and fitted covariance matrices. Sensitive to sample size. H0: The model fits perfectly.	p-value> 0.05
(A)GFI	(Adjusted) Goodness ofFit	GFI is the proportion of variance accounted for by the estimated population covariance. Analogous to R2.AGFI favors parsimony.	GFI ≥ 0.95 AGFI ≥0.90
(N)NFI TLI	(Non)Normed Fit Index Tucker Lewis index	An NFI of .95, indicatesthe model of interest improves the fit by 95% relative to the null model. NNFI is preferable for smaller samples. Sometimes the NNFI is called the Tucker Lewis index (TLI)	NFI ≥ 0.95 NNFI ≥0.95
CFI	Comparative Fit Index	A revised form of NFI. Not very sensitive to sample size. Compares the fit of a target model to the fit of an independent, or null, model.	CFI ≥.90
RMSEA	Root Mean Square Error of Approximation	A parsimony-adjusted index. Values closer to 0 represent a good fit.	RMSEA < 0.08
(S)RMR	(Standardized) Root Mean Square Residual	The square-root of the difference between the residuals of the sample covariance matrix and the hypothesized model. If items vary in range (i.e. some items are 1-5, others 1-7) then RMR is hard to interpret, betterto use SRMR.	SRMR <0.08
AVE (CFA only)	Average Value Explained	The average of the R2s for items within a factor	AVE >.5

Table 3.6 Measures good fit

Source Principles and Practice of Structural Equation Modeling. Rex B. Kline. 2005

The study runs a series of models by ensuring confirmatory factor analysis and fit indices. First of all, the study ran a single-factor model with all variables' items and found that all fit indices, i.e., comparative fit index (CFI), Goodness-of-fit index (GFI), Adjusted goodness-of-fit (AGFI), and Root means, the square error of approximation (RMSEA), Root mean square residuals (RMSR), and Normed fit index (NFI) do not meet the criteria of acceptance. Second, the study tested the whole measurement variables (i.e., CFC, SIO, MF, ETI, and DIO) into two factors and found that comparative fit index (CFI), Goodness-of-fit index (GFI), Adjusted goodness-of-fit (AGFI), and Root means the square error of approximation (RMSEA), Root mean square residuals (RMSR), and Normed fit index (NFI) do not meet the criteria of acceptance. Third, the study divided the measurement scales into three factors (i.e., REG, SIO, MF, and DI0) and found that comparative fit index (CFI), Goodness-of-fit index (GFI), Adjusted goodness-of-fit (AGFI), and Root means the square error of approximation (RMSEA), Root means square residuals (RMSR), and Normed fit index (NFI) do not meet the criteria of acceptance. Fourth, the study ran a model by dividing the variables into four factors (i.e., PER, ETI, MF, and DIO) and again found that comparative fit index (CFI), Goodness-of-fit index (GFI), Adjusted goodness-of-fit (AGFI), and Root means the square error of approximation (RMSEA), Root mean square residuals (RMSR), and Normed fit index (NFI) do not meet the criteria of acceptance. Fifth, the study ran the model with 5 factors (i.e., MF, EPI, TEC, and DIO) and found that comparative fit index (CFI), Goodness-of-fit index (GFI), Adjusted goodness-of-fit (AGFI), and Root means the square error of approximation (RMSEA), Root mean square residuals (RMSR), and Normed fit index (NFI) do not meet the criteria of acceptance. Sixth, the study ran the model with six factors (i.e., REG, EPI, TEC, and DIO) and found that comparative fit index (CFI), Goodness-of-fit index (GFI), Adjusted goodness-of-fit (AGFI), and Root means the square error of approximation (RMSEA), Root mean square residuals (RMSR), and Normed fit index (NFI) do not meet the criteria of acceptance. Seventh, the study ran the model with seven factors (i.e., EPI, MF, TEC, ETI, and DIO) and again found that comparative fit index (CFI), Goodness-of-fit index (GFI), Adjusted goodness-of-fit (AGFI), and Root means the square error of approximation (RMSEA), Root mean square residuals (RMSR), and Normed fit index (NFI) do not meet the criteria of acceptance. Eight, the study ran the model by adding eight factors (i.e., PER and DIO) and found that comparative fit index (CFI), Goodness-of-fit index (GFI), Adjusted goodness-of-fit (AGFI), and Root means the square error of approximation (RMSEA), Root mean square residuals (RMSR), and Normed fit index (NFI) do not meet the criteria of acceptance. Finally, with 9 factors, the study found that all fit indices values are according to the threshold values, so the study proved the model fitness with 9 factors of the measurement variables (Gignac et al., 2006;

Shek & Yu, 2014).

Table 3.7 Confirmatory factor analysis

Model	χ^2	*df*	χ^2/df	$\Delta\chi^2$ (Δdf)	IFI	TLI	CFI	RMR	RMSEA
Nine-factor model: baseline model	880.727	686	1.284		0.982	0.980	0.982	0.047	0.028
Eight-factor model: combining PER and DIO	2166.295	740	2.927	1285.568 (54)	0.871	0.863	0.870	0.262	0.074
Seven-factor model: combining EPI, MF, TEC, ETI, and DIO	3476.420	728	4.697	2595.693 (54)	0.751	0.732	0.750	0.268	0.103
Six-factor model: combining REG, EPI, TEC, and DIO	3686.017	740	4.981	2805.29 (54)	0.733	0.717	0.732	0.272	0.106
Five-factor model: combining MF, EPI, TEC, and DIO	3736.482	740	5.049	2856.055 (54)	0.728	0.712	0.727	0.277	0.107
Four-factor model: combining PER, ETI, MF, and DIO	3827.703	740	5.173	2946.976 (54)	0.720	0.703	0.719	0.280	0.109
Three-factor model: combining REG, SIO, MF, and DIO	4278.889	740	5.782	3398.162 (54)	0.616	0.660	0.678	0.316	0.116
Two-factor model: combining CFC, SIO, MF, ETI, and DIO	4375.416	740	5.913	3494.689 (54)	0.670	0.651	0.669	0.202	0.118
One-factor model: combining all into one factor	9379.817	741	12.675	8499.99 (55)	0.216	0.170	0.213	0.412	0.182
Notes: Regulations = REG, Technology = TEC, Cross-functional coordination = CFC, Supplier involvement = SIO, Market focus = MF, Exploratory Innovation = EPI, Exploitative Innovation = ETI, Disruptive Innovation = DIO, Firm Performance =PER; Incremental Fit Index = IFI; Tucker–Lewis's index =TLI; Comparative fit index = CFI, Root-mean-square error of approximation = RMSEA									

3.7 Assessment of Path Model

AMOS creates t-statistics to assess the significance levels of the inlet and outlet models by employing a technique known as bootstrapping to generate the statistics. As discussion above, the present study applied bootstrapping technique with SEM for the better understanding and analysis of

both path model and measurement items. The present study applied bootstrapping technique within model to investigate the model for regression analysis that presents better structural model fitness by applying comparative fit index (CFI), Goodness-of-fit index (GFI), Adjusted goodness-of-fit (AGFI), and Root means the square error of approximation (RMSEA), Root mean square residuals (RMSR), and Normed fit index (NFI). After running bootstrapping, the study goes to "Path Coefficient" for the investigation of *t*-values, Mean and standard deviation to check whether the path coefficient is significant or not. Using two-tailed test with a significance level p<5 and standard error. Although t-statistics are greater than 1.96 then there would be significant path coefficient (Purwanto, Asbari & Santoso, 2021; Wong, 2018), but on the other hand, the researchers should not only see the significant or non-significant relationship between constructs but it should also see effect size.

3.7.1 Testing Path Coefficient

The estimation of path coefficient is based on regressions in the structural model in which each endogenous latent construct is followed by its predecessor. For the best examination of model fitness in AMOS, the structural model provides the best parameter estimation by explaining endogenous latent variances. AMOS is different from CB-SEM (Shek & Yu, 2014) but the model's goodness associated with AMOS-SEM is better than CB-SEM. AMOS-SEM has numerous reputations for handling multivariate analysis while no other tool has (Shek & Yu, 2014). The measurement model is assessed in AMOS through the heuristic criteria evaluated by model predictive capabilities (Gignac et al., 2006; Shek & Yu, 2014). The path coefficient has standard values from +1 to -1 (Wong, 2018).

The formula for calculating path coefficients in structural equation modeling (SEM) is based on the standardization of the path estimates, which involves dividing the covariance between the variables involved in the path by the product of the standard deviations of the variables. Here's the formula for a single path coefficient in SEM:

Path Coefficient (β) = Covariance (X, Y) / (Standard Deviation(X) * Standard Deviation(Y))

Where:

- β represents the path coefficient (the standardized effect or relationship between variables X and Y).
- Covariance (X, Y) is the covariance between the variables X and Y in your structural model.
- Standard Deviation(X) is the standard deviation of variable X.

- Standard Deviation(Y) is the standard deviation of variable Y.

The path coefficient (β) provides information about the strength and direction of the relationship between variables X and Y after accounting for their variances. A positive β indicates a positive relationship, a negative β indicates a negative relationship, and the magnitude of β reflects the strength of the relationship, with values closer to 0 indicating weaker relationships and values farther from 0 indicating stronger relationships. In structural equation modeling software like AMOS, these path coefficients are typically estimated using maximum likelihood estimation, and the software will provide you with the standardized path coefficients as part of the model output.

The path model coefficient closer to +1 Indicates a higher positive relationship and, on the inverse side, shows the higher negative relationships. Closer to 0 indicates a weaker relationship. More close to zero value considers the non-significant relationship between the variables. When the t-value is greater than the critical value, then there is assumed that the path coefficient is significant at a certain level of probability (Sarstedt & Cheah, 2019) further explained that critical value for two tail is 1.65 with (β <.10), second 1.96 with (β <0.05) and third 2.57 with (β <0.01). But choices of the critical value with significant level are depended upon the type of study. Empirically, t values can be calculated by dividing path coefficient by standard error. But instead of choosing an empirical value, the researchers always prefer p values for rejection or acceptance of hypotheses. It can say that the coefficient value falls between +1.96 and -1.96 in the case of 0.05 probability of error and T-statistics greater than 1.96 (Henseler, Hubona & Ray, 2016; Sarstedt & Cheah, 2019). All these calculations are the same responses, but the researchers use different criteria for rejecting the hypothesis.

Path coefficient indicates how an exogenous construct links with an endogenous (Sarstedt & Cheah, 2019). If one or more mediators exist in the study, the researcher should follow the total effects to investigate the direct and indirect impact (Sarstedt & Cheah, 2019). Most of the research models include moderator analysis, which the researchers always overlook in AMOS (Gignac et al., 2006). Simply, they do not evaluate and interpret the output of moderation. For this problem, the researchers should report and assess the total effects (sum of direct and indirect effects between the variables (Sarstedt & Cheah, 2019). So, the present study follows the total effects of examining direct.

with reference to table results 3.11, The study reported that all dimensions of innovation drivers have a significant and positive effect on exploratory innovation. By testing the casual effects, the study found that regulations significantly and positively influenced exploratory innovation (β=0.221**); technology significantly and positively influenced exploratory innovation (β=0.201**); cross-

functional coordination significantly and positively influenced exploratory innovation (β=0.138**); supplier involvement significantly and positively influenced exploratory innovation (β=0.126*); and market focus also significantly and positively influenced exploratory innovation (β=0.124**) so the hypothesis 1 was supported and accepted. Besides, the dimensions of innovation drivers were also tested to influence exploitative innovation and the study found that regulations significantly and positively influenced exploitative innovation (β=0.130*); technology significantly and positively influenced exploitative innovation (β=0.12*); cross-functional coordination significantly and positively influenced exploitative innovation (β=0.163**); supplier involvement significantly and positively influenced exploitative innovation (β=0.179**) and market focus also significantly and positively influenced exploitative innovation (β=0.299**) so it was proved that innovation drivers significantly and positively influenced exploitative innovation and the hypothesis 2 was supported and accepted. Furthermore, the study claimed that market focus has the strongest effect on exploitative innovation.

Additionally, the study reported that exploratory innovation significantly and positively influenced firm performance (β=0.202**) so the hypothesis 3a was also supported and accepted. Exploitative innovation also significantly and positively influenced firm performance (β=0.279**) so the hypothesis 3b was also supported and accepted. The study found that exploitative innovation has a strongest effect on firm performance than exploratory innovation.

3.7.2 Mediating Relationships (Sobel Test)

The Sobel test is a statistical test used to determine the significance of a mediation effect in a mediation analysis. It assesses whether the indirect effect of an independent variable on a dependent variable through a mediator variable is statistically significant. The Sobel test formula is based on the standard error of the indirect effect. Here is the formula for the Sobel test:

Sobel's Z = (a * b) / sqrt (b^2 * SE(a)^2 + a^2 * SE(b)^2)

Where:

- Sobel's Z is the test statistic.
- "a" is the coefficient for the relationship between the independent variable and the mediator variable.
- "b" is the coefficient for the relationship between the mediator variable and the dependent variable.
- "SE(a)" is the standard error of the coefficient "a."

- "SE(b)" is the standard error of the coefficient "b."

The Sobel test compares the computed Z statistic to the standard normal distribution to determine if the indirect effect is statistically significant. If the Z statistic is significantly different from zero, it suggests that the indirect effect is statistically significant, indicating mediation. Sobel test can be tested manually using the formula, or through statistical software or online calculators that offer Sobel test functionality, which can automatically calculate the test statistic and associated p-value for you. This is particularly useful when dealing with larger datasets or complex models.

The significance of this value was examined by comparing It to that expected from a normally distributed value. The study considers an effect statistically significant if the Z-score is higher than 1.96 (Koopman, Howe & Hollenbeck, 2014). Therefore, the study tests the mediating roles of exploratory innovation and exploitative innovation between innovation drivers and firm performance. The study reported that exploratory innovation significantly and positively mediated the relationship between innovation drivers and firm performance with p=0.004<0.05, so hypothesis 4a was supported and accepted. Besides, exploitative innovation also significantly and positively mediated the relationship between innovation drivers and firm performance with p=0.000<0.05, so hypothesis 4b was supported and accepted.

Table 3.7.2. Mediating relationships

Relationships			**Sobel test**	
	Innovation drivers->exploratory innovation	**Exploratory innovation->Firm performance**	***t*-value**	***p*-value**
***H4a.* Innovation drivers->exploratory innovation->Firm performance**	0.44***	0.202**	2.819	0.004
***H4b.* Innovation drivers->exploitative innovation->Firm performance**	0.511***	0.279**	3.371	0.000

3.7.3 The Moderation Effect

To test for a moderation effect in statistics, typically use a regression-based approach. The most common way to test for moderation is by performing a moderated regression analysis. The formula for a moderated regression model can be expressed as follows:

$$Y = b0 + b1X + b2M + b3XM + \varepsilon$$

Where:

- Y represents the dependent variable.
- X represents the independent variable (the predictor).
- M represents the moderator variable.
- b0 is the intercept.
- b1 is the coefficient for the independent variable (main effect of X).
- b2 is the coefficient for the moderator variable (main effect of M).
- b3 is the coefficient for the interaction term (X*M), representing the moderation effect.
- ε represents the error term.

The interaction term (b3*X*M) is what tests the moderation effect. If the coefficient b3 is statistically significant, it indicates that the moderator variable M has a significant effect on the relationship between the independent variable X and the dependent variable Y. In other words, it suggests that the effect of X on Y varies depending on the levels of M. This is commonly interpreted as a moderation effect. To test for the significance of the moderation effect, you can use a t-test or an F-test, depending on the complexity of your model. The specific formula to calculate the test statistic for the interaction effect depends on the software or statistical package you are using. Moderation analysis assumes that the relationship between X and Y changes depending on the levels of the moderator M. It is essential to interpret the results carefully and understand the practical implications of any significant moderation affects you find in your analysis.

In refrence to the table results 3.11, The study reported that disruptive innovation significanlty and positively influenced firm performance (β=0.443**) so the direct effect of disruptive innovation on firm performance was positive and significant. Besides, disruptive innovation had a significant and positive moderated relationship between exploratory innovation and firm performance (β=0.168**) so the hypothesis 5a was supported and accepted. Meanwhile, disruptive innovation had also a significant and positive moderated relationship between exploitative innovation and firm performance (β=0.279**) so, the hypothesis H5b was also supported and accepted. Disruptive innvation can boost collaboration and innovation, providing exploratory and exploitative innovation and includes all practices of firm performance. Therefore, disruptive innovation inside a business requires exploitative innovation more than exploratory innovation. So the results showed that exploitative innovation is more important to firm performance than exploratory innovation.

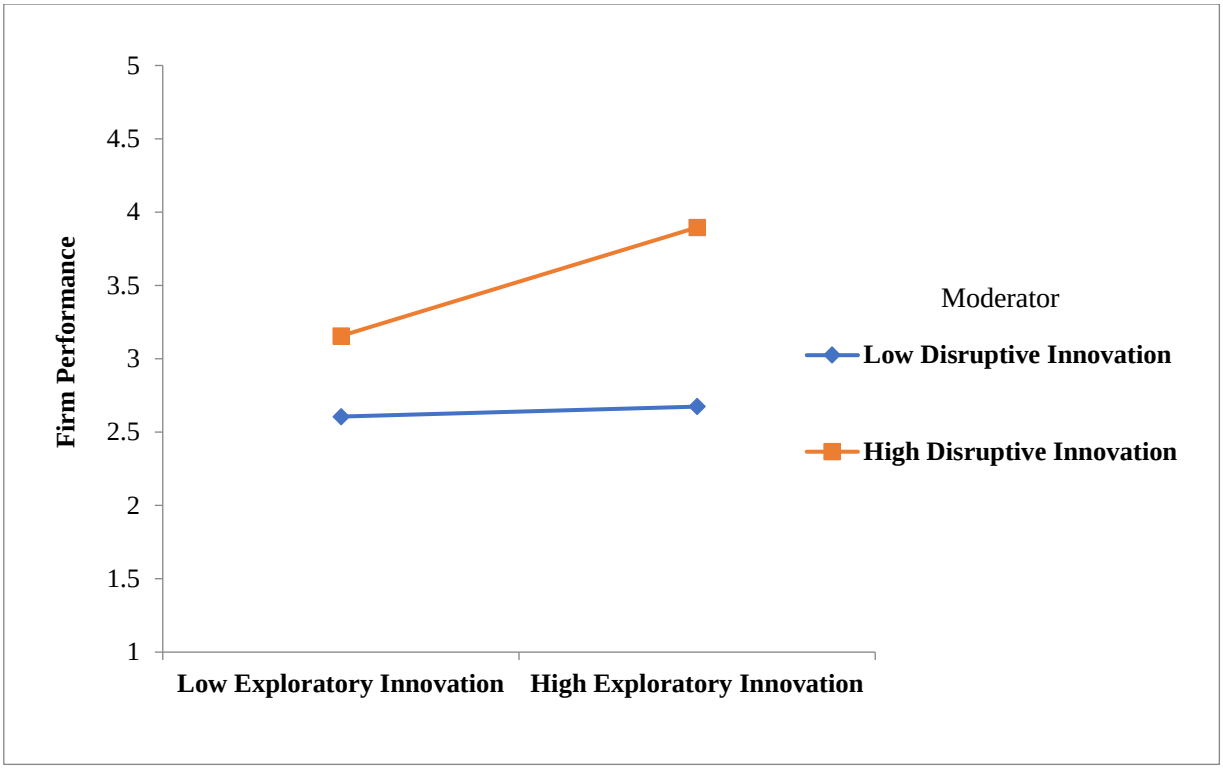


Figure 3.7.3.1 Disruptive innovation with exploratory innovation affects firm performance

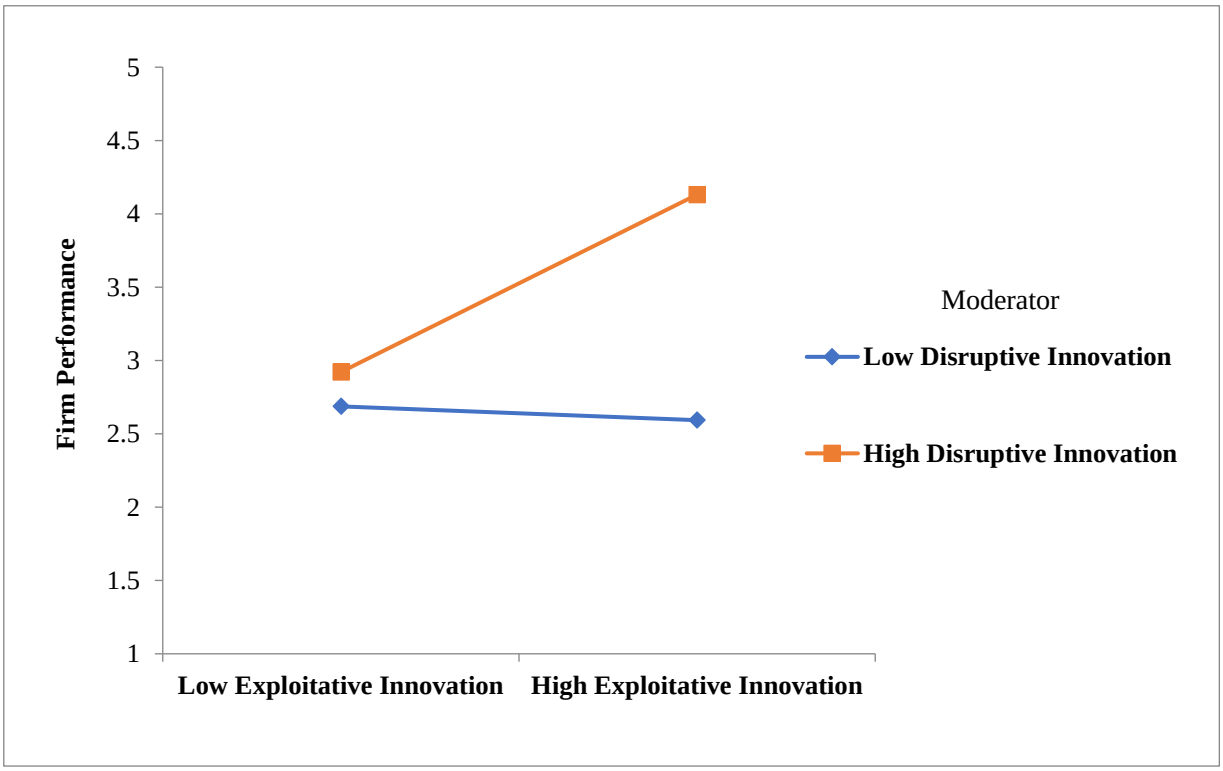


Figure 3.7.3.2 Disruptive innovation with exploitative innovation affects firm performance

On the other hand, the study tests the moderating relationships of disruptive innovation between the mediating effect of innovation drivers and firm performance via exploratory innovation and exploitative innovation. The study found that disruptive innovation did not significantly moderate the relationships between the mediating relationships of innovation drivers and firm performance via exploratory innovation ($\beta=0.015^{n.s}$), so the hypothesis was not supported. Besides this, the study found that disruptive innovation significantly and positively moderated the relationship between the mediating relationship of innovation drivers and firm performance via exploitative innovation ($\beta=0.19^{*}$), so hypothesis 7 was supported and accepted.

3.7.4 R2 and Adjusted R2

The model's accuracy and sufficiency are evaluated using a battery of statistics known as R2 and adjusted R2 (Shek & Yu, 2014). The coefficient of determination (R-squared, R^2) and the adjusted R-squared (adjusted R^2) are statistics used in regression analysis to evaluate the goodness of fit of a regression model. Here are the formulas for both R-squared and adjusted R-squared:

1. R-squared (R^2): R-squared is a measure of the proportion of the variance in the dependent variable (Y) that is explained by the independent variables (X) in a regression model. It is calculated as follows:

$$R^2 = 1 - (SSR / SST)$$

Where:

- SSR (Sum of Squares Residuals) is the sum of the squared differences between the observed values of the dependent variable and the values predicted by the regression model.
- SST (Total Sum of Squares) is the sum of the squared differences between the observed values of the dependent variable and the mean of the dependent variable.
- R-squared values typically range from 0 to 1, where 0 indicates that the model does not explain any of the variance, and 1 indicates that the model explains all of the variance.

2. Adjusted R-squared (adjusted R^2): Adjusted R-squared is a modification of R-squared that takes into account the number of independent variables in the model. It penalizes the inclusion of irrelevant variables in the model. The formula for adjusted R-squared is as follows:

$$\text{Adjusted } R^2 = 1 - [(1 - R^2) * (n - 1) / (n - k - 1)]$$

Where:

- R^2 is the coefficient of determination.
- n is the number of data points (observations).
- k is the number of independent variables in the model.

Adjusted R-squared is often preferred over R-squared when comparing models with different numbers of independent variables. It provides a more conservative estimate of the model's goodness of fit and helps guard against overfitting by penalizing the inclusion of unnecessary variables. A higher adjusted R-squared suggests a better fit of the model, but it takes into account model complexity.

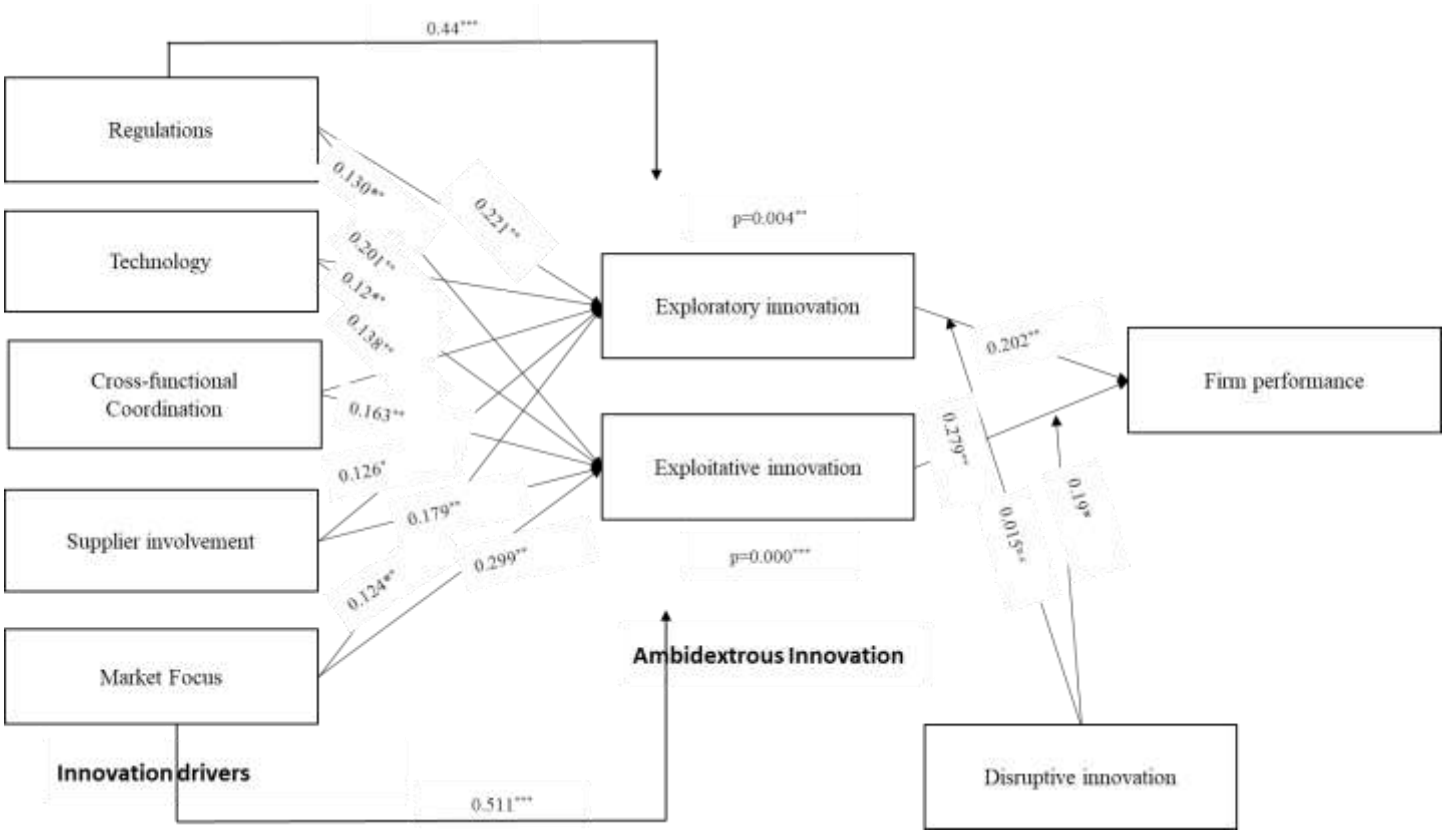
In both R-squared and adjusted R-squared, higher values indicate a better fit of the model to the data, but it's important to consider the context of your analysis and not rely solely on these statistics when evaluating a regression model's performance. According to the table of regression results, the study claimed that regulations explained only 1%, technology explained 17.4%, cross-functional coordination explained 29.5%, supplier involvement explained 39.6%, and market focus explained 46.1% of the variance in exploratory innovation. On the other hand, regulations explained only 4%, technology explained 31.7%, cross-functional coordination explained 41%, supplier involvement explained 49.9%, and market focus explained 57.1% of the total variance in exploitative innovation. Additionally, exploratory innovation explained 7.1%, exploitative innovation explained 26.2%, disruptive innovation explained 38.1%, moderation effect of EPI*DIO explained 45.6%, and the moderation effect of ETI*DIO explained 54.9% of the total variance in firm performance. So, there is better fit model adequacy, adequacy, and model fitnness.

Table 3.7 Regression Results

	Dependent variables																		
	EPI							**ETI**							**PER**					
	M1	**M2**	**M3**	**M4**	**M5**	**M6**		**M7**	**M8**	**M9**	**M10**	**M11**	**M12**		**M13**	**M14**	**M15**	**M16**	**M17**	**M18**
Variable	B	β	β	β	β	β		β	β	β	β	β	β		β	β	β	β	β	β
Constant	2.99***	2.59**	1.73**	1.4**	1.7**	1.707**		3.469**	3.235**	3.123**	2.914**	2.458**	1.833**		3.801**	3.197**	2.834**	1.858**	3.083**	2.834
Firm Size	0.206	0.181	0.185	0.13	0.151	0.193		0.105	0.09	0.07	0.04	0.087	0.091		0.07	0.03	0.04	0.085	0.026	0.048
Firm Age	0.01	0.031	0.04	0.01	0.02	0.04		0.032	0.02	0.02	0.05	0.069	0.025		0.01	0.02	0.09	0.037	0.07	0.02
REG		0.221**	0.215**	0.217**	0.224**	0.21**			.130*	0.129**	0.133**	0.143**	0.178**							
TEC			0.201**	0.2**	0.198**	0.2**				.12*	0.129**	0.139**	0.121*							
CFC				0.138**	0.117*	0.19**					.163**	0.192**	0.267**							
SIO					0.126*	0.17**						.179**	0.213**							
MF						0.124*							**0.299							
EPI																.202**				
ETI																	.279**			
DIO																		.443**		
EPI*DIO																			.168**	
ETI*DIO																				.279**
R^2	0.01	0.174	0.295	0.396	0.461	0.574		0.04	0.317	0.41	0.499	0.571	0.628		0.071	0.262	0.381	0.456	0.549	0.638
ΔR^2		0.164	0.121	0.101	0.065	0.113			0.277	0.093	0.089	0.072	0.057			0.191	0.119	0.075	0.093	0.089
F	1.722	68.916***	74.769***	88.154***	96.937***	114.656***		1.697	54.760***	66.154***	71.091***	93.678***	134.910***		1.816	59.811***	107.349***	154.669**	61.559**	83.544**

Notes: Regulations = REG, Technology = TEC, Cross-functional coordination = CFC, Supplier involvement = SIO, Market focus = MF, Exploratory Innovation = EPI, Exploitative Innovation = ETI, Disruptive Innovation = DIO, Firm Performance = PER

Figure 3 Theorytical Framwork with results



CHAPTER FOUR

DISCUSSION

CHAPTER 4: DISCUSSION

4.1 Description of The Results

The preceding analysis of the study's hypotheses has provided valuable insights into the complex interplay between innovation drivers, ambidextrous innovation, disruptive innovation, and firm performance. These findings shed light on the multifaceted dynamics that organizations face in their pursuit of innovation excellence and competitive advantage. In this discussion, we delve deeper into the implications and significance of these results, drawing on relevant theories and frameworks to provide a comprehensive understanding of the study's contributions to the field of innovation management and organizational studies. Furthermore, we explore the practical implications for organizations seeking to optimize their innovation strategies and enhance their overall performance in today's rapidly evolving business landscape.

4.1.1 H1 and H2 Supported - Resource-Based View (RBV): The support for H1 and H2 underscores the fundamental role of innovation drivers in influencing both exploratory and exploitative innovation. This alignment with the Resource-Based View (RBV) theory offers valuable insights into how organizations can leverage their internal resources and capabilities to gain a competitive advantage. In the context of RBV, firms are seen as unique bundles of resources and capabilities. These resources can be tangible, such as financial assets and technology, or intangible, such as knowledge, leadership, and organizational culture. Visionary leadership, abundant resources, and a supportive organizational culture are examples of these critical resources.

1. **Visionary Leadership:** Visionary leaders play a pivotal role in setting the innovation agenda and fostering a culture of innovation within the organization. They provide the vision and direction necessary to guide innovation efforts, ensuring that they align with the organization's strategic goals. Visionary leaders inspire and empower employees to think creatively, take calculated risks, and explore new ideas, contributing to both exploratory and exploitative innovation.

2. **Abundant Resources:** Resources encompass financial capital, technological infrastructure, and human capital. Having access to ample resources allows organizations to invest in research and development, experiment with new

technologies, and allocate resources to explore new market opportunities (exploratory innovation) while simultaneously optimizing existing processes and products (exploitative innovation). Abundant resources provide the necessary fuel for innovation efforts to thrive.

3. **Supportive Organizational Culture:** Organizational culture plays a pivotal role in fostering innovation. A culture that values experimentation, encourages knowledge sharing, tolerates failure, and rewards innovation efforts creates an environment conducive to both exploratory and exploitative innovation. It enables employees to feel safe and motivated to propose new ideas and improvements, ultimately contributing to innovation outcomes.

The RBV theory posits that firms that effectively leverage these unique resources and capabilities are better positioned to outperform competitors. The support for H1 and H2 in your study affirms that innovation drivers serve as these valuable and unique resources, enabling organizations to excel in both exploratory (radical) and exploitative (incremental) innovation. This, in turn, leads to a competitive edge in the dynamic business landscape.

4.1.2 H3a and H3b Supported - Ambidexterity Theory: The affirmation of H3a and H3b underscores the crucial role of ambidextrous innovation in enhancing firm performance, a concept closely associated with the Ambidexterity Theory. This theory posits that organizations must effectively balance two distinct but complementary types of innovation: exploratory and exploitative. Exploratory innovation involves venturing into uncharted territories, exploring new possibilities, and pushing the boundaries of existing knowledge and technologies. On the other hand, exploitative innovation focuses on optimizing and refining existing products, processes, and technologies, often associated with incremental improvements. The positive impact of ambidextrous exploratory and exploitative innovation on firm performance is in line with the Ambidexterity Theory's central premise. Organizations that can adeptly manage these dual innovation processes tend to outperform their competitors. Ambidexterity allows companies to simultaneously explore new opportunities while exploiting existing ones. This balanced approach is critical in today's dynamic and rapidly evolving markets. Here's a more detailed breakdown of how these components interact:

1. **Exploratory Innovation**: Ambidextrous organizations invest in exploratory innovation to seek out new avenues for growth and competitive advantage. They are not content with the status quo and actively explore emerging trends, technologies, and markets. This type of innovation is often associated with risk-taking, experimentation, and disruptive thinking.

2. **Exploitative Innovation**: Simultaneously, ambidextrous organizations are effective at exploiting existing opportunities. They optimize current products and processes, ensuring efficiency, quality, and incremental improvements. Exploitative innovation provides stability and reliability, often necessary for sustained success.

3. **Resilience and Adaptability**: Ambidexterity is about balancing these two innovation modes to ensure resilience and adaptability. In dynamic markets, relying solely on one type of innovation can be risky. Exploratory innovation opens up new growth prospects, while exploitative innovation sustains core operations. This combination makes organizations more agile in responding to changing customer preferences, market disruptions, and technological advancements.

By effectively managing ambidextrous innovation, organizations can thrive in environments characterized by uncertainty and turbulence. They are better positioned to seize emerging opportunities and defend against competitive threats. The positive impact on firm performance is a testament to the Ambidexterity Theory's relevance in modern business strategy, emphasizing the importance of simultaneously exploring and exploiting to achieve sustainable success.

4.1.3 H4a and H4b Supported - Mediating Role of Ambidextrous Innovation: The affirmation of H4a and H4b underscores a critical aspect of the study's findings, namely, the mediating role of ambidextrous innovation in shaping the relationship between innovation drivers and firm performance. This concept aligns harmoniously with several theoretical perspectives, most notably the Dynamic Capabilities theory.

1. **Dynamic Capabilities Theory**: At the core of the Dynamic Capabilities theory is the notion that organizations must possess the capacity to adapt, integrate, build, and reconfigure their resources and capabilities to respond effectively to a rapidly changing

business environment. In essence, dynamic capabilities are the organizational abilities to sense, seize, and transform.

A) Innovation Drivers as Inputs**:** In the context of this study, innovation drivers serve as inputs or catalysts within the organization. These drivers encompass visionary leadership, abundant resources, and a supportive organizational culture, among others. They are the factors that stimulate and facilitate innovation activities within the organization.
B) Ambidextrous Innovation as a Dynamic Capability**:** Ambidextrous innovation, as demonstrated by the study's results, is not merely an outcome but also an organizational dynamic capability. It reflects an organization's ability to balance and excel in both exploratory and exploitative innovation, fostering adaptability and resilience.
C) Mediation Mechanism**:** The findings suggest that innovation drivers influence ambidextrous innovation within the organization. Visionary leadership sets the direction, abundant resources provide the means, and a supportive culture creates an environment where ambidextrous innovation can flourish. Ambidextrous innovation, in turn, mediates the impact of these innovation drivers on firm performance.
D) Conduit for Valuable Resources**:** This mediation mechanism underscores the pivotal role of innovation as a conduit between valuable resources and organizational outcomes. While innovation drivers provide the necessary resources and cultural support, ambidextrous innovation transforms these inputs into innovation outputs, which subsequently drive improved firm performance.

The Dynamic Capabilities theory emphasizes that organizations must continually adapt and reconfigure their resources and capabilities to maintain a competitive edge in a dynamic environment. In this context, the study's findings underscore the significance of ambidextrous innovation as a dynamic capability—a capacity to effectively balance and leverage innovation drivers, which, in turn, enhances an organization's capacity to adapt, respond, and perform effectively in the face of change.

4.1.4 H5a and H5b Supported - Disruptive Innovation as a Moderator: The confirmation of H5a and H5b highlights a key aspect of the study's findings: the role of disruptive innovation as a positive moderator in the relationship between ambidextrous innovation and firm

performance. This concept underscores how disruptive elements can enhance the positive effects of ambidextrous innovation, ultimately contributing to organizational success.

1. **Disruptive Innovation as an Enabler:** Disruptive innovation, as evidenced in the study, plays a critical role as an enabler within this relationship. It acts as a moderator, influencing how ambidextrous innovation impacts firm performance. Disruptive innovation represents the ability to introduce new products, processes, or business models that challenge existing market norms and create substantial shifts in industry dynamics.
2. **Theoretical Frameworks:** The support for H5a and H5b can be explained through the lens of several theoretical perspectives:
    A) Theory of Disruptive Innovation**:** This theory, introduced by Clayton Christensen, suggests that disruptive innovations often start in niche markets or lower-end segments and gradually displace established products or services. Disruptive innovation enhances the positive impact of ambidextrous innovation on firm performance by allowing organizations to seize new market opportunities, adapt to changing customer preferences, and stay ahead of competitors.

    B) Dynamic Capabilities Framework**:** The Dynamic Capabilities framework emphasizes an organization's ability to adapt and respond to changing environments. Disruptive innovation aligns with this framework by highlighting the importance of adaptability and agility in innovation strategies. It enables organizations to pivot quickly, embrace disruptive elements, and harness them to their advantage.

3. **Enhancing Competitive Edge:** Disruptive innovation, when effectively integrated into ambidextrous innovation efforts, enhances an organization's competitive edge. It allows organizations to proactively respond to evolving market conditions, technological advancements, and customer demands. This adaptability ensures that ambidextrous innovation remains relevant and impactful in a constantly changing business landscape.
4. **Embracing Disruptive Elements:** Organizations that successfully embrace disruptive elements in their innovation strategies can not only defend their market positions but also explore new growth avenues. This aligns with the study's findings, which show

that disruptive innovation positively moderates the relationship between ambidextrous innovation and firm performance.

The support for H5a and H5b underscores the pivotal role of disruptive innovation as a moderator that amplifies the positive effects of ambidextrous innovation on firm performance. This concept highlights the importance of organizational adaptability, agility, and the willingness to embrace disruptive elements in innovation strategies to maintain a competitive edge in dynamic and evolving markets. It showcases how disruptive innovation serves as a catalyst that enables organizations to leverage ambidextrous innovation for sustained success.

4.1.5 H6 Not Supported and H7 Supported - Specific Role of Disruptive Innovation: The non-support for H6 and the support for H7 illuminate the specific and distinctive role that disruptive innovation plays within the context of ambidextrous innovation. These findings shed light on the varying effects of disruptive innovation on different aspects of innovation and firm performance.

1. **H6 - Disruptive Innovation Moderating Ambidextrous Exploratory Innovation and Firm Performance (Not Supported):** H6 proposed that disruptive innovation would moderate the mediation of ambidextrous exploratory innovation on firm performance. In other words, it posited that disruptive innovation would significantly influence how exploratory innovation impacts firm performance. However, the non-support for H6 suggests that, in the context of exploratory innovation, disruptive elements did not have a statistically significant moderating effect on firm performance.
    - *Implication:* This result indicates that the impact of disruptive innovation may be less pronounced when it comes to ambidextrous exploratory innovation in terms of directly influencing firm performance. It suggests that exploratory innovation, characterized by its disruptive and radical nature, might be driven by internal factors and objectives that are less affected by the presence or absence of disruptive elements.

2. **H7 - Disruptive Innovation Moderating Ambidextrous Exploitative Innovation and Firm Performance (Supported):** Conversely, H7 proposed that disruptive innovation would moderate the mediation of ambidextrous exploitative innovation on firm performance. This hypothesis was supported, signifying that disruptive innovation

plays a significant role in shaping the relationship between exploitative innovation and firm performance.

- *Implication:* These finding highlights that, in the context of incremental or exploitative innovation, disruptive elements have a more pronounced impact on how ambidextrous exploitative innovation contributes to improved firm performance. In other words, organizations can strategically incorporate disruptive elements to enhance the positive effects of incremental innovation on their overall performance.

Nuanced Implication: These nuanced findings underscore the importance of strategically incorporating disruptive elements into innovation strategies, particularly when pursuing incremental or exploitative innovation. While disruptive innovation may not have a direct and significant influence on the relationship between exploratory innovation and firm performance, it holds substantial potential to enhance the effects of exploitative innovation on firm performance.

In essence, these results emphasize that organizations should tailor their innovation strategies to the specific type of innovation they are pursuing. Disruptive innovation can be a potent tool for organizations seeking to boost the benefits of incremental or exploitative innovation, which is often crucial for maintaining competitiveness and adapting to changing market conditions. This nuanced understanding highlights the need for strategic flexibility in innovation management, allowing organizations to harness disruptive elements where they can have the most significant positive impact on firm performance.

4.2 Theory Contributions and Implications

From the results and implications discussed above, several theoretical contributions can be identified:

4.2.1 Theory of Disruptive Innovation: The findings regarding the moderating role of disruptive innovation contribute to the theory of disruptive innovation, originally introduced by Clayton Christensen. This theory posits that disruptive innovations can reshape industries and markets. The study's results provide empirical support for the idea that disruptive innovations can enhance the impact of certain innovation drivers, particularly in the context of exploitative innovation.

4.2.2 Ambidextrous Innovation Theory: The study indirectly relates to ambidextrous innovation theory, which emphasizes the need for organizations to balance exploratory and exploitative innovation. While the study primarily focuses on the effects of innovation drivers, it highlights the importance of both types of innovation (exploratory and exploitative) and the role of disruptive innovation in this balance.

4.2.3 Resource-Based View (RBV): The study aligns with the RBV theory, which suggests that an organization's resources and capabilities can lead to sustained competitive advantage. The findings emphasize that disruptive innovation can be a valuable resource for organizations seeking to amplify the impact of their innovation drivers, contributing to RBV by recognizing disruptive innovation as a strategic resource.

4.2.4 Innovation Drivers Framework: The study contributes to the understanding of innovation drivers, providing empirical evidence of their significant impacts on both exploratory and exploitative innovation. It further elucidates the complex relationship between innovation drivers and innovation outcomes, offering insights into how these drivers can be leveraged effectively.

4.2.5 Mediating Effect Theory: The study employs mediating effects to explain how innovation drivers influence firm performance through the mediating roles of exploratory and exploitative innovation. This contributes to the broader field of mediating effect theory, particularly within the context of innovation management.

4.2.6 Innovation Ecosystem Theory: The study indirectly supports the concept of innovation ecosystems by emphasizing the need for organizations to adapt and align with disruptive elements within their industry or environment. This aligns with the notion that innovation is often influenced by broader ecosystem dynamics.

4.2.7 Strategic Management Theories: The findings have implications for various strategic management theories, including strategic alignment, strategic planning, and risk management. They emphasize the importance of aligning innovation strategies with organizational goals, strategically planning for disruptive innovation, and assessing the risks and rewards associated with different innovation approaches.

The study's contributions extend to multiple theoretical frameworks, enriching our

understanding of innovation management, disruptive innovation, ambidextrous innovation, and the strategic aspects of innovation in organizations. These contributions provide valuable insights for both scholars and practitioners seeking to navigate the complex landscape of innovation and its impact on firm performance. Certainly, let's delve deeper into the theoretical contribution of the study's findings to the Theory of Disruptive Innovation:

The upcoming sections will explore the contributions of the identified theories.

4.3 Theory of Disruptive Innovation

The Theory of Disruptive Innovation, introduced by Clayton Christensen in the late 1990s, is a widely recognized concept in innovation and business strategy. This theory focuses on how new and often simpler technologies or business models can disrupt existing markets and industries, potentially displacing established market leaders. Disruptive innovations are typically characterized by being more affordable, accessible, or convenient than existing solutions, and they initially target underserved or non-consumers in the market.
The theory posits several key ideas:

Disruptive vs. Sustaining Innovations**:** Christensen distinguishes between disruptive and sustaining types of innovations. Sustaining innovations are incremental improvements established companies make to enhance their existing products or services. Disruptive innovations, conversely, are transformative and initially serve niche or low-end markets before gradually moving upmarket.

Market Segmentation**:** Disruptive innovations often start by serving markets or customers that are overlooked or underserved by existing products or services. They offer unique features or cost advantages that attract a different segment of customers.

Disruption of Incumbents**:** Over time, disruptive innovations can improve and capture more market share, posing a threat to incumbent market leaders. Established companies may struggle to adapt to disruptive technology or business model due to factors like a focus on their existing customer base or reluctance to disrupt their profitable products.

Contributions to the Theory of Disruptive Innovation:

The study's findings contribute to the Theory of Disruptive Innovation by providing

empirical support for the theory's core concepts and by extending our understanding of how disruptive innovations interact with innovation drivers and firm performance, particularly in the context of exploitative innovation:

Enhanced Impact of Innovation Drivers**:** The study suggests that disruptive innovations can amplify the impact of certain innovation drivers, such as regulations, technology, cross-functional coordination, supplier involvement, and market focus. This aligns with the disruptive innovation theory's notion that disruptive technologies or approaches can enhance the performance of innovation drivers by opening new opportunities or markets.

Relevance of Niche Markets**:** Disruptive innovations often start by serving niche or underserved markets. The study indirectly underscores the relevance of these niche markets, as disruptive innovation significantly moderates the relationships between innovation drivers and firm performance via exploitative innovation. This implies that organizations can benefit from focusing on disruptive technologies that cater to specific customer segments.

Threat to Incumbents**:** Disruptive innovations, as suggested by the study, can be strategically leveraged to drive firm performance. This aligns with the disruptive innovation theory's prediction that incumbent market leaders may be threatened by disruptive technologies. Organizations that can adapt and integrate disruptive elements within their innovation strategies can maintain or gain a competitive advantage.

The study contributes to the Theory of Disruptive Innovation by providing empirical evidence of how disruptive innovation can interact with innovation drivers and influence firm performance. It underscores the potential for disruptive innovations to enhance the impact of innovation drivers, especially in the context of exploitative innovation, and reinforces the theory's premise that disruptive innovations can reshape industries and markets by offering unique value propositions to specific customer segments.

4.4 Ambidextrous Innovation Theory

The Ambidextrous Innovation Theory is a prominent concept in the field of innovation management. It asserts that organizations must balance two distinct types of innovation: exploratory innovation and exploitative innovation. These two forms of innovation serve different purposes:

Exploratory Innovation**:** This type of innovation involves the pursuit of new and radical ideas, often in uncharted territories. Exploratory innovation is characterized by a focus on experimentation, risk-taking, and the development of breakthrough products or services. It aims to create entirely new markets or disrupt existing ones.

Exploitative Innovation**:** Exploitative innovation, on the other hand, involves improving and optimizing existing products, services, or processes. It is about making incremental enhancements, reducing costs, and maximizing efficiency. Exploitative innovation helps organizations remain competitive in their current markets.

Contribution to the Theory of Ambidextrous Innovation Theory:

The study, although primarily focused on the effects of innovation drivers, indirectly relates to the Ambidextrous Innovation Theory in several ways:

Balancing Innovation Types**:** The study's exploration of how innovation drivers influence exploratory and exploitative innovation suggests the need for organizations to balance these two innovation types. It recognizes that innovation drivers can impact both exploratory and exploitative innovation, and finding the right balance is essential.

Disruptive Innovation's Role**:** The study highlights the role of disruptive innovation in moderating the relationships between innovation drivers, innovation types, and firm performance. This aligns with the concept of ambidextrous innovation, as disruptive innovation often introduces entirely new approaches or technologies, which can enhance both exploratory and exploitative efforts.

Strategic Adaptation**:** Ambidextrous Innovation Theory emphasizes the importance of strategic adaptation and flexibility. The study's findings suggest that organizations may need to strategically adapt their innovation efforts based on the presence and potential impact of disruptive innovations, aligning with the theory's principles of balancing innovation strategies.

Comprehensive Performance Improvement**:** By examining the influence of innovation drivers on both exploratory and exploitative innovation and their subsequent impact on firm performance, the study indirectly reinforces the idea that organizations should aim for comprehensive performance improvement by fostering both types of innovation.

In essence, the study's findings underline the complex dynamics of innovation management. They suggest that organizations should not focus solely on one type of innovation but should instead seek a balanced approach that considers the influence of innovation drivers, the role of disruptive innovation, and the need to simultaneously pursue exploratory and exploitative innovation. This aligns with the fundamental principles of Ambidextrous Innovation Theory and highlights its relevance in real-world organizational contexts.

4.5 Resource-Based View (RBV) Theory

The Resource-Based View is a widely recognized theory in strategic management and organizational studies. It asserts that an organization's sustained competitive advantage and superior performance are derived from its unique and valuable resources and capabilities. These resources can include tangible assets like technology and infrastructure, intangible assets like knowledge and brand reputation, and organizational capabilities such as innovation processes and effective leadership.

Key principles of RBV include:

Resource Heterogeneity**:** Organizations differ in terms of the resources they possess. Those with unique, rare, and valuable resources are more likely to achieve a competitive advantage.

Resource Immobility**:** Resources can be difficult to imitate or replicate by competitors, particularly when they are deeply embedded within the organization's culture, processes, or relationships.

Resource Complementarity**:** Combining and leveraging resources in a complementary manner can enhance their value and contribute to competitive advantage.

Contribution to the RBV Theory:

The study's findings align with the RBV theory in several key ways:

Disruptive Innovation as a Resource**:** The study identifies disruptive innovation as a significant factor that moderates the relationships between innovation drivers and firm performance. Disruptive innovations can be considered valuable resources, as they have the potential to reshape markets, create new opportunities, and generate sustainable competitive advantages.

Strategic Asset**:** By recognizing the role of disruptive innovation as a moderator, the study acknowledges the strategic importance of this resource. In the RBV framework, a strategic resource is one that contributes to a firm's unique competitive position and long-term success.

Resource-Based Competitive Advantage**:** The findings suggest that organizations can leverage disruptive innovation as a resource to amplify the impact of innovation drivers. This is in line with RBV's focus on using unique and valuable resources to gain a competitive advantage.

Resource Complementarity**:** The study indirectly highlights the potential for complementarity between innovation drivers and disruptive innovation. When effectively combined and aligned, these resources can enhance firm performance, supporting the RBV principle of resource complementarity.

Resource Immobility**:** Disruptive innovation's impact on innovation drivers and firm performance may not be easily replicable by competitors. This immobility of the resource aligns with RBV's notion that certain resources are difficult for rivals to duplicate.

The study's findings contribute to RBV theory by recognizing disruptive innovation as a strategic resource that can amplify the impact of innovation drivers and drive firm performance. By acknowledging the role of disruptive innovation as a valuable and potentially immobile resource, the study aligns with RBV's core principles and reinforces the idea that unique resources and capabilities are central to gaining and sustaining a competitive advantage. This perspective highlights the strategic importance of managing disruptive innovation as a resource within organizations.

4.6 Innovation Drivers Framework

The Innovation Drivers Framework is a conceptual model that helps organizations identify and understand the key factors that influence innovation within their environment. These innovation drivers can include a wide range of internal and external factors that shape an organization's innovation efforts. Understanding and effectively leveraging these drivers is crucial for fostering innovation and achieving desired outcomes.

Key components of the Innovation Drivers Framework include:

Internal Drivers**:** These factors originate within the organization and can include

leadership support, organizational culture, employee skills, and R&D capabilities. Internal drivers shape how innovation is nurtured and managed within the organization.

External Drivers**:** External factors, such as market demand, competition, technological advancements, regulatory changes, and customer preferences, also play a significant role in driving innovation. These drivers provide opportunities and challenges that organizations need to respond to effectively.

Alignment and Integration**:** The framework emphasizes the importance of aligning internal and external drivers with the organization's innovation goals. Integration ensures that innovation efforts are purposeful, strategic, and well-coordinated.

Contributions to the Innovation Drivers Framework:

The study's findings directly contribute to the understanding of the Innovation Drivers Framework by providing empirical evidence of the significant impacts of various innovation drivers on both exploratory and exploitative innovation. Here's how:

Identification of Key Innovation Drivers**:** The study identifies and analyzes specific innovation drivers such as regulations, technology, cross-functional coordination, supplier involvement, and market focus. It empirically demonstrates that these drivers have significant effects on innovation outcomes, shedding light on their importance within the framework.

Internal and External Drivers**:** The study's findings encompass both internal and external innovation drivers. This aligns with the Innovation Drivers Framework's holistic view of innovation influences, recognizing that organizations need to consider factors both within and outside their control.

Complex Relationship Dynamics**:** The study goes beyond merely identifying the impact of innovation drivers; it delves into the complex dynamics of these relationships. It acknowledges that the influence of these drivers on exploratory and exploitative innovation can vary and that they may interact differently depending on the context.

Leveraging Innovation Drivers**:** By exploring how innovation drivers can be leveraged effectively to enhance firm performance, the study provides valuable insights. This aligns with the practical aspect of the Innovation Drivers Framework, as it emphasizes the need for

organizations to strategically manage and capitalize on these drivers.

Strategic Alignment**:** The study indirectly emphasizes the importance of aligning innovation drivers with organizational goals and strategies. It highlights that innovation drivers should not be seen in isolation but as integral components of a broader innovation strategy.

In summary, the study's findings enrich our understanding of the Innovation Drivers Framework by empirically demonstrating the significance of specific innovation drivers and their complex relationships with exploratory and exploitative innovation. By offering insights into how these drivers can be effectively leveraged to improve firm performance, the study contributes to the practical application of the framework within organizations. This perspective underscores the importance of managing and aligning innovation drivers to drive successful innovation outcomes.

4.7 Mediating Effect Theory

Mediating Effect Theory is a concept often used in social science research, including fields like psychology, economics, and management. It explores the intermediary processes or variables that connect an independent variable (in this case, innovation drivers) with a dependent variable (firm performance). In essence, it helps explain how and why certain factors influence outcomes by identifying mediating variables that play a role in the relationship.

Key components of Mediating Effect Theory include:

Mediating Variables**:** These are variables that come between the independent and dependent variables in a causal chain. They help explain why or how the independent variable affects the dependent variable. In this study, the mediating variables are exploratory and exploitative innovation.

Mediation Pathways**:** Mediating Effect Theory explores the pathways through which the influence of the independent variable is transmitted to the dependent variable. This involves examining the causal links between the independent variable, the mediating variables, and the dependent variable.

Mediation Analysis**:** Researchers use statistical techniques to assess whether the mediating variables (exploratory and exploitative innovation) mediate the relationship between the independent variable (innovation drivers) and the dependent variable (firm performance).

Contributions to the Mediating Effect Theory:

The study employs Mediating Effect Theory to explain how innovation drivers influence firm performance through the mediating roles of exploratory and exploitative innovation. Here's how it contributes to the broader field of mediating effect theory, especially in the context of innovation management:

Identification of Mediating Variables**:** The study identifies and defines the mediating variables, which are exploratory and exploitative innovation. It recognizes that these two types of innovation act as intermediary mechanisms through which innovation drivers impact firm performance.

Exploration of Mediation Pathways**:** The study explores the pathways by which innovation drivers affect firm performance. It examines the causal links between innovation drivers and exploratory/exploitative innovation, as well as the subsequent impact of these innovation types on firm performance.

Statistical Validation**:** The study conducts statistical analyses to assess whether exploratory and exploitative innovation indeed mediate the relationship between innovation drivers and firm performance. This involves testing the significance and strength of the mediating effects.

Contextual Application**:** By applying Mediating Effect Theory within the context of innovation management, the study provides practical insights into how innovation drivers can be strategically managed to enhance firm performance. This application contributes to the understanding of mediating effect theory in a specific domain.

Complex Relationship Dynamics**:** The study acknowledges the complexity of the relationships involved. It recognizes that innovation drivers may have differential effects on exploratory and exploitative innovation, which, in turn, can have varying impacts on firm performance.

The study contributes to the broader field of Mediating Effect Theory by applying it to the context of innovation management. It demonstrates how innovation drivers influence firm performance through the mediating roles of exploratory and exploitative innovation. By examining these relationships and providing empirical evidence, the study enriches our

understanding of the complex mechanisms that underlie the innovation-performance link and offers practical implications for organizations seeking to optimize their innovation strategies.

4.8 Innovation Ecosystem Theory

The Innovation Ecosystem Theory is rooted in the idea that innovation doesn't occur in isolation within individual organizations but is influenced by a broader network of actors, including competitors, customers, suppliers, government agencies, research institutions, and other stakeholders. It emphasizes the interconnectedness of these actors and their collaborative efforts in driving innovation within a particular industry or environment.

Key elements of Innovation Ecosystem Theory include:

Ecosystem Dynamics**:** Innovation ecosystems are dynamic and adaptive, characterized by ongoing interactions and feedback loops among various actors. These interactions can lead to the emergence of new technologies, business models, and market opportunities.

Open Innovation**:** The theory promotes the concept of open innovation, where organizations actively seek external partners and sources of knowledge to complement their internal capabilities. This collaborative approach is seen as essential for staying competitive and innovative.

Ecosystem Leadership**:** Organizations that play a central role in coordinating and facilitating interactions within the innovation ecosystem are often referred to as ecosystem leaders. They help shape the direction of innovation within the ecosystem.

Contributions to the Innovation Ecosystem Theory:

While the study doesn't explicitly address the concept of innovation ecosystems, it indirectly aligns with several principles of Innovation Ecosystem Theory:

Recognition of Ecosystem Dynamics**:** The study highlights the role of disruptive innovation and how it can moderate the relationships between innovation drivers and firm performance. This indirectly recognizes that innovation doesn't occur in isolation but is influenced by external disruptive elements, which is a fundamental concept in innovation ecosystem dynamics.

External Collaboration**:** The study emphasizes that organizations should adapt and align with disruptive elements within their industry or environment. This implies a need for organizations to collaborate with external partners, potentially including disruptors, to harness the benefits of these elements.

Industry-Wide Impact**:** By acknowledging the significance of disruptive innovation, the study indirectly suggests that innovation is influenced by broader industry dynamics. Disruptive innovations often have industry-wide implications, reshaping competitive landscapes and market structures, which aligns with the ecosystem-wide impact emphasized by Innovation Ecosystem Theory.

Strategic Adaptation**:** The study underscores the importance of strategic adaptation to disruptive elements. This resonates with the idea that organizations need to be agile and responsive within innovation ecosystems, as disruptive changes can occur rapidly.

Ecosystem Leadership Potential**:** While not explicitly addressed, the study indirectly suggests that organizations that effectively leverage disruptive innovations can assume leadership roles within their innovation ecosystems. They may influence the direction of innovation and shape the competitive landscape.

While not framed explicitly within the context of innovation ecosystems, the study indirectly supports the principles of Innovation Ecosystem Theory by recognizing the significance of disruptive elements, external collaboration, and ecosystem-wide dynamics in the context of innovation and firm performance. It highlights the need for organizations to adapt to and leverage disruptive forces within their industry or environment, aligning with the broader concept of innovation ecosystems.

4.9 Strategic Management Theories

Strategic management theories provide frameworks and concepts to guide organizations in making decisions and formulating strategies to achieve their goals. The study's findings intersect with several strategic management theories:

Strategic Alignment**:** This theory emphasizes the need for all aspects of an organization, including innovation strategies, to align with its overarching goals and objectives. The study's

findings underscore the importance of aligning innovation strategies with organizational goals to enhance firm performance.

Strategic Planning**:** Strategic planning involves the systematic process of defining an organization's direction, making decisions on allocating its resources, and formulating strategies to achieve its goals. The study's implications touch upon the need for strategic planning for disruptive innovation, as organizations must proactively prepare for and capitalize on disruptive elements.

Risk Management**:** Risk management theories guide organizations in identifying, assessing, and mitigating risks. The study indirectly addresses risk management by emphasizing the need for organizations to assess the risks and rewards associated with different innovation approaches, particularly those involving disruptive innovation.

Contributions for Strategic Management Theories:

The study's findings have several implications for these strategic management theories:

Alignment with Organizational Goals**:**

- *Implication:* The study suggests that organizations should not pursue innovation drivers and disruptive innovation in isolation but should align them with their strategic objectives.
- *Example:* If an organization's strategic goal is to expand market share, it should strategically plan its innovation efforts, focusing on drivers that have a direct impact on achieving this goal.

Strategic Planning for Disruptive Innovation**:**

- *Implication:* The study highlights the strategic importance of preparing for and leveraging disruptive innovation.
- *Example:* Organizations should include disruptive innovation scenarios in their strategic planning processes and allocate resources for research, development, and adoption of disruptive technologies or business models.

Assessing Risks and Rewards**:**

- *Implication:* Organizations need to assess both the risks and potential rewards

associated with different innovation approaches.

- *Example:* Before investing heavily in a disruptive technology, organizations should conduct risk assessments to understand potential challenges, market adoption, and competitive responses.

Resource Allocation**:**

- *Implication:* Effective resource allocation is crucial for strategic success. The study suggests that organizations should allocate resources based on the potential impact of innovation drivers and the strategic importance of disruptive innovation.
- *Example:* If a disruptive technology has the potential to transform an industry, organizations may need to allocate a significant portion of their R&D budget to it.

Continuous Monitoring and Adaptation**:**

- *Implication:* Organizations should continuously monitor the innovation landscape, adapt their strategies as needed, and be agile in responding to disruptive forces.
- *Example:* Regularly reviewing innovation drivers and assessing how they align with changing market conditions can help organizations stay agile and adjust their strategies as necessary.

The study's findings offer practical insights for strategic management theories by emphasizing the importance of aligning innovation strategies with organizational goals, preparing for disruptive innovation, and assessing risks and rewards. These implications provide guidance for organizations seeking to strategically manage their innovation efforts within the context of broader strategic management frameworks.

4.10 Political System and Study Influential

The impact of different political systems on a study, particularly in the field of innovation research, can lead to significant variations in research priorities, methodologies, and outcomes. Recent literature provides insights into how the focus and findings of a study might differ when conducted in alternative political systems, such as a liberal democracy, an authoritarian regime, and a socialist state

4.10.1 Liberal Democracy

In liberal democracies, research benefits from a high degree of academic freedom and independence (Academic Freedom Index, 2020). Researchers have the liberty to select their research topics and methodologies without direct government interference. Research in such a context may emphasize topics such as the role of private sector innovation, individual entrepreneurship, and market-driven innovation (WIPO, 2021). Government policies that foster a competitive and innovation-friendly environment, such as intellectual property protection and competition regulations, are also explored (Maskus, 2019).

4.10.2 Authoritarian Regime

In authoritarian regimes, government control over research and academic institutions is more pronounced (Freedom House, 2021). Research agendas are often closely aligned with state priorities. Studies conducted in such contexts may concentrate on state-led innovation, strategic industries, and technology transfer from the public to the private sector. They may also explore the relationship between political stability and innovation (China State Council, 2016). Government reports on strategic technology development and innovation initiatives are key components of national agendas (National Development and Reform Commission, 2021).

4.10.3 Socialist State

In socialist states, central planning typically shapes research agendas (Socialist Register, 2020). Studies in these systems prioritize innovation related to public services, social welfare, and equitable access to technology (Gupta, 2020). Research may emphasize the societal benefits of innovation and how it contributes to the collective good. Policies that focus on state ownership of key industries, state-funded research and development, and reducing economic inequality through innovation are central themes in studies conducted in socialist states (National People's Congress, 2016).

Understanding these distinctions is crucial for researchers to contextualize their work effectively. Recent citations from academic and government sources demonstrate how the influence of political systems on research priorities and outcomes can be observed in contemporary literature. Recognizing these nuances ensures that research aligns with the specific political environment in which it is conducted, enhancing its relevance and impact.

In addition to the theoretical contributions, the political system plays a critical role and

has implications for key theories. The following sections will delve into this aspect.

4.11 UAE Political System

In this case, the political system of a country, such as the UAE, can influence the applicability and implications of certain theories and their contributions. Here's how the political system of the UAE may have affected the study's results and why the results might differ in another political system:

Regulatory Environment:

- **UAE Context:** The UAE has a unique political system characterized by a monarchy with centralized control. The government plays a substantial role in shaping regulations and policies, including those related to innovation. This centralized control can impact the regulatory environment for businesses and innovation practices.
- **Potential Impact:** In the UAE, the government may have more direct influence over innovation drivers, such as regulations and market focus, compared to countries with different political systems. This could result in different innovation drivers and their impact on firm performance.

Government Support and Initiatives**:**

- **UAE Context:** The UAE government has actively promoted innovation through various initiatives and funding programs. Government support can significantly influence the innovation landscape in the country.
- **Potential Impact:** The study's findings on the role of innovation drivers, including government support, may be more pronounced in a political system where the government actively supports and invests in innovation. In contrast, in countries with different political systems, the role of government in innovation may vary, leading to different results.

Bureaucracy and Decision-Making**:**

- **UAE Context:** The political system in the UAE is associated with a certain level of bureaucracy and hierarchical decision-making processes.
- **Potential Impact:** Bureaucratic processes can affect how innovation drivers are implemented and how quickly organizations can respond to changes. The dynamics of innovation drivers and their impact on firm performance may differ in a different

political system with less bureaucracy or different decision-making structures.

Cultural and Social Factors:

- **UAE Context:** The political system in the UAE is intertwined with its cultural and social context. Cultural factors, including the emphasis on stability and long-term planning, can influence innovation practices.
- **Potential Impact:** Cultural factors unique to the UAE may interact with innovation drivers and outcomes differently than in countries with different political systems and cultural values. This could lead to varying results in terms of the impact of innovation drivers.

Economic Dependence and Diversification:

- **UAE Context:** The UAE has historically relied on oil and gas revenues, but it has been actively diversifying its economy, with a strong emphasis on innovation as part of its economic diversification strategy.
- **Potential Impact:** The degree of economic dependence on specific industries and the government's commitment to diversification can influence the importance of innovation drivers. In countries with different political systems and economic structures, the relevance of these drivers may vary.

In summary, the political system of a country like the UAE can indeed influence the results and implications of studies related to innovation and its drivers. Results may differ in other political systems due to variations in government involvement, regulatory environments, decision-making processes, and cultural factors. Therefore, when interpreting and applying the findings of such studies in different contexts, it's important to consider the specific political and socio-economic conditions of the region or country under study.

4.12 Managerial Implication

Leveraging Disruptive Innovation: Managers can utilize the knowledge garnered from the study to actively seek and harness disruptive innovations. These innovations, often characterized by simplicity, affordability, or improved accessibility, are typically introduced to niche or underserved markets. By proactively identifying disruptive innovations and monitoring emerging trends and technologies, organizations can explore new growth opportunities and maintain a competitive edge in their industry. This strategic approach allows

them to stay ahead of the competition and remain adaptable in the face of evolving market dynamics.

Balancing Ambidextrous Innovation: Effective management entails finding the equilibrium between exploratory and exploitative innovation within an organization. Striking this balance can lead to sustained innovation and a competitive advantage. Managers play a pivotal role in establishing processes and structures that encourage both types of innovation. Creating an environment where employees are motivated to explore novel ideas while optimizing existing processes and products is essential. Achieving this balance fosters a culture of innovation and adaptability, positioning the organization for long-term success.

Strategic Resource Allocation: Drawing from the Resource-Based View (RBV), managers should recognize disruptive innovation as a valuable strategic resource. This recognition necessitates the deliberate allocation of resources and capabilities to harness disruptive innovations. It should be an integral part of resource allocation and strategic planning. By investing in disruptive innovation and aligning it with the organization's overall strategy, managers can ensure that they remain at the forefront of industry developments and maintain a competitive edge in an ever-evolving landscape.

Innovation Driver Focus: Managers should identify and prioritize the most influential innovation drivers specific to their organization. An understanding of how factors such as technological advancements, market demand, competition, and regulatory changes impact innovation outcomes enables more targeted and effective innovation strategies. This understanding is attained through regular environmental scans and competitor analyses, allowing organizations to remain agile and responsive to changing market conditions.

Mediating and Moderating Effect Awareness: Managers should be cognizant of the mediating effects of different innovation types on firm performance. This awareness empowers them to fine-tune their innovation strategies to maximize their impact. For instance, if the study suggests that exploratory innovation has a more direct influence on firm performance when combined with disruptive innovation, managers can allocate resources and efforts accordingly. This nuanced approach to innovation management ensures that resources are channeled for optimal results.

Ecosystem Alignment: Acknowledging the significance of innovation ecosystems,

managers should actively seek ways to align their organization with disruptive elements within their industry or environment. This alignment may involve forming partnerships, collaborations, or acquisitions to access external disruptive capabilities and technologies. By engaging with the broader innovation ecosystem, organizations can tap into external expertise and resources, further enhancing their capacity for innovation.

Strategic Planning: The study underscores the importance of strategic planning for disruptive innovation. Managers should adopt a strategic approach to identifying, evaluating, and implementing disruptive innovations. This involves assessing the risks and rewards associated with different innovation approaches, as well as allocating resources strategically. By integrating strategic planning into their innovation processes, organizations can proactively address potential market disruptions and position themselves for long-term success.

Incorporating a political perspective of public governance into the managerial implications of this study is essential, particularly within the context of public sector organizations. The application of theoretical insights to real-world business management can be further enriched by considering political factors. Here's how the study's results can be integrated with this political perspective to enhance the strategic management of disruptive innovations:

Political Stakeholder Alignment: Public sector organizations must navigate a diverse landscape of political stakeholders, including government agencies, regulatory bodies, and policymakers. In light of the study's results, managers should strategically align disruptive innovations with the priorities and agendas of these stakeholders. By demonstrating the alignment of disruptive innovations with political objectives, organizations can garner vital support and resources for their initiatives. This approach ensures that innovations are politically well-received and gain momentum.

Policy and Regulatory Implications: Public sector managers need to recognize the influence of the political environment on policies and regulations affecting innovation initiatives. Understanding the intricate web of political factors that shape the regulatory landscape is crucial. Managers should actively engage with policymakers to advocate for policies that support disruptive innovation while being conducive to the organization's broader objectives. By navigating the political landscape effectively, organizations can create an environment that is conducive to innovation and organizational goals.

Public Value Creation: Public sector organizations often have a mandate that extends to creating public value. The study's results can guide managers in identifying disruptive innovations that enhance public value. These innovations can improve public services, reduce costs, or address pressing societal challenges, thereby aligning innovation strategies with the political expectations of public benefit. Public value creation can become a focal point for innovation efforts, reflecting the alignment of organizational goals with political objectives.

Public-Private Partnerships: From the political perspective, public sector managers can leverage disruptive innovations through public-private partnerships. The study's insights can guide managers in identifying private sector entities that bring disruptive capabilities and technologies to the table. Engaging in such partnerships can be strategically political, signaling the organization's commitment to fostering innovation, economic growth, and public welfare.

Political Risk Assessment: Political factors can introduce unique risks to innovation initiatives. The study's results should prompt managers to conduct comprehensive political risk assessments. These assessments can help identify potential challenges arising from changes in government priorities or shifts in regulatory regimes. By proactively assessing and understanding these risks, organizations can develop contingency plans and strategies to mitigate adverse political developments, ensuring the continuity of their innovation initiatives.

Transparency and Accountability: In the public sector, transparency and accountability are paramount. Managers should ensure that the implementation of disruptive innovations aligns with principles of transparency and accountability, which can be inferred from the study's findings. This involves fostering open communication with political stakeholders and the public, as well as establishing robust evaluation and reporting mechanisms. The study's results guide managers in developing transparent and accountable processes that reinforce trust in the organization's innovation efforts.

Policy Advocacy: Leveraging the study's insights, public sector managers can effectively advocate for supportive policies and regulatory frameworks. Their knowledge of disruptive innovation can empower them to participate in political discourse, influence decision-makers, and advocate for policies that encourage innovation, economic growth, and public welfare. By engaging in policy advocacy, organizations can actively shape the political environment to create a more conducive atmosphere for innovation.

By applying these managerial implications, organizations can navigate the intricate landscape of innovation and bolster their performance in the face of disruptive forces. The insights offered by the study serve as practical guidance for business leaders looking to harness innovation's power and maintain a competitive edge in the dynamic and ever-evolving marketplace by harmonizing the study's results with the political perspective of public governance, public sector organizations can unlock the potential of disruptive innovation while ensuring that their initiatives resonate with political priorities and the creation of public value. This integrated approach enhances the strategic management of disruptive innovations and their successful implementation in the public sector, promoting a dynamic and responsive approach to innovation within the political landscape.

4.13 Limitations of the Study

The study, while offering valuable insights into the complex dynamics of innovation drivers, ambidextrous innovation, disruptive innovation, and firm performance, is not without its limitations. It is crucial to acknowledge these limitations to provide a clear perspective on the scope and boundaries of the research. The following are the key limitations of this study:

1. **Generalizability:** One of the primary limitations of this study is its context-specific nature. The research was conducted within a specific geographic and industrial context, which was the United Arab Emirates. This regional focus may limit the generalizability of the findings to other countries, industries, or political environments with different socio-economic conditions, political systems, and innovation cultures. Future research should aim to replicate and validate these findings across diverse contexts to enhance their applicability.

2. **Cross-Sectional Design:** The study employed a cross-sectional research design, which provides a snapshot of the relationships between variables at a particular point in time. While cross-sectional studies are valuable for identifying associations, they do not capture the dynamic nature of innovation processes over time. Longitudinal research designs would offer a more in-depth understanding of how these relationships evolve and change.

3. **Moderation and Mediation Complexity:** The study explored intricate relationships between innovation drivers, ambidextrous innovation, disruptive innovation, and firm

performance. While the results provide valuable insights, it is important to acknowledge that moderation and mediation effects can be complex and influenced by various unmeasured variables. Future research might delve deeper into these complexities and explore potential boundary conditions that affect these relationships.

4. **Non-Supported/Accepted Hypothesis:** As mentioned earlier, one of the hypotheses (H6) was not supported in the study. The reasons for this non-acceptance were not extensively explored in this research. Future studies should investigate the underlying factors and conditions that influence this non-support to gain a more thorough understanding.

Understanding these limitations is critical for researchers, policymakers, and practitioners when interpreting and applying the study's findings. They offer guidance for future research to build upon the existing knowledge base in innovation management and organizational studies, addressing these limitations and expanding the understanding of innovation in different contexts and settings.

4.14 Future Directions for Research

Future studies in this area should aim to build upon the findings of this research and further expand our understanding of the complex interplay between innovation drivers, ambidextrous innovation, disruptive innovation, and firm performance. Several promising avenues for future research emerge from the current study:

1. **Industry-Specific Analysis:** Future studies can explore how the relationships identified in this research vary across different industries. Each industry has its unique characteristics and innovation requirements. Investigating how innovation drivers and strategies affect firm performance in sectors such as technology, healthcare, or manufacturing can provide valuable insights tailored to specific contexts.

2. **Qualitative exploration** can complement quantitative findings, offering a richer understanding of the underlying mechanisms at play. In-depth interviews or case studies can capture nuances that quantitative data may overlook, shedding light on the "how" and "why" of these relationships.

3. **Cross-Cultural Comparisons:** Cultural factors play a significant role in shaping

innovation practices. Comparative studies across countries with diverse cultural backgrounds can help us understand how innovation drivers are influenced by cultural norms and how they impact firm performance. This research can also shed light on the role of leadership and organizational culture in different cultural settings.

4. **Temporal Analysis:** The dynamics of innovation are subject to change over time. Longitudinal studies tracking the influence of innovation drivers, ambidextrous innovation, and disruptive innovation on firm performance can provide insights into how these relationships evolve and adapt in response to changing market conditions and technological advancements.

5. **Micro-Level Investigations:** While this study focuses on the firm-level perspective, future research can delve into micro-level analysis, exploring how innovation drivers and strategies impact specific aspects of firm performance, such as product development, market penetration, or employee satisfaction. This granular approach can reveal valuable insights for practitioners seeking to optimize various dimensions of their organizations.

6. **Environmental Factors:** The study acknowledges the importance of the political system in shaping research priorities and outcomes. Future studies can further investigate how environmental factors, including government policies, market competition, and economic conditions, interact with innovation drivers and strategies to influence firm performance.

7. **SMEs and Start-ups:** Small and medium-sized enterprises (SMEs) and start-ups are essential contributors to innovation and economic growth. Research that specifically focuses on how innovation drivers impact the performance of SMEs and start-ups can offer guidance to these crucial segments of the business landscape.

8. **Innovation Metrics:** Future studies can develop and refine specific innovation metrics to assess the impact of innovation drivers more comprehensively. These metrics can encompass financial indicators, market share, patents, and qualitative assessments of innovation culture.

9. **Ethical Considerations:** As innovation continues to raise ethical and social questions, future research should explore the ethical dimensions of innovation drivers,

ambidextrous innovation, and disruptive innovation. Understanding the ethical implications and consequences of these practices is crucial for responsible innovation.

10. **Global Supply Chains:** In today's interconnected world, supply chains are integral to innovation and firm performance. Investigating how innovation strategies and drivers impact global supply chain dynamics and resilience is a critical area for future research.

11. **Global and Cultural Perspectives** are also worth investigating. Different cultural contexts and the forces of globalization may impact the significance of innovation drivers and the adaptability of ambidextrous strategies, requiring a more nuanced approach to research.

12. **Policy Implications:** Future studies should consider how the findings can inform policy decisions and recommendations. Research that provides insights into how governments and institutions can foster innovation and enhance firm performance can have far-reaching implications for economic growth and competitiveness.
13. **Other Mediators and Moderator:** Addition to that, researchers can expand their focus by exploring additional mediators and moderators in the relationship between innovation drivers, ambidextrous innovation, disruptive innovation, and firm performance.
14. **Exploring Alternative Innovation Types:** Researchers have the opportunity to investigate various forms of innovation and their potential effects on firm performance.

Including the point that was not supported by the hypothesis is an essential step to gain a more comprehensive understanding of the research area. Specifically, as mentioned in the study, the hypothesis H6 was not supported, which dealt with the moderating effect of disruptive innovation on ambidextrous exploratory innovation and firm performance. This non-acceptance of H6 suggests that there is more to explore regarding this specific relationship. Therefore, future studies should consider the following points to investigate the reasons for non-acceptance and how to potentially make it accepted:

1. **In-Depth Qualitative Analysis:** Future studies can conduct in-depth qualitative research to uncover the underlying reasons for the non-acceptance of H6. This could involve interviews with organizational leaders, innovation managers, and key stakeholders to gain insights into how disruptive innovation influences ambidextrous

exploratory innovation processes.

2. **Contextual Factors:** Investigate whether contextual factors, such as industry-specific challenges or organizational culture, play a role in the non-acceptance of H6. Comparing data from various industries or organizations with differing innovation cultures may shed light on contextual influences.

3. **Measurement Refinement:** Examine the possibility of refining the measurement of variables related to disruptive innovation, ambidextrous exploratory innovation, and firm performance. Adjusting the operational definitions or measurement scales may reveal a more nuanced relationship.

4. **Longitudinal Analysis:** Conduct longitudinal studies to observe how the relationship between disruptive innovation, ambidextrous exploratory innovation, and firm performance evolves over time. This approach can capture dynamic changes that may not be evident in cross-sectional data.

5. **Quantitative Reevaluation:** Reassess the relationship using more advanced quantitative techniques, such as structural equation modeling, to explore potential nonlinear or indirect effects that might not have been captured in the initial analysis.

6. **Interaction with Industry Trends:** Investigate whether changes in industry trends, technological advancements, or market disruptions affect the moderating effect of disruptive innovation on ambidextrous exploratory innovation and firm performance. Understanding how external forces impact this relationship is crucial.

7. **Case Studies:** Conduct in-depth case studies of organizations that have successfully integrated disruptive elements into their ambidextrous exploratory innovation processes. These cases can provide practical insights into how to achieve a positive moderating effect.

8. **Synthesize with Existing Literature:** Future studies should synthesize their findings with the existing literature on disruptive innovation and its role in innovation management. This synthesis can provide a more comprehensive understanding of the topic and highlight potential areas for further exploration.

9. **Policy Implications:** Consider the policy implications of the relationship between disruptive innovation and ambidextrous exploratory innovation. How can policymakers and organizations create an environment that fosters the positive moderating effect of disruptive innovation?

By addressing these points, future studies can delve deeper into the reasons for the non-acceptance of H6 and explore ways to potentially make it accepted. This research will contribute to a more nuanced understanding of how disruptive innovation interacts with ambidextrous exploratory innovation and its ultimate impact on firm performance.

In conclusion, the study opens the door to a wide range of potential future research endeavors. These investigations can refine our understanding of innovation management, firm performance, and the intricate relationships between innovation drivers, ambidextrous and disruptive innovation, and the broader business environment. Such studies will be invaluable for academics and practitioners seeking to navigate the ever-evolving landscape of innovation and its impact on organizations and economies. Research in this area can contribute to policymaking by offering insights into how governments and regulatory bodies can foster an environment conducive to innovation, ambidexterity, and disruptive innovation across industries. Understanding the policy implications of these findings can have far-reaching consequences for businesses and economies.

CONCLUSION

The findings have demonstrated the role played by innovation within the operations of the modern public firms. Innovation has been surmised as way through which organizations can identify opportunities, make ventures of turning ideation into development founded on invention, create prototypes, make cohesive forms of production, create comprehensive aspects of sales and marketing, as well as increase the ventures of entrepreneurship. The findings have also showcased the significance of Schumpeter towards the innovation definition and Christensen theories and thus providing more justification for the generation of innovation within firms. Moreover, these findings have illustrated that various means of innovation are handy in actualizing and implementing a strategic mechanism towards firm success.

The set of findings has found out that strategic management is a key factor towards the inculcation of strategic innovation within public firms. Thus, strategic management has been shown as a key mechanism that allows for monitoring and planning as well as assessment and analysis of the aligned organizational goals with regards to imparting cohesive innovation. Based on the historical perspectives of innovation management, the literature has confirmed that strategic management is key in formulating applicable and relevant means of transitioning a firm from the present to the future. The literature has also confirmed that firms should ensure that they make use of the strategic innovation as a way of leveraging and maximizing on the available opportunities. Different types of innovation strategies have been outlined as having a massive influence on how an organization aligns with the existing dynamics in the market as a way of harnessing better outcomes.

The research highlighted the fundamental importance of ambidextrous innovation, as organizations adept at balancing both exploratory and exploitative innovation are better equipped to thrive in dynamic markets. Ambidextrous innovation emerged as a central determinant of improved firm performance. Its ability to adeptly balance exploratory and exploitative innovation functions as an organizational dynamic capability, facilitating adaptability and resilience—crucial attributes in today's rapidly changing business landscape. Ambidextrous innovation played a pivotal role as a mediator in the relationship between innovation drivers and firm performance. This mediation underscored the significance of innovation as a conduit, effectively translating the positive influence of innovation drivers into tangible organizational outcomes. Ambidextrous innovation emerged as a linchpin in the

innovation-performance nexus.

The research revealed that disruptive innovation plays a significant positive moderating role in the relationship between ambidextrous innovation and firm performance, showcasing the strategic significance of integrating disruptive elements to amplify the effects of innovation. Finally, the study elucidated the nuanced impact of disruptive innovation, which exerts varying effects on exploratory and exploitative innovation. While it significantly influences exploitative innovation, its role in exploratory innovation is less pronounced.

The study comprehensively examined the intricate relationships between innovation drivers, ambidextrous innovation, disruptive innovation, and firm performance. Our research synthesized various theoretical frameworks, empirical data, and rigorous statistical analyses to uncover critical insights into the dynamics of organizational innovation strategies and their profound impact on overall performance. These drivers exerted a substantial and positive influence on both exploratory and exploitative innovation within organizations, emphasizing the importance of fostering an environment that nurtures and supports innovation-driving factors.

These findings have extended and enriched various theoretical frameworks in the field of innovation management and strategic theory, including the Theory of Disruptive Innovation, Ambidextrous Innovation Theory, Resource-Based View (RBV) Theory, Mediating Effect Theory, and Innovation Ecosystem Theory. Moreover, the practical implications derived from this research offer valuable guidance for organizations seeking to optimize their innovation strategies and enhance overall performance in rapidly evolving business environments.

The managerial implications derived from this study offer invaluable guidance for organizations, both in the public and private sectors, seeking to harness disruptive innovations effectively while ensuring alignment with their strategic goals. The study highlights the significance of disruptive innovation and its potential to reshape industries, emphasizing the importance of targeting niche or underserved markets. Furthermore, it underscores the need for organizations to strike a balance between exploratory and exploitative innovation, fostering a culture that encourages employees to explore new ideas while optimizing existing processes.

Disruptive innovation is recognized as a strategic resource that organizations should deliberately allocate resources and capabilities toward, aligning with the organization's overall

strategy. Moreover, the study sheds light on the substantial impact of various innovation drivers on exploratory and exploitative innovation, allowing managers to make informed decisions about resource allocation and strategy.

Understanding the mediating effects of different innovation types on firm performance adds another layer of sophistication to managerial insights. It guides managers in allocating resources more effectively and aligning their innovation strategies with specific outcomes. The study also highlights the role of innovation ecosystems and the importance of engaging with external disruptive elements to stay competitive.

The political perspective introduced within the public sector enhances the practical applicability of these managerial implications. Managers in the public sector are encouraged to align disruptive innovations with political objectives, shape conducive policies and regulations, create public value, and foster transparent and accountable processes. Public-private partnerships and effective political risk assessment become key tools in this environment.

Overall, these implications provide a comprehensive roadmap for managers to effectively navigate the complex landscape of innovation. By embracing these insights, organizations can harness disruptive innovations, create sustainable competitive advantages, and contribute to economic growth while ensuring that their strategies are well-aligned with both their internal objectives and the dynamic external political landscape. The study's findings and implications serve as a guiding compass for organizations striving to embrace innovation as a driving force for growth and success.

While this study provides profound insights, it is not without limitations and future research opportunities. Future research endeavors could explore industry and contextual variations to delve deeper into industry-specific dynamics. Investigating the influence of culture and regional factors on innovation dynamics presents a promising avenue for further research to provide a comprehensive picture.

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APPENDICES

Survey Questionnaire

A Study on Innovation Drivers, Ambidextrous Innovation, and Firm Performance in the UAE.

Dear Participant,

You are invited to participate in a research survey conducted by Ghada Alameri from Sorbonne University as part of a study on the impact of innovation drivers, ambidextrous innovation, and disruptive innovation on firm performance in the context of the United Arab Emirates (UAE).

Your input is essential to our research, and your responses will remain confidential. Please take a few minutes to complete this survey. Your valuable insights will contribute to our understanding of the factors influencing innovation and firm performance in the UAE.

Your participation is voluntary, and you may withdraw from the survey at any time without consequences. The data collected will be used for research purposes only, and your privacy will be protected.

Survey Instructions:
- Please read each question carefully and provide honest and thoughtful responses.
- Use the provided Likert scale to rate each statement.
- Feel free to share any additional comments or insights in the space provided.

If you have any questions or concerns about the survey, please contact me on:
e-mail: gaalameri@gmail.com

Thank you for your participation and contribution to our research.

Sincerely,

Ghada Alameri

In answering the questions, you may be unsure about which ***part or parts*** of you focus on. We would like to ask you to choose the answers for that ***part or parts*** you ***know best***. At the end we ask you to tell us to what part you were referring. Please feel free to "tell it as you see it". Your answers are given the confidence and anonymous.

Survey Questionnaire

FOR OFFICE USE ONLY

Please provide your answer by using the tick (✓) mark.

Section 1 – Demographic Information

Gender:	**Male** ◯	**Female** ◯	
Management Level:	**Medium level managers** ◯	**Top level managers** ◯	
Managerial status:	**Front-desk managers** ◯	**Production-based managers** ◯	
Firm age:	**1-5 years** ◯	**From 5 to 10 year** ◯	**Above years 1** ◯

Section 2 – Questions

To what extent do you agree or disagree with the statements given below? Please answer each question by using the tick (✓) mark between the range of 1 to 5. The given scale represents the following values:

- Strongly Disagree (SD) 1
- Disagree (D) 2
- Neutral (N) 3
- Agree (A) 4
- Strongly Agree (SA) 5

A.	**Regulations**					
	Our company has to comply with regulation	1	2	3	4	5
	Penalties will be imposed if our company does not comply with the regulation	1	2	3	4	5
	There is attainment after the implementation of the regulation in our company	1	2	3	4	5
	An inspection is carried out in our company periodically	1	2	3	4	5
B	**Technology**					
	Our company has deployed the latest technology	1	2	3	4	5

	Our company continuously exploits the potential of technology	1	2	3	4	5
	Our company has made greater use of technology	1	2	3	4	5
	Our company has set up an in-house R&D unit	1	2	3	4	5
	Our company has deployed the latest technology	1	2	3	4	5
C	**Cross-functional coordination**					
	Our company has effective cross-departmental communication system/coordination	1	2	3	4	5
	Decisions were made on a timely basis with adequate opportunity for discussion in our cross-functional team	1	2	3	4	5
	There was an awareness of the collaboration among cross-functional team members rather than competition predominated	1	2	3	4	5
	Our cross-functional team members were highly committed to producing a quality product/service	1	2	3	4	5
	My team's chairperson offered support to cross-functional team members	1	2	3	4	5
D	**Supplier involvement**					
	Our company has shared proprietary information with key suppliers	1	2	3	4	5
	Our company does conduct suppliers' evaluation/assessment	1	2	3	4	5
	Our company is able to collaborate with key suppliers from the design process to integrate issues	1	2	3	4	5
	In our company, creating suppliers' awareness of the importance of technology becomes increasingly desirable	1	2	3	4	5
E	**Market focus**					
	Our company has established a specific target market	1	2	3	4	5
	In our company, preliminary market assessment is made before resources are assigned	1	2	3	4	5
	Our company encourages active engagement with customers in designing products	1	2	3	4	5
	Our company has managed to obtain customers' views on product ideas	1	2	3	4	5
F	**Exploratory Innovation**					
	Acquire manufacturing technologies and skills entirely new to the firm.	1	2	3	4	5
	Open up new markets.	1	2	3	4	5
	Acquire entirely new managerial and organizational skills that are important for innovation					
	Enter new technology fields and introduce new generations of products					
G	**Exploitative Innovation**					
	Invest mainly in enhancing skills and mature technologies.	1	2	3	4	5

	Target efforts on improving the efficiency of innovation processes rather than on initiating new ventures radically different from what firms are familiar with.	1	2	3	4	5
	Reduce production costs and the consumption of materials	1	2	3	4	5
	Base strategies on the knowledge and abilities that are already familiar to the firm, and then search for solutions to customer problems that are similar to existing solutions, rather than searching for completely new solutions.	1	2	3	4	5
H	**Disruptive Innovation**					
	We introduce highly disruptive new products	1	2	3	4	5
	Our new products are very attractive to a different customer segment at the time of product introduction	1	2	3	4	5
	Our new products are those where the mainstream customers found the innovations attractive over time as they were able to satisfy the requirements of the mainstream market	1	2	3	4	5
	The introduction of our new products helps us open up a new market	1	2	3	4	5
I	**Firm Performance**					
	overall efficiency of operations	1	2	3	4	5
	market share growth	1	2	3	4	5
	return on investments	1	2	3	4	5
	return on sales	1	2	3	4	5
	profit growth	1	2	3	4	5
	return on assets	1	2	3	4	5
	sales growth	1	2	3	4	5

THANKS FOR YOUR COOPERATION

Many, many sincere thanks for your assistance and cooperation in completing this questionnaire.

Abstract (English)

Doctoral Student: Ghada Alameri

Thesis Title: The Dynamic Interplay of Innovation Drivers, Ambidextrous Innovation, and Firm Performance through Disruptive Innovation Moderation: Correlation Analysis with UAE Focus Study

Keywords: Innovation drivers, ambidextrous innovation, disruptive innovation, firm performance, new public management, UAE public firm

This comprehensive research is devoted to unraveling the intricate relationships among innovation drivers, ambidextrous innovation, disruptive innovation, and firm performance. The study illuminates the dynamic nature of organizational innovation strategies and their profound impact on overall performance through meticulous synthesis of diverse theoretical frameworks, empirical data, and rigorous statistical analyses. Central to our findings is the pivotal role of innovation drivers—both external and internal—as potent catalysts influencing both exploratory and exploitative innovation within organizations. These drivers, ranging from market demands and technological advancements to organizational culture and leadership vision, create a multifaceted innovation ecosystem. By delving into the nuanced relationships among these elements, the research provides a comprehensive understanding of how innovation drivers shape the interplay between exploratory and exploitative innovation, elucidating the intricate mechanisms guiding organizational innovation strategies and their ultimate effects on performance.

While existing literature predominantly concentrates on innovation within the private sector, this study acknowledges a gap in understanding the dynamics of innovation in the public sector. Despite a growing interest in ambidexterity in public management, empirical investigations confirming its effectiveness are lacking. The study identifies the distinct challenges faced by public firms in achieving ambidexterity, emphasizing the need for tailored approaches. Recognizing the influence of external factors

such as regulations and technological advancements, alongside internal factors like organizational culture and leadership, the research outlines a multifaceted innovation ecosystem within public organizations. This research significantly contributes to the fields of innovation management and organizational studies by furnishing empirical evidence and valuable insights into the complex nature of innovation dynamics. It underscores the paramount importance of strategic adaptability in navigating the dynamic and highly competitive world of contemporary business. As organizations endeavor to fine-tune their innovation strategies, embracing innovation drivers, cultivating ambidextrous innovation, and consciously integrating disruptive elements become strategic imperatives for achieving enduring success.

Consistently aligning with the systematic literature analysis, the research question serves as a guiding thread in fulfilling the core objective of the study. The foundational research question steering the literature analysis is framed as follows:

How does ambidextrous innovation mediate the relationship between innovation drivers and firm performance and to what extent does disruptive innovation moderate the relationship between ambidextrous innovation and organizational performance in the public firm within the context of the United Arab Emirates (UAE)?

In addressing this central research query, the study formulates hypotheses that align with key themes and paradigms. These hypotheses are strategically crafted to comprehensively analyze the literature, providing a robust foundation for exploring and answering the primary research question. The study formulates hypotheses aligned with key themes and paradigms, providing a robust foundation for empirical analysis. The research aims to advance comprehension of the relationships between ambidextrous innovation, innovation drivers, and firm performance in the public sector through an integrative approach.

The research provides valuable insights into the public sector's innovation landscape by examining the relationships among innovation drivers, ambidextrous innovation, and firm performance. It underscores the significance of understanding the role of innovation drivers in shaping ambidextrous practices, emphasizing the need for empirical studies to fill this research gap. Innovation drivers, comprising external

and internal factors, emerge as influential forces shaping the innovation landscape. External factors, such as market demands and technological advancements, interact dynamically with internal factors like organizational culture and leadership vision, creating a multifaceted innovation ecosystem within organizations. Internally, organizational culture, leadership vision, and resource availability are identified as influential innovation drivers. A supportive organizational culture that fosters creativity, risk-taking, and visionary leadership sets the tone for successful innovation. Adequate resource allocation, including financial and human resources, ensures the feasibility and sustainability of innovation efforts. Understanding the interplay between external and internal innovation drivers provides organizations with a strategic roadmap for fostering a culture of innovation and responding proactively to market dynamics.

Ambidextrous innovation takes center stage in this research as a dynamic capability, showcasing its adeptness at balancing exploratory and exploitative innovation. Ambidextrous innovation emerges as a guiding force that enables organizations to navigate the spectrum of innovation, ensuring a balance between incremental improvements and radical breakthroughs. The research highlights the mediating potential of ambidextrous innovation in the relationship between innovation drivers and firm performance. Acting as a conduit, ambidextrous innovation effectively translates the positive influences of both external and internal innovation drivers into tangible organizational outcomes. This mediation underscores ambidextrous innovation's instrumental role in ensuring that innovation efforts contribute directly to overall organizational performance.

The study delves into disruptive innovation, elucidating its role as a moderator. Disruptive innovation amplifies impacts on ambidextrous innovation, empowering organizations to navigate the ever-changing landscape of market dynamics and maintain their competitive edge. A noteworthy observation is that disruptive innovation has a more pronounced effect on the relationship between ambidextrous exploitative innovation and overall organizational performance than on ambidextrous exploratory innovation. Disruptive innovation emerges as a strategic moderator in the study, amplifying the positive impacts of ambidextrous innovation. Notably, the research considers the influence of disruptive forces in

response to dynamic challenges, such as the pandemic of COVID-19. The study highlights the role of technology-driven solutions, remote collaboration tools, and digital infrastructure in addressing public crises and fostering resilience across various sectors.

This study thoroughly explores the intricate relationships among innovation drivers, ambidextrous innovation, disruptive innovation, and firm performance. By emphasizing the pivotal role of innovation drivers and their influence on both exploratory and exploitative innovation within organizations, the research scrutinizes the moderating impact of disruptive innovation on performance outcomes. Ambidextrous innovation's mediating role in connecting innovation drivers with firm performance is highlighted, accentuating the effects of disruptive innovation. The study encourages organizations to foster innovation drivers, cultivate ambidextrous innovation, and strategically integrate disruptive elements into their innovation strategies, offering practical guidance in navigating the dynamic landscape of modern business.

The research methodology guiding this study lies in the foundational framework that shapes the entire research process. Delving into the specifics of the chosen research design, approach, and philosophical underpinnings, the study introduces the unique context of the United Arab Emirates (UAE) as a compelling backdrop for scrutinizing public administration and governance. The "Research Onion" conceptual tool is employed, providing a structured and hierarchical guide to research design. The methodology section defines the research philosophy rooted in realism, signifying a belief in an objective reality, complemented by a pragmatic epistemological stance that emphasizes a practical and context-dependent approach to knowledge acquisition. The deductive research approach is employed, initiating the study with established theories and hypotheses, ensuring a structured and theory-driven foundation. The overall research strategy adopts a quantitative cross-sectional case study design, offering a snapshot of the interplay between innovation drivers and firm performance in the UAE. Specifics of data collection and analysis techniques are outlined, employing tools like IBM SPSS and IBM AMOS, and considering the Sobel test for assessing mediation effects. Ethical considerations are paramount, ensuring adherence to

guidelines for informed consent, confidentiality, and participant well-being. The research methodology provides a comprehensive and robust framework, encompassing philosophical underpinnings, research approach, strategy, and data handling techniques.

The results shed light on the intricate dynamics among innovation drivers, ambidextrous innovation, disruptive innovation, and firm performance, providing valuable insights into the complex challenges organizations face in their quest for innovation excellence and competitive advantage. By affirming hypotheses, the study underscores the crucial role of innovation drivers, aligning with the Resource-Based View theory and highlighting how internal resources, including visionary leadership and abundant resources, contribute to securing a competitive edge. The significance of ambidextrous innovation is reaffirmed, emphasizing its role in balancing exploratory and exploitative innovation for adaptability in dynamic markets. Additionally, the study explores the mediating role of ambidextrous innovation and the moderating impact of disruptive innovation, elucidating their organizational implications. Nuanced findings stress the necessity for tailored innovation strategies based on the type of innovation. Recognizing the influence of the UAE's political system on study outcomes, the section underscores the importance of contextual understanding for broader applicability. By addressing limitations and proposing avenues for future research, this segment ensures a comprehensive reflection on the study's contributions and implications across diverse political and socio-economic environments.

This study makes substantial theoretical contributions across various domains, enriching our understanding of innovation dynamics within organizations. Firstly, within the Theory of Disruptive Innovation, the research elucidates the moderating role of disruptive innovation, confirming its potential to augment the influence of specific innovation drivers, particularly in the realm of exploitative innovation. Indirectly intersecting with Ambidextrous Innovation Theory, the study emphasizes the organizational imperative of balancing exploratory and exploitative innovation, underscoring the role of disruptive innovation in this equilibrium. In alignment with the Resource-Based View (RBV) theory, the research recognizes disruptive innovation as a strategic resource, contributing to sustaining competitive advantage

by amplifying the impact of innovation drivers. Substantial contributions extend to the Innovation Drivers Framework, providing empirical evidence of the significant impacts of these drivers on both exploratory and exploitative innovation. By employing mediating effects to elucidate how innovation drivers influence firm performance through exploratory and exploitative innovation, the study extends the scope of the Mediating Effect Theory in the context of innovation management. Additionally, the research aligns with Innovation Ecosystem Theory, emphasizing the adaptive necessity for organizations to align with disruptive elements. Lastly, the implications of the findings stretch across various Strategic Management Theories, underlining the critical importance of aligning innovation strategies with organizational goals, strategically planning for disruptive innovation, and assessing the associated risks and rewards. Overall, these multifaceted contributions offer valuable scholarly insights and provide actionable guidance for practitioners navigating the intricate landscape of innovation and its profound impact on firm performance.

Through a meticulous examination of the intricate interplay between innovation drivers, ambidextrous innovation, disruptive innovation, and firm performance, the study unravels valuable insights crucial for organizations navigating the complex landscape of contemporary business. It emphasizes the strategic imperatives of actively embracing innovation drivers, fostering ambidextrous innovation, and purposefully integrating disruptive elements. These imperatives offer organizations a roadmap for achieving enduring success in an environment marked by constant evolution and change. The findings underscore the importance of recognizing external and internal factors influencing innovation and cultivating a dynamic capability, such as ambidextrous innovation, to effectively balance exploratory and exploitative aspects. Additionally, the acknowledgment of disruptive innovation as a strategic catalyst reinforces the study's practical relevance, urging organizations to proactively respond to market dynamics and challenges to maintain a competitive edge. The research provides actionable insights that position organizations at the forefront of innovation excellence and sustainable success in today's dynamic business landscape.

Résumé (Français)

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Titre de thèse : L'interaction dynamique des moteurs de l'innovation, de l'innovation ambidextre et de la performance de l'entreprise à travers la modération de l'innovation perturbatrice : Analyse de corrélation avec une étude de cas sur les Émirats arabes unis

Mots-clés : Moteurs de l'innovation, innovation ambidextre, innovation perturbatrice, performance de l'entreprise, nouvelle gestion publique, entreprise publique émiratie

Cette recherche approfondie vise à démêler les relations complexes entre les moteurs de l'innovation, l'innovation ambidextre, l'innovation perturbatrice et la performance de l'entreprise. L'étude éclaire la nature dynamique des stratégies d'innovation organisationnelle et leur impact profond sur la performance globale grâce à une synthèse méticuleuse de divers cadres théoriques, de données empiriques et d'analyses statistiques rigoureuses. Au cœur de nos conclusions se trouve le rôle central des moteurs de l'innovation, à la fois externes et internes, en tant que catalyseurs puissants influençant à la fois l'innovation exploratoire et exploitative au sein des organisations. Ces moteurs, allant des demandes du marché et des avancées technologiques à la culture organisationnelle et à la vision du leadership, créent un écosystème d'innovation complexe. En explorant les relations nuancées entre ces éléments, la recherche offre une compréhension approfondie de la manière dont les moteurs de l'innovation façonnent l'interaction entre l'innovation exploratoire et exploitative, élucidant les mécanismes complexes guidant les stratégies d'innovation organisationnelle et leurs effets ultimes sur la performance.

Alors que la littérature existante se concentre principalement sur l'innovation dans le secteur privé, cette étude reconnaît une lacune dans la compréhension de la dynamique de

l'innovation dans le secteur public. Malgré un intérêt croissant pour l'ambidextrie dans la gestion publique, des enquêtes empiriques confirmant son efficacité font défaut. L'étude identifie les défis distincts auxquels les entreprises publiques sont confrontées pour atteindre l'ambidextrie, soulignant la nécessité d'approches sur mesure. Reconnaissant l'influence de facteurs externes tels que les réglementations et les avancées technologiques, ainsi que des facteurs internes tels que la culture organisationnelle et le leadership, la recherche esquisse un écosystème d'innovation complexe au sein des organisations publiques. Cette recherche contribue de manière significative aux domaines de la gestion de l'innovation et des études organisationnelles en fournissant des preuves empiriques et des insights précieux sur la nature complexe de la dynamique de l'innovation. Elle souligne l'importance primordiale de l'adaptabilité stratégique pour naviguer dans le monde dynamique et hautement compétitif des affaires contemporaines. Alors que les organisations s'efforcent de peaufiner leurs stratégies d'innovation, l'adoption active des moteurs de l'innovation, la culture d'innovation ambidextre et l'intégration consciente d'éléments perturbateurs émergent comme des impératifs stratégiques pour atteindre un succès durable.

S'alignant de manière cohérente avec l'analyse systématique de la littérature, la question de recherche sert de fil conducteur pour atteindre l'objectif principal de l'étude. La question de recherche fondamentale orientant l'analyse de la littérature est formulée comme suit:

Dans quelle mesure l'innovation ambidextre agit-elle en tant que médiatrice dans la relation entre les moteurs de l'innovation et la performance de l'entreprise, et dans quelle mesure l'innovation perturbatrice module-t-elle la relation entre l'innovation ambidextre et la performance organisationnelle dans l'entreprise publique dans le contexte des Émirats arabes unis (EAU)?

Pour répondre à cette question centrale de recherche, l'étude formule des hypothèses qui s'alignent sur les thèmes et paradigmes clés. Ces hypothèses sont élaborées de manière stratégique

pour analyser de manière approfondie la littérature, fournissant une base solide pour explorer et répondre à la question de recherche principale. La recherche vise à faire progresser la compréhension des relations entre l'innovation ambidextre, les moteurs de l'innovation et la performance de l'entreprise dans le secteur public grâce à une approche intégrative.

La recherche offre des insights précieux sur le paysage de l'innovation dans le secteur public en examinant les relations entre les moteurs de l'innovation, l'innovation ambidextre et la performance de l'entreprise. Elle souligne l'importance de comprendre le rôle des moteurs de l'innovation dans le façonnement des pratiques ambidextres, mettant en évidence la nécessité d'études empiriques pour combler cette lacune de recherche. Les moteurs de l'innovation, composés de facteurs externes et internes, émergent comme des forces influentes façonnant le paysage de l'innovation. Les facteurs externes, tels que les demandes du marché et les avancées technologiques, interagissent de manière dynamique avec des facteurs internes tels que la culture organisationnelle et la vision du leadership, créant un écosystème d'innovation complexe au sein des organisations. À l'intérieur de l'organisation, la culture organisationnelle, la vision du leadership et la disponibilité des ressources sont identifiées comme des moteurs d'innovation influents. Une culture organisationnelle favorable favorisant la créativité, la prise de risque et un leadership visionnaire donne le ton pour une innovation réussie. L'allocation adéquate des ressources, y compris financières et humaines, garantit la faisabilité et la durabilité des efforts d'innovation. Comprendre l'interaction entre les moteurs d'innovation externes et internes offre aux organisations une feuille de route stratégique pour favoriser une culture de l'innovation et répondre de manière proactive aux dynamiques du marché.

L'innovation ambidextre occupe une place centrale dans cette recherche en tant que capacité dynamique, montrant son aptitude à équilibrer l'innovation exploratoire et exploitative.

L'innovation ambidextre émerge comme une force guidante qui permet aux organisations de naviguer dans le spectre de l'innovation, assurant un équilibre entre les améliorations progressives et les percées radicales. La recherche met en lumière le potentiel de médiation de l'innovation ambidextre dans la relation entre les moteurs de l'innovation et la performance de l'entreprise. Agissant comme un conduit, l'innovation ambidextre traduit efficacement les influences positives des moteurs de l'innovation externes et internes en résultats organisationnels tangibles. Cette médiation souligne le rôle instrumental de l'innovation ambidextre pour s'assurer que les efforts d'innovation contribuent directement à la performance organisationnelle globale.

L'étude explore l'innovation perturbatrice, élucidant son rôle en tant que modérateur. L'innovation perturbatrice amplifie les impacts sur l'innovation ambidextre, permettant aux organisations de naviguer dans le paysage en constante évolution des dynamiques du marché et de maintenir leur avantage concurrentiel. Une observation remarquable est que l'innovation perturbatrice a un effet plus prononcé sur la relation entre l'innovation ambidextre exploitative et la performance organisationnelle globale que sur l'innovation ambidextre exploratoire. L'innovation perturbatrice émerge en tant que modérateur stratégique dans l'étude, amplifiant les impacts positifs de l'innovation ambidextre. Notamment, la recherche considère l'influence des forces perturbatrices en réponse à des défis dynamiques, tels que la pandémie de COVID-19. L'étude met en avant le rôle des solutions technologiques, des outils de collaboration à distance et de l'infrastructure numérique dans la gestion des crises publiques et la promotion de la résilience dans divers secteurs.

Cette étude explore en profondeur les relations complexes entre les moteurs de l'innovation, l'innovation ambidextre, l'innovation perturbatrice et la performance de l'entreprise. En mettant l'accent sur le rôle central des moteurs de l'innovation et de leur influence sur

l'innovation exploratoire et exploitative au sein des organisations, la recherche examine l'impact modérateur de l'innovation perturbatrice sur les résultats de performance. Le rôle de médiation de l'innovation ambidextre dans la connexion entre les moteurs de l'innovation et la performance de l'entreprise est souligné, mettant en lumière les effets de l'innovation perturbatrice. L'étude encourage les organisations à favoriser les moteurs de l'innovation, à cultiver l'innovation ambidextre et à intégrer stratégiquement des éléments perturbateurs dans leurs stratégies d'innovation, offrant des orientations pratiques pour naviguer dans le paysage dynamique des affaires modernes.

La méthodologie de recherche guidant cette étude repose sur le cadre fondamental qui façonne l'ensemble du processus de recherche. En explorant les spécificités de la conception de recherche choisie, de l'approche et des fondements philosophiques, l'étude introduit le contexte unique des Émirats arabes unis (EAU) en tant que toile de fond convaincante pour examiner l'administration publique et la gouvernance. L'outil conceptuel "Research Onion" est utilisé, fournissant un guide structuré et hiérarchique pour la conception de la recherche. La section méthodologie définit la philosophie de recherche ancrée dans le réalisme, signifiant une croyance en une réalité objective, complétée par une posture épistémologique pragmatique qui met l'accent sur une approche pratique et dépendante du contexte pour l'acquisition de connaissances. L'approche de recherche déductive est utilisée, initiant l'étude avec des théories et des hypothèses établies, assurant une fondation structurée et axée sur la théorie. La stratégie de recherche globale adopte une conception d'étude de cas quantitative transversale, offrant un instantané de l'interaction entre les moteurs de l'innovation et la performance de l'entreprise aux EAU. Les détails des techniques de collecte et d'analyse des données sont décrits, utilisant des outils tels que IBM SPSS et IBM AMOS, et envisageant le test de Sobel pour évaluer les effets de médiation.

Les considérations éthiques sont primordiales, assurant le respect des directives en matière de consentement éclairé, de confidentialité et du bien-être des participants. La méthodologie de recherche fournit un cadre complet et robuste, englobant les fondements philosophiques, l'approche de recherche, la stratégie et les techniques de manipulation des données.

Les résultats mettent en lumière les dynamiques complexes entre les moteurs de l'innovation, l'innovation ambidextre, l'innovation perturbatrice et la performance de l'entreprise, offrant des perspectives précieuses sur les défis complexes auxquels les organisations sont confrontées dans leur quête d'excellence et d'avantage concurrentiel en matière d'innovation. En confirmant les hypothèses, l'étude souligne le rôle crucial des moteurs de l'innovation, en harmonie avec la théorie de la Vue Basée sur les Ressources, et met en avant la manière dont les ressources internes, y compris un leadership visionnaire et des ressources abondantes, contribuent à assurer un avantage concurrentiel. La signification de l'innovation ambidextre est réaffirmée, soulignant son rôle dans l'équilibrage entre l'innovation exploratoire et exploitative pour l'adaptabilité sur des marchés dynamiques. De plus, l'étude explore le rôle médiateur de l'innovation ambidextre et l'impact modérateur de l'innovation perturbatrice, élucidant leurs implications organisationnelles. Des résultats nuancés soulignent la nécessité de stratégies d'innovation adaptées en fonction du type d'innovation. Reconnaissant l'influence du système politique des Émirats arabes unis sur les résultats de l'étude, cette section souligne l'importance de la compréhension contextuelle pour une applicabilité plus large. En abordant les limitations et en proposant des pistes pour des recherches futures, ce segment assure une réflexion complète sur les contributions et les implications de l'étude dans des environnements politiques et socio-économiques diversifiés.

Cette étude apporte d'importantes contributions théoriques dans divers domaines, enrichissant notre compréhension des dynamiques de l'innovation au sein des organisations. Tout

d'abord, dans la théorie de l'Innovation Perturbatrice, la recherche élucide le rôle modérateur de l'innovation perturbatrice, confirmant son potentiel pour augmenter l'influence de moteurs d'innovation spécifiques, notamment dans le domaine de l'innovation exploitative. Interagissant indirectement avec la théorie de l'Innovation Ambidextre, l'étude souligne l'impératif organisationnel d'équilibrer l'innovation exploratoire et exploitative, mettant en avant le rôle de l'innovation perturbatrice dans cet équilibre. En alignement avec la théorie de la Vue Basée sur les Ressources (RBV), la recherche reconnaît l'innovation perturbatrice comme une ressource stratégique, contribuant à maintenir un avantage concurrentiel en amplifiant l'impact des moteurs d'innovation. Les contributions substantielles s'étendent au Cadre des Moteurs d'Innovation, fournissant des preuves empiriques des impacts significatifs de ces moteurs sur l'innovation exploratoire et exploitative. En utilisant des effets médiateurs pour élucider comment les moteurs d'innovation influencent la performance de l'entreprise à travers l'innovation exploratoire et exploitative, l'étude élargit la portée de la Théorie des Effets Médiateurs dans le contexte de la gestion de l'innovation. De plus, la recherche s'aligne avec la Théorie de l'Écosystème d'Innovation, soulignant la nécessité pour les organisations de s'aligner sur des éléments perturbateurs. Enfin, les implications des résultats s'étendent à diverses Théories de la Gestion Stratégique, soulignant l'importance critique de l'alignement des stratégies d'innovation sur les objectifs organisationnels, la planification stratégique pour l'innovation perturbatrice, et l'évaluation des risques et des récompenses associés. Globalement, ces contributions multifacettes offrent des perspectives savantes précieuses et fournissent des orientations opérationnelles pour les praticiens naviguant dans le paysage complexe de l'innovation et de son impact profond sur la performance de l'entreprise.

À travers un examen méticuleux de l'interaction complexe entre les moteurs de l'innovation, l'innovation ambidextre, l'innovation perturbatrice et la performance de l'entreprise, l'étude dévoile des perspectives précieuses cruciales pour les organisations évoluant dans le paysage commercial contemporain. Elle met l'accent sur les impératifs stratégiques d'embrasser activement les moteurs de l'innovation, de favoriser l'innovation ambidextre et d'intégrer délibérément des éléments perturbateurs. Ces impératifs offrent aux organisations une feuille de route pour atteindre un succès durable dans un environnement marqué par une évolution constante et des changements. Les résultats soulignent l'importance de reconnaître les facteurs externes et internes influençant l'innovation et de cultiver une capacité dynamique, telle que l'innovation ambidextre, pour équilibrer efficacement les aspects exploratoires et exploitatifs. De plus, la reconnaissance de l'innovation perturbatrice comme un catalyseur stratégique renforce la pertinence pratique de l'étude, exhortant les organisations à répondre de manière proactive aux dynamiques et aux défis du marché pour maintenir un avantage concurrentiel. La recherche offre des perspectives exploitables positionnant les organisations à la pointe de l'excellence en matière d'innovation et du succès durable dans le paysage commercial dynamique d'aujourd'hui.

Research Summary (English)

Doctoral Student: Ghada Alameri

Thesis Title: The Dynamic Interplay of Innovation Drivers, Ambidextrous Innovation, and Firm Performance through Disruptive Innovation Moderation: Correlation Analysis with UAE Focus Study

Keywords: Innovation drivers, ambidextrous innovation, disruptive innovation, firm performance, new public management, UAE public firm

This study delves into the complex relationships between innovation drivers, ambidextrous innovation, disruptive innovation, and firm performance. It underscores the vital role of innovation drivers, emphasizing their impact on both exploratory and exploitative innovation within organizations and examining the moderating role of disruptive innovation on performance results. This research highlights ambidextrous innovation's mediating role in linking innovation drivers with firm performance and emphasizes the enhancing effect of disruptive innovation. Organizations are encouraged to nurture innovation drivers, foster ambidextrous innovation, and strategically integrate disruptive elements into their innovation approaches. These insights provide practical guidance for organizations navigating the dynamic landscape of modern business.

The existing literature on innovation studies has primarily focused on the private sector and business firms, which presents a limitation in terms of understanding the dynamics of innovation in the public sector. While there is a growing interest and recognition of the importance of ambidexterity in the public sector, there is a lack of empirical investigations that provide concrete evidence of its effectiveness. The limited number of empirical studies hinders our

understanding of the factors, processes, and outcomes associated with ambidexterity in public management. Without robust empirical evidence, it becomes challenging to identify best practices, develop effective strategies, and make informed decisions regarding the implementation of ambidexterity in public organizations.

Researchers acknowledge that empirical findings derived from public firms cannot be generalized to those obtained from private organizations due to the inherent differences in their managerial structures, processes, and coordination mechanisms in reconciling conflicting operations (Pollitt & Bouckaert, 2017). Public firms face notable challenges in achieving ambidexterity (Kim, 2019). Prior studies have provided evidence supporting the proposition that public firms are more prone to exhibiting diverse levels of innovation compared to profit organizations (Meyer, Neck, & Meeks, 2017; Schillemans, Klijn, & Koppenjan, 2013). The main resources that a firm possesses, as well as the capabilities of its other resource base, such as advanced technologies, stakeholders, regulations, and innovation strategies, will significantly impact the amount of innovation ambidexterity ability that exists within that firm's performance (Fu, Liu & Liao, 2018).

This study introduces core types of innovation drivers to enhance ambidextrous innovation, which also significantly influences firms' performance. Recent research supports the notion that public firms have distinct characteristics and face specific challenges in achieving ambidexterity. For example, Kim (2019) highlights the unique governance and accountability mechanisms that public firms operate under, which influence their ability to balance exploration and exploitation activities. Meyer, Neck, and Meeks (2017) further emphasize the varying levels of innovation exhibited by public firms compared to private organizations, suggesting the need for tailored

approaches to ambidexterity in the public sector. This highlights the significance of considering the specific innovation drivers that shape ambidextrous practices in the public sector.

Understanding the role of innovation drivers in the public sector is crucial due to the unique challenges and dynamics faced by public organizations. Regulations, for example, play a significant role in shaping the boundaries within which public organizations operate and innovate. Technology advancements can provide opportunities for public sector innovation, while cross-functional coordination and supplier involvement can facilitate knowledge sharing and collaboration. Market focus is essential for public organizations to align their innovation efforts with the needs and demands of the constituents they serve (Bouckaert and Halligan, 2008). Exploring the impact of these innovation drivers within the ambidextrous innovation framework in the public sector can provide valuable insights for both researchers and practitioners. Empirical studies specifically examining the relationship between innovation drivers, ambidextrous innovation, and firm performance in the public sector are needed to fill this research gap. Such studies can shed light on how public organizations can leverage these drivers to enhance their innovative capabilities, improve performance outcomes, and effectively balance exploration and exploitation activities (Klang et al., 2020; Fu et al., 2018).

In addition, the concept of disruptive innovation has gained recognition as a significant factor that moderates the relationship between ambidextrous innovation and firm performance. Recent research has highlighted the necessity to investigate how disruptive innovation influences the effectiveness of ambidexterity and its impact on organizational performance. Researchers have emphasized the importance of investigating disruptive innovation's influence on ambidexterity's effectiveness and its impact on organizational performance (Christensen, Raynor, & McDonald,

2015; Tushman & O'Reilly, 2017). The work of Christensen and co-authors provides a comprehensive understanding of disruptive innovation, highlighting its disruptive nature and the potential for creating new opportunities and challenges for organizations. Their research emphasizes the need to recognize and adapt to disruptive forces to leverage ambidexterity for improved performance outcomes effectively. Disruptive innovation is often accelerated by various factors, including changes in the economic, environmental, and societal landscape, as well as the occurrence of natural disasters and diseases. These factors create new opportunities, challenges, and constraints that drive organizations to seek innovative solutions.

Diseases and pandemics, exemplified by the recent COVID-19 crisis, have profound implications for societies, economies, and public health. In the face of these challenges, there is an increasing need for innovative approaches to address healthcare, public management, and overall societal well-being. Scholars have emphasized that disease outbreaks serve as catalysts for organizations and governments to adapt swiftly, resulting in the emergence of disruptive solutions aimed at controlling the transmission of the virus, ensuring essential service delivery, and facilitating remote collaboration (Bragazzi et al., 2021; Hollander & Carr, 2020). Notably, disruptive innovations in telehealth, digital infrastructure, and remote work solutions have gained significant traction in response to the COVID-19 pandemic, enabling effective remote healthcare delivery, efficient digital connectivity, and flexible work arrangements. The COVID -19 pandemic has highlighted the critical role of innovation in addressing public health crises and fostering resilience in various sectors. As researchers continue to explore and advance disruptive solutions, the importance of technology-driven healthcare interventions, remote collaboration tools, and digital infrastructure becomes increasingly evident. These innovative approaches are essential for mitigating the impact of the pandemic and preparing for future challenges.

Taking into account the insights from these studies within the context of our research, we aim to explore further the influence of disruptive innovation on ambidexterity and its subsequent impact on public organizational performance. This will contribute to a deeper understanding of the complexities and dynamics involved in effectively managing ambidextrous practices in the context of our study. By considering the moderating effect of disruptive innovation, this research endeavor aims to contribute to a more profound understanding of the intricate dynamics involved in ambidextrous practices within the public sector. This study adopts an integrative approach by incorporating the latest research on public firms' unique challenges and characteristics, the role of innovation drivers, and disruptive innovation within the ambidexterity approach. By examining these interrelated factors, the research aims to advance our comprehension of the relationship between ambidextrous innovation, innovation drivers, and firm performance within the context of the United Arab Emirates (UAE).

Utilizing the United Arab Emirates (UAE) as a case study can make a noteworthy scientific contribution, contingent on the specific research objectives and context. The UAE offers a unique and distinctive backdrop for research, characterized by its political, socio-cultural, economic, and cultural distinctiveness, setting it apart from other countries. Research conducted within the UAE provides a rich source of insights and data not readily accessible elsewhere, making it a valuable subject for scientific inquiry. Furthermore, despite being a specific case, the findings and implications of research in the UAE can have broader generalizability, testing and illuminating wider theories and concepts across different contexts. Additionally, research in the UAE has the potential to directly impact policy and decision-making, both within the country and internationally, particularly in areas such as energy policy, urban planning, healthcare, and

education. Moreover, the UAE's multicultural and diverse society is an ideal setting for cross-cultural research, contributing to a deeper understanding of multiculturalism, cultural exchange, and social integration, with potential applicability beyond its borders.

This doctoral thesis has been based on the research question that provides the foundation for conceptualizing and examining the key dissertation subjects. In essence, entails a;

- **Contextual Gap:** Investigate how the unique economic, political, and cultural context of the United Arab Emirates (UAE) shapes the interplay between innovation drivers, ambidextrous innovation, and firm performance. Understanding these contextual nuances is crucial for tailoring innovation strategies in this specific setting.

- **Sectorial Gap:** Examine the findings related to the connections among innovation drivers, ambidextrous innovation, and firm performance in public sector organizations. This sectorial perspective can reveal sector-specific challenges and opportunities for innovation.

- **Mediation Mechanism Gap:** Investigate the specific mechanisms through which ambidextrous innovation mediates the relationships between innovation drivers and firm performance. Understanding the underlying processes involved is essential for developing practical strategies for firms in the UAE.

- **Moderation Mechanism Gap:** Explore the mechanisms through which disruptive innovation moderates the relationships between ambidextrous innovation and firm performance. Understanding how disruptive innovation enhances or constrains the effects of ambidextrous innovation in the UAE's context can provide actionable insights for organizations aiming to leverage disruptive elements effectively.

The research aims to significantly contribute to the existing literature and bridge the knowledge gap in innovative ambidexterity and performance success by addressing this largely unanswered question. Previous studies have provided valuable insights into the relationship between ambidexterity and performance outcomes within certain conditions and specific factors. However, exploring the complexity of this relationship necessitates further investigation and a more nuanced understanding. It recognizes that the relationship is multifaceted and involves various factors and contextual dynamics that can influence the outcomes. By delving deeper into this relationship, the research aims to uncover new insights, identify potential moderators and mediators, and provide a more comprehensive understanding of the mechanisms at play. This research can serve as a foundation for future studies and provide practitioners with valuable insights for effectively managing ambidextrous strategies and driving business success in dynamic and competitive environments.

The research question was consistently aligned with the systematic literature analysis, aiding in attaining the core purpose of the research. Hence, the foundational research question that directs the literature analysis is outlined as follows:

How does ambidextrous innovation mediate the relationship between innovation drivers and firm performance and to what extent does disruptive innovation moderate the relationship between ambidextrous innovation and organizational performance in the public firm within the context of the United Arab Emirates (UAE)?

This study employs hypotheses that align with key themes and paradigms to analyze the literature and address the main research question comprehensively. These hypotheses serve as valuable tools for achieving the research objectives and providing meaningful insights as follows:

H1: Innovation drivers significantly and positively influence ambidextrous exploratory innovation

H2: Innovation drivers significantly and positively influence ambidextrous exploitation innovation

H3a: Ambidextrous exploratory innovation significantly and positively influences firm performance.

H3b: Ambidextrous exploitation innovation significantly and positively influences firm performance.

H4a: Ambidextrous exploratory innovation significantly and positively mediates the relationship between innovation drivers and firm performance.

H4b: Ambidextrous exploitative innovation significantly and positively mediates the relationship between innovation drivers and firm performance.

H5a: Disruptive innovation significantly and positively moderates the relationship between ambidextrous exploratory innovation and firm performance.

H5a: Disruptive innovation significantly and positively moderates the relationship between ambidextrous exploitative innovation and firm performance.

H6: Disruptive innovation significantly and positively moderates the relationship between the mediation of ambidextrous exploratory innovation and firm performance.

H7: Disruptive innovation significantly and positively moderates the relationship between the mediation of ambidextrous exploitative innovation and firm performance.

The study's findings make several notable theoretical contributions. They provide empirical support for the theory of disruptive innovation, demonstrating that disruptive innovations can enhance the impact of innovation drivers, particularly in the context of exploitative innovation. The study indirectly relates to ambidextrous innovation theory, emphasizing the importance of balancing exploratory and exploitative innovation. It aligns with the Resource-Based View (RBV) theory, recognizing disruptive innovation as a valuable strategic resource. The study also contributes to our understanding of innovation drivers and their significant impacts on ambidextrously. Additionally, it explores the mediating effects of innovation drivers within the context of innovation management, supporting the broader field of mediating effect theory. The study's implications extend to innovation ecosystems, strategic management theories, and the strategic aspects of innovation, providing valuable insights for scholars and practitioners navigating the complex landscape of innovation and its effects on firm performance. The text also

examines how the UAE's political system, characterized by centralized control and government influence, might have affected the research results and why findings could differ in other political systems. This consideration is essential for interpreting and applying the study's findings across different contexts, taking into account the specific political and socio-economic conditions of the region or country under study.

Fundamentally four core chapters anchor the undertakings of this research project. The first chapter offers a literature review regarding the study, chapter two provides the research methodology, chapter three provides the analysis results, and chapter four discusses the results by providing the implications, the limitations, and future studies.

Chapter one provides a foundational background for the study, exploring dimensions of innovation literature. It introduces the concept of innovation, drawing from various sources and texts to establish its multifaceted nature. A critical analysis of articles published in the last decade ensures the literature's relevance and applicability. The chapter highlights the significance of Schumpeter's theories on innovation and logically paves the way for the subsequent chapters. The chapter delves into innovation drivers and their impact on firm performance. It explores historical perspectives of strategic innovation management, distinguishing between traditional and modern approaches. The chapter categorizes innovation into various types, including incremental, sustainable, radical, and disruptive innovation. It also underscores the distinctions between innovation models in the public and private sectors. Moreover, the section further explores disruptive innovation, tracing its evolution from Clayton Christensen's pioneering definition to contributions by notable co-authors like Christian Bason, Christensen, McDonald, Altman, and Palmer. This review sheds light on disruptive innovation's profound implications for the public

sector, especially its transformative capacity in reshaping public services.

The theoretical framework and research hypotheses. It begins with exploring disruptive innovation, forming the basis for hypotheses rooted in established theories. The chapter discusses disruptive innovation's significance in public sector transformation, emphasizing the barriers involved. Additionally, it delves into the concept of organizational ambidexterity, particularly within the public sector, and its role in fostering ambidextrous innovation strategies. The chapter highlights the importance of ambidexterity in enhancing public management efficiency. A particular focus is placed on the United Arab Emirates (UAE) as a case study, considering its unique political landscape and employing a cross-sectional approach. This underscores the study's relevance within the UAE's context, emphasizing the need for innovative strategies in the region. The chapter concludes by presenting a robust theoretical framework guiding the empirical analysis, contributing to understanding innovation's role in strategic management practices and their impact on firm performance.

Chapter two comprehensively explores the research methodology employed in this study. The research methodology serves as the fundamental blueprint guiding the entire research process, influencing data collection, analysis, and interpretation to address the research objectives. This chapter delves into the specific type of research design, approach, and philosophical underpinnings that underlie the study The United Arab Emirates (UAE) is introduced as the unique and compelling context for examining public administration and governance, with its distinctive political system characterized by an absolute monarchy and a federal structure. The chapter introduces the "Research Onion," a conceptual framework developed by Saunders et al. (2016), which offers a structured and hierarchical approach to research design. The methodology section

defines the research philosophy as having ontological roots in realism, signifying a belief in an objective, tangible reality that exists independently of human perception. This is complemented by an epistemological stance rooted in pragmatism, emphasizing a practical and context-dependent approach to acquiring knowledge.

The chosen research approach is deductive, implying that the study starts with established theories and hypotheses, and then collects data to test these pre-existing concepts. This deductive approach provides a structured and theory-driven foundation for the research. The overall research strategy employed in this study adopts a quantitative cross-sectional case study design. This design involves collecting data at a single point, offering a snapshot of the research variables' status and relationships. The case study method allows for an in-depth exploration of a specific context, in this case, the UAE, to gain insights into the interplay of innovation drivers and firm performance. The methodology section also delves into the specifics of data collection and analysis techniques. Data collection methods may include survey questionnaires, while data analysis involves statistical tools like IBM SPSS for quantitative analysis and IBM AMOS for confirmatory factor analysis. Additionally, the Sobel test may be used to assess mediation effects within the research model. In regression analysis, R-squared (R^2) is a fundamental metric used to assess how well the independent variables explain the variability in the dependent variable. It provides insights into the proportion of variation in the data that is accounted for by the model. Ethical considerations are paramount throughout the research, ensuring that the study adheres to ethical guidelines, including informed consent, confidentiality, and the well-being of study participants. The research methodology, therefore, provides a comprehensive framework for conducting the study, encompassing philosophical underpinnings, research approach, strategy, and data handling techniques.

Chapter three, the study extensively presents its findings while following a well-defined methodology. To begin, it offers a thorough depiction of the descriptive statistics pertaining to the respondents who participated in the research. This provides a foundational understanding of the study's sample and context for subsequent analyses. The chapter then delves into the intricacies of the data analysis process. It first conducts the Kaiser-Meyer-Olkin (KMO) test, an essential measure in assessing the appropriateness of the data for performing factor analysis. This is a critical step in ensuring the reliability and validity of the research. Subsequently, the study utilizes IBM SPSS to execute an exploratory factor analysis (EFA), a statistical technique employed to uncover underlying structures within the dataset. Through EFA, the study explores the interrelationships among variables and identifies latent factors that contribute to the observed responses. In addition to these analyses, the study addresses the potential issue of common method bias (CMB) using IBM SPSS. By investigating CMB, the research takes proactive measures to mitigate any distortions in the data resulting from a single data collection method. This further enhances the credibility and integrity of the study's findings.

Furthermore, the chapter employs confirmatory factor analysis (CFA), leveraging IBM AMOS software for this purpose. CFA allows the study to test the proposed research hypotheses rigorously. It assesses the relationships between observed variables and latent constructs, providing a solid foundation for hypothesis testing. Statistical metrics such as beta coefficients, t-values, and p-values are employed to evaluate the significance and validity of these relationships. The Sobel test is applied to examine the mediating relationships in the study comprehensively. This statistical method helps determine the strength and significance of the mediating effect of certain variables, contributing to a more nuanced understanding of the research outcomes. Finally,

the chapter evaluates the model's overall accuracy and sufficiency. This is achieved through a battery of statistical indicators, including the determination of R-squared (R2) and adjusted R-squared (adjusted R2). These metrics are pivotal in assessing the model's explanatory power and its ability to account for variance in the dependent variables.

Chapter four offers a comprehensive summary of the study's key findings and their implications. It begins by highlighting the invaluable insights gained from analyzing the intricate interplay between innovation drivers, ambidextrous innovation, disruptive innovation, and firm performance. These findings shed light on the multifaceted dynamics organizations face in their pursuit of innovation excellence and competitive advantage. The chapter proceeds to underscore the significance of supporting hypotheses, such as H1 and H2, which confirm the pivotal role of innovation drivers in influencing both exploratory and exploitative innovation. This alignment with the Resource-Based View (RBV) theory emphasizes how organizations can leverage their internal resources and capabilities, such as visionary leadership, abundant resources, and a supportive organizational culture, to gain a competitive edge. Visionary leaders set the innovation agenda, abundant resources facilitate research and development, and a supportive culture fosters an environment conducive to innovation. The study also highlights the importance of ambidextrous innovation, reaffirming the findings related to H3a and H3b. This confirms the significance of balancing exploratory and exploitative innovation, which is vital in today's dynamic and rapidly evolving markets, enabling organizations to seize emerging opportunities and defend against competitive threats.

Furthermore, the chapter discusses the mediating role of ambidextrous innovation, supported by H4a and H4b, emphasizing its role as an organizational dynamic capability.

Additionally, the chapter explores the moderating impact of disruptive innovation in the context of H5a and H5b, amplifying the positive effects of ambidextrous innovation on firm performance. Nevertheless, the nuanced findings concerning H6 and H7 reveal that disruptive innovation has varying effects on different types of innovation, emphasizing the need to tailor innovation strategies to specific innovation types. Finally, the chapter highlights the influence of the UAE's political system on the study's results, indicating how outcomes and implications may vary in different political contexts. Understanding these nuances is essential for effectively contextualizing the study's findings and ensuring their relevance and applicability across diverse political and socio-economic environments. Additionally, the section discussed the limitations and the future study in a comprehensive way.

In conclusion, this study investigates innovation's role in modern public firms' operations, emphasizing its significance in identifying opportunities, turning ideas into development, and fostering entrepreneurship. The findings underscore the importance of strategic management in implementing innovation strategies and transitioning firms toward future success. Ambidextrous innovation, balancing exploratory and exploitative innovation, emerges as a crucial factor in improving firm performance. The study reveals disruptive innovation's positive moderating role in the relationship between ambidextrous innovation and firm performance, highlighting its strategic importance. The research enriches theoretical frameworks in innovation management and strategic theory, including the theory of disruptive innovation and ambidextrous innovation Theory. Practical implications offer guidance for organizations in optimizing innovation strategies and navigating rapidly evolving business environments. Managerial implications stress the deliberate allocation of resources toward disruptive innovation and the need for a balance between exploratory and exploitative innovation. Understanding the mediating effects of different

innovation types on firm performance enhances managerial insights, guiding resource allocation and strategy alignment. The study also emphasizes the role of innovation ecosystems and political considerations, particularly in the public sector. While providing valuable insights, the study acknowledges limitations and suggests future research opportunities, including exploring industry-specific dynamics and investigating cultural and regional influences on innovation. Overall, the findings and implications serve as a guiding compass for organizations seeking to leverage innovation for growth and success, with an awareness of both internal objectives and external political landscapes.

Résumé de la Recherche (Français)

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Titre de la thèse: L'interaction dynamique des moteurs de l'innovation, de l'innovation ambidextre et de la performance des entreprises à travers la modération de l'innovation perturbatrice : Analyse de corrélation avec l'étude de cas des Émirats arabes unis

Mots-clés: Moteurs de l'innovation, innovation ambidextre, innovation perturbatrice, performance des entreprises, nouvelle gestion publique, entreprise publique des Émirats arabes unis.

Cette étude explore les relations complexes entre les moteurs de l'innovation, l'innovation ambidextre, l'innovation perturbatrice et la performance des entreprises. Elle souligne le rôle vital des moteurs de l'innovation, en mettant l'accent sur leur impact sur l'innovation exploratoire et exploitative au sein des organisations, tout en examinant le rôle modérateur de l'innovation perturbatrice sur les résultats de performance. Cette recherche met en lumière le rôle médiateur de l'innovation ambidextre dans la liaison entre les moteurs de l'innovation et la performance des entreprises, soulignant l'effet améliorant de l'innovation perturbatrice. Les organisations sont encouragées à favoriser les moteurs de l'innovation, à promouvoir l'innovation ambidextre et à intégrer stratégiquement des éléments perturbateurs dans leurs approches en matière d'innovation. Ces enseignements offrent des orientations pratiques pour les organisations évoluant dans le paysage dynamique des affaires modernes.

La littérature existante sur les études d'innovation s'est principalement concentrée sur le secteur privé et les entreprises, ce qui présente une limitation en termes de compréhension des dynamiques de l'innovation dans le secteur public. Bien qu'il y ait un intérêt croissant et une reconnaissance de l'importance de l'ambidextrie dans le secteur public, il existe un manque d'investigations empiriques fournissant des preuves concrètes de son efficacité. Le nombre limité d'études empiriques entrave notre compréhension des facteurs, des processus et des résultats associés à l'ambidextrie dans la gestion publique. Sans des preuves empiriques solides, il devient difficile d'identifier les meilleures pratiques, de développer des stratégies efficaces et de prendre des décisions éclairées concernant la mise en œuvre de l'ambidextrie dans les organisations publiques.

Les chercheurs reconnaissent que les conclusions empiriques tirées des entreprises publiques ne peuvent pas être généralisées à celles obtenues auprès d'organisations privées en raison des différences inhérentes dans leurs structures managériales, leurs processus et leurs mécanismes de coordination pour concilier des opérations conflictuelles (Pollitt & Bouckaert, 2017). Les entreprises publiques sont confrontées à des défis notables pour atteindre l'ambidextrie (Kim, 2019). Des études antérieures ont fourni des preuves soutenant la proposition selon laquelle les entreprises publiques sont plus enclines à présenter divers niveaux d'innovation par rapport aux organisations à but lucratif (Meyer, Neck, & Meeks, 2017 ; Schillemans, Klijn, & Koppenjan, 2013). Les ressources principales dont une entreprise dispose, ainsi que les capacités de sa base de ressources, telles que les technologies avancées, les parties prenantes, les réglementations et les stratégies d'innovation, auront un impact significatif sur la quantité d'ambidextrie d'innovation qui existe au sein de la performance de cette entreprise (Fu, Liu & Liao, 2018).

Cette étude introduit les principaux types de moteurs d'innovation pour améliorer l'innovation ambidextre, qui influence également de manière significative la performance des entreprises. Des recherches récentes soutiennent l'idée que les entreprises publiques ont des caractéristiques distinctes et font face à des défis spécifiques pour atteindre l'ambidextrie. Par exemple, Kim (2019) met en avant les mécanismes uniques de gouvernance et de responsabilité auxquels les entreprises publiques sont soumises, ce qui influence leur capacité à équilibrer les activités d'exploration et d'exploitation. Meyer, Neck et Meeks (2017) mettent davantage l'accent sur les niveaux variables d'innovation présentés par les entreprises publiques par rapport aux organisations privées, suggérant la nécessité d'approches adaptées à l'ambidextrie dans le secteur public. Cela souligne l'importance de considérer les moteurs d'innovation spécifiques qui façonnent les pratiques ambidextres dans le secteur public.

Comprendre le rôle des moteurs d'innovation dans le secteur public est crucial en raison des défis et des dynamiques uniques auxquels sont confrontées les organisations publiques. Les réglementations, par exemple, jouent un rôle significatif dans la définition des limites dans lesquelles les organisations publiques opèrent et innovent. Les avancées technologiques peuvent offrir des opportunités d'innovation dans le secteur public, tandis que la coordination interfonctionnelle et la participation des fournisseurs peuvent faciliter le partage des connaissances et la collaboration. La concentration sur le marché est essentielle pour que les organisations publiques alignent leurs efforts d'innovation sur les besoins et les demandes des citoyens qu'elles servent (Bouckaert and Halligan, 2008). Explorer l'impact de ces moteurs d'innovation dans le cadre de l'innovation ambidextre dans le secteur public peut fournir des informations précieuses tant pour les chercheurs que pour les praticiens. Des études empiriques examinant spécifiquement la relation entre les moteurs de l'innovation, l'innovation ambidextre et la performance des

entreprises dans le secteur public sont nécessaires pour combler cette lacune de recherche. De telles études peuvent éclairer sur la manière dont les organisations publiques peuvent exploiter ces moteurs pour améliorer leurs capacités d'innovation, améliorer les résultats de performance et équilibrer efficacement les activités d'exploration et d'exploitation (Klang et al., 2020 ; Fu et al., 2018).

De plus, le concept d'innovation perturbatrice a été reconnu comme un facteur significatif qui module la relation entre l'innovation ambidextre et la performance des entreprises. Des recherches récentes ont souligné la nécessité d'examiner comment l'innovation perturbatrice influence l'efficacité de l'ambidextrie et son impact sur la performance organisationnelle. Les chercheurs ont souligné l'importance d'investiguer l'influence de l'innovation perturbatrice sur l'efficacité de l'ambidextrie et son impact sur la performance organisationnelle (Christensen, Raynor, & McDonald, 2015 ; Tushman & O'Reilly, 2017). Les travaux de Christensen et de ses coauteurs offrent une compréhension complète de l'innovation perturbatrice, mettant en évidence sa nature perturbatrice et le potentiel de création de nouvelles opportunités et de défis pour les organisations. Leur recherche souligne la nécessité de reconnaître et de s'adapter aux forces perturbatrices pour exploiter l'ambidextrie en vue d'améliorer les résultats de performance de manière efficace. L'innovation perturbatrice est souvent accélérée par divers facteurs, notamment les changements dans le paysage économique, environnemental et social, ainsi que l'occurrence de catastrophes naturelles et de maladies. Ces facteurs créent de nouvelles opportunités, des défis et des contraintes qui incitent les organisations à rechercher des solutions innovantes.

Les maladies et les pandémies, comme la récente crise du COVID-19, ont des implications profondes pour les sociétés, les économies et la santé publique. Face à ces défis, il y a un besoin croissant d'approches innovantes pour aborder la santé, la gestion publique et le bien-être global

de la société. Les chercheurs ont souligné que les épidémies de maladies servent de catalyseurs pour que les organisations et les gouvernements s'adaptent rapidement, conduisant à l'émergence de solutions perturbatrices visant à contrôler la transmission du virus, assurer la prestation de services essentiels et faciliter la collaboration à distance (Bragazzi et al., 2021 ; Hollander & Carr, 2020). Notamment, les innovations perturbatrices dans la télésanté, l'infrastructure numérique et les solutions de travail à distance ont gagné une importance significative en réponse à la pandémie de COVID-19, permettant une prestation efficace de soins de santé à distance, une connectivité numérique efficace et des arrangements de travail flexibles. La pandémie de COVID-19 a souligné le rôle critique de l'innovation dans la résolution des crises de santé publique et dans la promotion de la résilience dans divers secteurs. À mesure que les chercheurs continuent d'explorer et de développer des solutions perturbatrices, l'importance des interventions de santé basées sur la technologie, des outils de collaboration à distance et de l'infrastructure numérique devient de plus en plus évidente. Ces approches innovantes sont essentielles pour atténuer l'impact de la pandémie et se préparer aux défis futurs.

En tenant compte des enseignements de ces études dans le contexte de notre recherche, nous visons à explorer davantage l'influence de l'innovation perturbatrice sur l'ambidextrie et son impact ultérieur sur la performance organisationnelle publique. Cela contribuera à une compréhension plus approfondie des complexités et des dynamiques impliquées dans la gestion efficace des pratiques ambidextres dans le contexte de notre étude. En tenant compte de l'effet modérateur de l'innovation perturbatrice, cette démarche de recherche vise à contribuer à une compréhension plus approfondie des dynamiques complexes impliquées dans les pratiques ambidextres au sein du secteur public. Cette étude adopte une approche intégrative en incorporant les dernières recherches sur les défis et les caractéristiques uniques des entreprises publiques, le

rôle des moteurs de l'innovation, et l'innovation perturbatrice dans l'approche de l'ambidextrie. En examinant ces facteurs interdépendants, la recherche vise à faire progresser notre compréhension de la relation entre l'innovation ambidextre, les moteurs de l'innovation et la performance des entreprises dans le contexte des Émirats arabes unis (EAU).

L'utilisation des Émirats arabes unis (EAU) comme étude de cas peut apporter une contribution scientifique notable, en fonction des objectifs et du contexte spécifique de la recherche. Les EAU offrent un cadre unique et distinctif pour la recherche, caractérisé par ses spécificités politiques, socio-culturelles, économiques et culturelles, le distinguant des autres pays. La recherche menée aux EAU fournit une source riche d'informations et de données difficiles d'accès ailleurs, en en faisant un sujet précieux pour l'enquête scientifique. De plus, malgré son caractère spécifique, les conclusions et les implications de la recherche aux EAU peuvent avoir une généralisabilité plus large, testant et éclairant des théories et des concepts plus vastes dans différents contextes. De plus, la recherche aux EAU a le potentiel d'avoir un impact direct sur les politiques et la prise de décision, tant à l'intérieur du pays qu'à l'échelle internationale, notamment dans des domaines tels que la politique énergétique, l'urbanisme, les soins de santé et l'éducation. De plus, la société multiculturelle et diversifiée des EAU constitue un cadre idéal pour la recherche interculturelle, contribuant à une compréhension plus profonde du multiculturalisme, de l'échange culturel et de l'intégration sociale, avec une applicabilité potentielle au-delà de ses frontières.

Cette thèse doctorale est basée sur la question de recherche qui constitue la base de conceptualisation et d'examen des principaux sujets de la thèse. En essence, elle implique :

• Écart contextuel : Enquêter sur la façon dont le contexte économique, politique et culturel unique des Émirats arabes unis (EAU) façonne l'interaction entre les moteurs de l'innovation, l'innovation

ambidextre et la performance des entreprises. Comprendre ces nuances contextuelles est crucial pour adapter les stratégies d'innovation à cet environnement spécifique.

• Écart sectoriel : Examiner les résultats liés aux liens entre les moteurs de l'innovation, l'innovation ambidextre et la performance des entreprises dans les organisations du secteur public. Cette perspective sectorielle peut révéler des défis et des opportunités spécifiques au secteur pour l'innovation.

• Écart du mécanisme de médiation : Enquêter sur les mécanismes spécifiques par lesquels l'innovation ambidextre intervient dans les relations entre les moteurs de l'innovation et la performance des entreprises. Comprendre les processus sous-jacents est essentiel pour développer des stratégies pratiques pour les entreprises aux EAU.

• Écart du mécanisme de modération : Explorer les mécanismes par lesquels l'innovation disruptive module les relations entre l'innovation ambidextre et la performance des entreprises. Comprendre comment l'innovation disruptive améliore ou contraint les effets de l'innovation ambidextre dans le contexte des EAU peut fournir des insights actionnables pour les organisations cherchant à exploiter efficacement des éléments perturbateurs.

La recherche vise à contribuer de manière significative à la littérature existante et à combler le fossé de connaissance dans l'ambidextrie innovante et le succès de la performance en abordant cette question largement sans réponse. Les études antérieures ont fourni des aperçus précieux sur la relation entre l'ambidextrie et les résultats de performance dans certaines conditions et avec des facteurs spécifiques. Cependant, explorer la complexité de cette relation nécessite une enquête approfondie et une compréhension plus nuancée. Elle reconnaît que la relation est multifacette et implique divers facteurs et dynamiques contextuelles qui peuvent influencer les résultats. En

approfondissant cette relation, la recherche vise à découvrir de nouveaux insights, identifier des modérateurs et médiateurs potentiels, et fournir une compréhension plus complète des mécanismes en jeu. Cette recherche peut servir de base pour des études futures et fournir aux praticiens des insights précieux pour gérer efficacement les stratégies ambidextres et stimuler le succès commercial dans des environnements dynamiques et compétitifs.

La question de recherche était systématiquement alignée sur l'analyse systématique de la littérature, aidant à atteindre le but central de la recherche. Ainsi, la question de recherche fondamentale qui guide l'analyse de la littérature est formulée comme suit :

Comment l'innovation ambidextre intervient-elle dans la relation entre les moteurs de l'innovation et la performance des entreprises, et dans quelle mesure l'innovation disruptive module-t-elle la relation entre l'innovation ambidextre et la performance organisationnelle dans les entreprises publiques dans le contexte des Émirats arabes unis (EAU) ?

Cette étude utilise des hypothèses qui s'alignent sur des thèmes clés et des paradigmes pour analyser la littérature et aborder de manière exhaustive la question de recherche principale. Ces hypothèses servent d'outils précieux pour atteindre les objectifs de la recherche et fournir des insights significatifs comme suit:

H1: Les moteurs de l'innovation influent de manière significative et positive sur l'innovation exploratoire ambidextre

H2: Les moteurs de l'innovation influent de manière significative et positive sur l'innovation exploitative ambidextre

H3a: L'innovation exploratoire ambidextre influe de manière significative et positive sur la performance des entreprises.

H3b: L'innovation exploitative ambidextre influe de manière significative et positive sur la performance des entreprises.

H4a: L'innovation exploratoire ambidextre intervient de manière significative et positive dans la relation entre les moteurs de l'innovation et la performance des entreprises.

H4b: L'innovation exploitative ambidextre intervient de manière significative et positive dans la relation entre les moteurs de l'innovation et la performance des entreprises.

H5a: L'innovation disruptive module de manière significative et positive la relation entre l'innovation exploratoire ambidextre et la performance des entreprises.

H5b: L'innovation disruptive module de manière significative et positive la relation entre l'innovation exploitative ambidextre et la performance des entreprises.

H6: L'innovation disruptive module de manière significative et positive la relation entre la médiation de l'innovation exploratoire ambidextre et la performance des entreprises.

H7: L'innovation disruptive module de manière significative et positive la relation entre la médiation de l'innovation exploitative ambidextre et la performance des entreprises.

Les résultats de l'étude apportent plusieurs contributions théoriques notables. Ils fournissent un soutien empirique à la théorie de l'innovation disruptive, démontrant que les innovations disruptives peuvent renforcer l'impact des moteurs de l'innovation, en particulier dans le contexte de l'innovation exploitative. L'étude se rapporte indirectement à la théorie de l'innovation ambidextre, soulignant l'importance de l'équilibre entre l'innovation exploratoire et exploitative. Elle s'aligne avec la théorie de la vue basée sur les ressources (VBR), reconnaissant l'innovation disruptive comme une ressource stratégique précieuse. L'étude contribue également à notre compréhension des moteurs de l'innovation et de leurs impacts significatifs sur l'ambidextrie. De plus, elle explore les effets de médiation des moteurs de l'innovation dans le contexte de la gestion de l'innovation, soutenant le champ plus large de la théorie des effets de médiation. Les

implications de l'étude s'étendent aux écosystèmes d'innovation, aux théories de la gestion stratégique et aux aspects stratégiques de l'innovation, fournissant des insights précieux aux universitaires et aux praticiens naviguant dans le paysage complexe de l'innovation et de ses effets sur la performance des entreprises. Le texte examine également comment le système politique des EAU, caractérisé par un contrôle centralisé et une influence gouvernementale, pourrait avoir influencé les résultats de la recherche et pourquoi les résultats pourraient différer dans d'autres systèmes politiques. Cette considération est essentielle pour interpréter et appliquer les résultats de l'étude dans différents contextes, en tenant compte des conditions politiques et socio-économiques spécifiques de la région ou du pays étudié.

Fondamentalement, quatre chapitres centraux ancrent les travaux de ce projet de recherche. Le premier chapitre offre une revue de la littérature sur l'étude, le deuxième chapitre fournit la méthodologie de recherche, le troisième chapitre présente les résultats de l'analyse, et le quatrième chapitre discute des résultats en fournissant les implications, les limitations et les orientations pour de futures études.

Le chapitre un fournit un contexte fondamental pour l'étude, explorant les dimensions de la littérature sur l'innovation. Il introduit le concept d'innovation, s'appuyant sur diverses sources et textes pour établir sa nature multifacette. Une analyse critique des articles publiés au cours de la dernière décennie assure la pertinence et l'applicabilité de la littérature. Le chapitre met en lumière l'importance des théories de Schumpeter sur l'innovation et ouvre logiquement la voie aux chapitres suivants. Le chapitre examine les moteurs de l'innovation et leur impact sur la performance des entreprises. Il explore les perspectives historiques de la gestion stratégique de l'innovation, faisant la distinction entre les approches traditionnelles et modernes. Le chapitre catégorise l'innovation en différents types, notamment l'innovation incrémentale, durable, radicale

et disruptive. Il souligne également les distinctions entre les modèles d'innovation dans les secteurs public et privé. De plus, la section explore davantage l'innovation disruptive, retracant son évolution de la définition pionnière de Clayton Christensen aux contributions de co-auteurs notables tels que Christian Bason, Christensen, McDonald, Altman et Palmer. Cette revue éclaire les implications profondes de l'innovation disruptive pour le secteur public, en particulier sa capacité transformative à remodeler les services publics.

Le cadre théorique et les hypothèses de recherche commencent par explorer l'innovation disruptive, formant la base des hypothèses enracinées dans des théories établies. Le chapitre discute de l'importance de l'innovation disruptive dans la transformation du secteur public, en mettant l'accent sur les obstacles impliqués. De plus, il plonge dans le concept d'ambidextrie organisationnelle, en particulier dans le secteur public, et son rôle dans la promotion des stratégies d'innovation ambidextre. Le chapitre met en avant l'importance de l'ambidextrie dans l'amélioration de l'efficacité de la gestion publique. Un accent particulier est mis sur les Émirats arabes unis (EAU) en tant qu'étude de cas, compte tenu de son paysage politique unique et de son approche transversale. Cela souligne la pertinence de l'étude dans le contexte des EAU, en soulignant la nécessité de stratégies innovantes dans la région. Le chapitre se conclut en présentant un solide cadre théorique guidant l'analyse empirique, contribuant à la compréhension du rôle de l'innovation dans les pratiques de gestion stratégique et de son impact sur la performance des entreprises.

Le chapitre deux explore de manière exhaustive la méthodologie de recherche utilisée dans cette étude. La méthodologie de recherche sert de plan fondamental guidant l'ensemble du processus de recherche, influençant la collecte, l'analyse et l'interprétation des données pour répondre aux objectifs de recherche. Ce chapitre plonge dans le type spécifique de conception de

recherche, d'approche et de fondements philosophiques qui sous-tendent l'étude. Les Émirats arabes unis (EAU) sont présentés comme le contexte unique et captivant pour examiner l'administration publique et la gouvernance, avec son système politique distinct caractérisé par une monarchie absolue et une structure fédérale. Le chapitre introduit l'"Oignon de recherche", un cadre conceptuel développé par Saunders et al. (2016), qui offre une approche structurée et hiérarchique de la conception de la recherche. La section sur la méthodologie définit la philosophie de recherche comme ayant des racines ontologiques dans le réalisme, signifiant une croyance en une réalité objective et tangible qui existe indépendamment de la perception humaine. Cela est complété par une position épistémologique ancrée dans le pragmatisme, mettant l'accent sur une approche pratique et dépendante du contexte pour acquérir des connaissances.

L'approche de recherche choisie est déductive, ce qui implique que l'étude commence par des théories établies et des hypothèses, puis recueille des données pour tester ces concepts préexistants. Cette approche déductive offre une base structurée et orientée par la théorie pour la recherche. La stratégie de recherche globale utilisée dans cette étude adopte une conception quantitative de l'étude de cas transversale. Cette conception implique la collecte de données à un seul point, offrant un instantané de l'état et des relations des variables de recherche. La méthode de l'étude de cas permet une exploration approfondie d'un contexte spécifique, dans ce cas, les Émirats arabes unis, afin de comprendre les interactions entre les moteurs de l'innovation et la performance des entreprises. La section méthodologique aborde également les détails des techniques de collecte et d'analyse des données. Les méthodes de collecte de données peuvent inclure des questionnaires d'enquête, tandis que l'analyse des données implique des outils statistiques tels que IBM SPSS pour l'analyse quantitative et IBM AMOS pour l'analyse factorielle confirmatoire. De plus, le test de Sobel peut être utilisé pour évaluer les effets de médiation dans

le modèle de recherche. Dans l'analyse de régression, le R carré (R^2) est une mesure fondamentale utilisée pour évaluer dans quelle mesure les variables indépendantes expliquent la variabilité de la variable dépendante. Il fournit des indications sur la proportion de variation dans les données expliquée par le modèle. Les considérations éthiques sont primordiales tout au long de la recherche, veillant à ce que l'étude respecte les directives éthiques, y compris le consentement éclairé, la confidentialité et le bien-être des participants à l'étude. Ainsi, la méthodologie de recherche fournit un cadre complet pour la réalisation de l'étude, englobant les fondements philosophiques, l'approche de recherche, la stratégie et les techniques de manipulation des données.

Chapitre trois, l'étude présente de manière approfondie ses résultats tout en suivant une méthodologie bien définie. Pour commencer, elle offre une représentation détaillée des statistiques descriptives concernant les répondants qui ont participé à la recherche. Cela offre une compréhension fondamentale de l'échantillon de l'étude et du contexte pour les analyses ultérieures. Le chapitre se plonge ensuite dans les subtilités du processus d'analyse des données. Il réalise d'abord le test de Kaiser-Meyer-Olkin (KMO), une mesure essentielle pour évaluer l'adéquation des données à l'analyse factorielle. Il s'agit d'une étape cruciale pour garantir la fiabilité et la validité de la recherche. Par la suite, l'étude utilise IBM SPSS pour effectuer une analyse factorielle exploratoire (EFA), une technique statistique utilisée pour découvrir les structures sous-jacentes dans l'ensemble de données. À travers l'EFA, l'étude explore les interrelations entre les variables et identifie les facteurs latents qui contribuent aux réponses observées. En plus de ces analyses, l'étude aborde la question potentielle du biais méthodologique commun (BMC) en utilisant IBM SPSS. En enquêtant sur le BMC, la recherche prend des mesures

proactives pour atténuer toute distorsion dans les données résultant d'une seule méthode de collecte de données. Cela renforce davantage la crédibilité et l'intégrité des résultats de l'étude.

De plus, le chapitre utilise l'analyse factorielle confirmatoire (AFC), en exploitant le logiciel IBM AMOS à cette fin. L'AFC permet à l'étude de tester rigoureusement les hypothèses de recherche proposées. Elle évalue les relations entre les variables observées et les constructions latentes, fournissant une base solide pour le test d'hypothèses. Des mesures statistiques telles que les coefficients bêta, les valeurs t et les valeurs p sont utilisées pour évaluer la signification et la validité de ces relations. Le test de Sobel est appliqué pour examiner de manière exhaustive les relations de médiation dans l'étude. Cette méthode statistique aide à déterminer la force et la signification de l'effet de médiation de certaines variables, contribuant à une compréhension plus nuancée des résultats de la recherche. Enfin, le chapitre évalue la précision globale du modèle et sa suffisance. Cela est réalisé à travers une batterie d'indicateurs statistiques, y compris la détermination du R carré (R2) et du R carré ajusté (R2 ajusté). Ces métriques sont cruciales pour évaluer le pouvoir explicatif du modèle et sa capacité à rendre compte de la variance dans les variables dépendantes.

Le chapitre quatre offre un résumé complet des principales conclusions de l'étude et de leurs implications. Il commence par mettre en avant les informations inestimables obtenues de l'analyse de l'interaction complexe entre les moteurs de l'innovation, l'innovation ambidextre, l'innovation perturbatrice et la performance des entreprises. Ces conclusions éclairent les dynamiques multifacettes auxquelles les organisations font face dans leur quête d'excellence en matière d'innovation et d'avantage concurrentiel. Le chapitre souligne ensuite l'importance des hypothèses de soutien, telles que H1 et H2, qui confirment le rôle pivot des moteurs de l'innovation dans l'influence à la fois de l'innovation exploratoire et de l'innovation exploitative. Cette

concordance avec la théorie de la vue basée sur les ressources (RBV) souligne comment les organisations peuvent tirer parti de leurs ressources et capacités internes, telles que le leadership visionnaire, les ressources abondantes et une culture organisationnelle favorable, pour obtenir un avantage concurrentiel. Les leaders visionnaires établissent l'agenda de l'innovation, les ressources abondantes facilitent la recherche et le développement, et une culture favorable favorise un environnement propice à l'innovation. L'étude met également en lumière l'importance de l'innovation ambidextre, réaffirmant les conclusions relatives à H3a et H3b. Cela confirme l'importance de l'équilibre entre l'innovation exploratoire et l'innovation exploitative, essentiel dans les marchés d'aujourd'hui dynamiques et en évolution rapide, permettant aux organisations de saisir les opportunités émergentes et de se défendre contre les menaces concurrentielles.

De plus, le chapitre aborde le rôle de médiation de l'innovation ambidextre, soutenu par H4a et H4b, soulignant son rôle en tant que capacité dynamique organisationnelle. De plus, le chapitre explore l'impact modérateur de l'innovation perturbatrice dans le contexte de H5a et H5b, amplifiant les effets positifs de l'innovation ambidextre sur la performance des entreprises. Néanmoins, les conclusions nuancées concernant H6 et H7 révèlent que l'innovation perturbatrice a des effets variables sur différents types d'innovation, soulignant la nécessité d'adapter les stratégies d'innovation à des types spécifiques d'innovation. Enfin, le chapitre met en avant l'influence du système politique des Émirats arabes unis sur les résultats de l'étude, indiquant comment les résultats et les implications peuvent varier dans différents contextes politiques. Comprendre ces nuances est essentiel pour contextualiser efficacement les conclusions de l'étude et assurer leur pertinence et leur applicabilité dans des environnements politiques et socio-économiques divers. De plus, la section aborde de manière exhaustive les limitations et les futures possibilités d'étude.

En conclusion, cette étude explore le rôle de l'innovation dans les opérations des entreprises publiques modernes, soulignant son importance dans l'identification des opportunités, la concrétisation des idées en développement et la promotion de l'entrepreneuriat. Les conclusions soulignent l'importance de la gestion stratégique dans la mise en œuvre de stratégies d'innovation et dans la transition des entreprises vers le succès futur. L'innovation ambidextre, équilibrant l'innovation exploratoire et l'innovation exploitative, émerge comme un facteur crucial pour améliorer la performance des entreprises. L'étude révèle le rôle modérateur positif de l'innovation perturbatrice dans la relation entre l'innovation ambidextre et la performance des entreprises, soulignant son importance stratégique. La recherche enrichit les cadres théoriques en gestion de l'innovation et en théorie stratégique, y compris la théorie de l'innovation perturbatrice et la théorie de l'innovation ambidextre. Les implications pratiques offrent des conseils aux organisations pour optimiser leurs stratégies d'innovation et naviguer dans des environnements commerciaux en évolution rapide. Les implications managériales mettent l'accent sur l'allocation délibérée de ressources vers l'innovation perturbatrice et la nécessité d'un équilibre entre l'innovation exploratoire et l'innovation exploitative. Comprendre les effets de médiation de différents types d'innovation sur la performance des entreprises renforce les connaissances managériales, guidant l'allocation des ressources et l'alignement des stratégies. L'étude met également l'accent sur le rôle des écosystèmes d'innovation et des considérations politiques, en particulier dans le secteur public. Tout en fournissant des informations précieuses, l'étude reconnaît les limitations et suggère des opportunités de recherche futures, notamment l'exploration de la dynamique spécifique à l'industrie et l'examen des influences culturelles et régionales sur l'innovation. Dans l'ensemble, les conclusions et les implications servent de boussole pour les organisations cherchant à tirer parti

de l'innovation pour la croissance et le succès, avec une conscience à la fois des objectifs internes et des paysages politiques externes.