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MIDDLE EAST UNIVERSITY
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The Moderating Role of Perceived Environmental Uncertainty in the Impact of Corporate Governance on Strategy Implementation: An Empirical Study in Information Technology Sector in Jordan

الدور المعدل لعدم اليقين البيئي المدرك في تأثير حوكمة الشركات على تنفيذ الاستراتيجية: دراسة ميدانية في قطاع تكنولوجيا المعلومات في الاردن

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Thesis Submitted in Partial Fulfillments of the Requirements for Master Degree in Business Administration

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Authorization

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This Thesis titled "**The Moderating Role of Perceived Environmental Uncertainty in the Impact of Corporate Governance on Strategy Implementation: An Empirical Study in Technology Sector in Jordan**" was successfully defended and approved on 24th January, 2024.

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Dedication

To my parents, who have supported me, I am deeply grateful for your unwavering belief in my abilities and for the contributions you made to ensure I had the opportunities to pursue higher education. Thank you so much for everything! Words can hardly describe my thanks and appreciation to you. You have taught me to be unique, determined, to believe in myself, and to always persevere.

To my sisters, you have been the constant source of inspiration and motivation in my life. This thesis is dedicated to the three of you, as a testament to the importance of education and the boundless love and support that family provides. Through this academic journey, I hope to show you that with determination and hard work, any goal can be achieved. May this dedication serve as a reminder of the infinite possibilities that await you, and may you always find the strength and courage to pursue your dreams. Thank you for being my greatest cheerleaders and my most cherished companions.

To my professors and mentors, your guidance, wisdom, and commitment to excellence have shaped me into the scholar I am today. Your dedication to teaching and research has inspired me to strive for greatness in my own work.

Lastly, I dedicate this thesis to future generations of scholars and learners. May it serve as a small contribution to the ongoing pursuit of knowledge and the betterment of our world.

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The Moderating Role of Perceived Environmental Uncertainty in the Impact of Corporate Governance on Strategy Implementation: An Empirical Study in Information Technology Sector in Jordan

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Abstract

The study investigates the moderating role of Perceived Environmental Uncertainty in the impact of Corporate Governance on Strategy Implementation.

Further, the study employed an analytical descriptive approach, utilizing an electronic questionnaire as the primary data collection instrument. The questionnaire underwent thorough evaluations to ensure its validity and reliability. The study involved a randomly selected group of 254 individuals, including both managers and non-managers, from Information and Communication Technology (ICT) firms based in Amman, Jordan. The study employed a blend of descriptive and inferential statistical techniques, including the Statistical Package for the Social Sciences (SPSS) for Windows version 26, to investigate research questions and test hypotheses.

The study concluded numerous findings most importantly a high adherence to corporate governance principles, a high level of strategy implementation, and a high level of perceived environmental uncertainty, which reflects a shared understanding of challenges and risks. Additionally, the high level of agreement suggests that respondents share a common perception of the environmental uncertainty surrounding the firms. Further, the study founded that perceived environmental uncertainty collectively moderates the impact of corporate governance on strategy implementation in Jordanian information technology firms.

Based on these findings, recommendations included regularly assessing and analyzing the external environment to comprehend and adapt to perceived uncertainties. Proactively adjusting corporate governance practices and strategies is also suggested to address potential risk assessment and challenges arising from dynamisms in the environment.

Keywords: Perceived Environmental Uncertainty, Corporate Governance, Strategy Implementation, Technology Sector, Jordan.

الدور المعدل لعدم اليقين البيئي المدرك في تأثير حوكمة الشركات على تنفيذ الاستراتيجية: دراسة ميدانية في قطاع تكنولوجيا المعلومات في الأردن

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الملخّص

سعت هذه الدراسة إلى التحقيق في الدور المعدل لعدم اليقين البيئي المدرك في أثر حوكمة الشركات على تنفيذ الاستراتيجية. اعتمدت الدراسة نهجًا تحليليًا وصفيًا، حيث استخدمت استبيانًا إلكترونيًا كأداة رئيسية لجمع البيانات. خضع الاستبيان لتقييمات دقيقة لضمان صحته وموثوقيته. شملت الدراسة مجموعة عشوائية مختارة من 254 فردًا، بما في ذلك الإداريين وغير الإداريين، من شركات تكنولوجيا المعلومات والاتصالات (ICT) في عمان، الأردن. استخدمت الدراسة مزيجًا من التقنيات الإحصائية الوصفية والاستدلالية، بما في ذلك برنامج الحزمة الإحصائية للعلوم الاجتماعية (SPSS) لإصدار ويندوز 26، للتحقيق في الأسئلة البحثية واختبار الفرضيات.

خلصت الدراسة إلى العديد من النتائج، ومن أهمها الالتزام العالي بمبادئ حوكمة الشركات، ومستوى عالي من تنفيذ الاستراتيجية، ومستوى مرتفع من عدم اليقين البيئي، مما يعكس الفهم المشترك للتحديات والمخاطر. بالإضافة إلى ذلك، يشير المستوى العالي من الاتفاق إلى أن المشاركين لديهم تصور مشترك لعدم اليقين البيئي المحيط بالشركات. وعلاوة على ذلك، وجدت الدراسة أن عدم اليقين البيئي المدرك يحكم تأثير حوكمة الشركات على تنفيذ الاستراتيجية في شركات تكنولوجيا المعلومات الأردنية.

استنادًا إلى هذه النتائج، تشمل التوصيات الى الاستمرار في تقييم وتحليل البيئة الخارجية بانتظام لفهم والتكيف مع عدم اليقين البيئي. كما يُقترح تعديل مبادئ حوكمة الشركات والاستراتيجيات بشكل نشط لمواجهة التقييم والتحديات المحتملة الناتجة عن ديناميكيات البيئة.

الكلمات المفتاحية: عدم اليقين البيئي المدرك، حوكمة الشركات، تنفيذ الاستراتيجية، قطاع تكنولوجيا المعلومات، الأردن.

CHAPTER ONE

Study Background and Significance

CHAPTER ONE

Study Background and Significance

1.1 Introduction

In the face of whirling winds of uncertainty, the union of efficient corporate governance and robust strategy implementation becomes critical for success, whereas perceived environmental uncertainty sheds insight on the transformative power of corporate governance and strategy implementation. Navigating the complexity of the business world might feel like sailing across uncharted waters in this era of rapid technological breakthroughs.

The implementation phase stands out as an indispensable stage of strategic management, where formulated strategies transition into tangible actions and outcomes (Hitt et al., 2020). This process is particularly critical for Jordanian information technology firms, given the dynamic and uncertain nature of the industry. Effective strategy implementation necessitates the thorough coordination of diverse resources (Tawse & Tabesh, 2021). To lessen discrepancies between the intended and actual state of the organization while keeping management and coordination in place, it is necessary to have managerial skills, organizational culture, clear communication, involvement, and reinforcement in order to implement strategies effectively (López-Torres et al., 2023). The goal is to ensure that strategies are implemented efficiently and effectively, which includes aligning organizational structure, systems, and processes with strategic objectives. However, the challenges of strategy implementation are exacerbated in the face of environmental uncertainty (Ivančić et al., 2017.). The information technology sector operates in a scenery characterized by constant evolution, with rapid technological advances, shifting customer preferences, and intensifying competition (Taherdoost, 2022) . Such uncertainties can impede strategy implementation and hinder the achievement of desired outcomes. To surmount these challenges, Jordanian technology firms must adopt proactive approaches to strategy implementation. This involves continuous monitoring and assessment of the external environment, identification of emerging trends and opportunities, and the flexibility to adjust strategies and implementation plans accordingly (Gogić, 2022).

Corporate governance practices emerge as a key facilitator of successful strategy implementation. Well-governed organizations establish clear lines of governance principles in decision-making processes, and implement robust monitoring and control mechanisms (Birca & Lazari, 2021; Huising & Silbey, 2021). Good corporate governance creates an environment conducive to effective strategy implementation by aligning the actions of the board, management, and employees with strategic objectives (Ali et al., 2022). Amidst the perpetual state of flux in the technology sector, the synergy between efficient corporate governance and robust strategy implementation becomes paramount. This is especially true in the context of perceived environmental uncertainty, where the transformative power of corporate governance and strategy implementation becomes apparent. Navigating the complexities of the tech realm may feel akin to sailing uncharted waters, especially in an era marked by rapid technological breakthroughs.

Recent years have seen environmental uncertainty emerge as a major concern for businesses (Chen et al., 2022). Global shifts in technological advancements and heightened competition necessitate strategic adjustments and implementation for firms to remain sustainable and competitive (Haseeb et al., 2019). Perceived environmental uncertainty, defined as the organization's difficulty in accurately assessing the outcomes of its activities, poses a significant challenge (García-Pérez & Yanes-Estévez, 2022). It is often synonymous with risk, hindering strategic decision-making due to the gap between available information and that required for success (Abou-Moghli, 2016; Golman et al., 2021). The dilemma intensifies with the increasing dynamism and complexity of the environment, encompassing changes in technology, consumer preferences, market conditions, and competition levels (Nordin & Ravald, 2023). Barriers to strategy implementation stem from both internal and external environments, and environmental uncertainty compounds these challenges (Pereira et al., 2019). Ambiguity impedes strategic decision-making and resource allocation, affecting an organization's ability to implement strategies successfully (Arend, 2020, 2022).

Studies by Sudaryati and Reyry (2020), and Wang et al. (2020) underscore the significance of good corporate governance in assisting businesses to navigate environmental uncertainty and make well-informed strategic decisions. Corporate governance, encompassing procedures and practices for proper management and operation, defines relationships between the board, top management, and stakeholders (Wheelen & Hunger, 2023). Corporate governance is viewed as a set of structures, responsibilities, practices, and traditions ensuring the achievement of organizational goals (Nasereddin & Nasereddin, 2019).

The study introduces various theoretical perspectives, including agency theory and stewardship theory, shedding light on how corporate governance guides organizational responses to perceived environmental uncertainty and informs decision-making. Despite these insights, the study recognizes a gap in understanding how the degree of environmental uncertainty moderates the connection between corporate governance and strategy implementation. Therefore, the study examines the moderating role of perceived environmental uncertainties, including the (level of competition, rate of technological change, and market volatility) in the impact of corporate governance (transparency, accountability, participative governance, and board composition) on strategy implementation (programs and budget) in information technology firms. This exploration is poised to provide valuable insights that can aid businesses in formulating and implementing more effective strategies. The findings may contribute to enhancing overall performance, ultimately influencing the expansion and growth of Jordan's information technology sector.

1.2 Study Problem

The problem of interest to this study relied on two different sources to define the depth of the problem and provide an objective diagnosis of the knowledge and practical gap it presented.

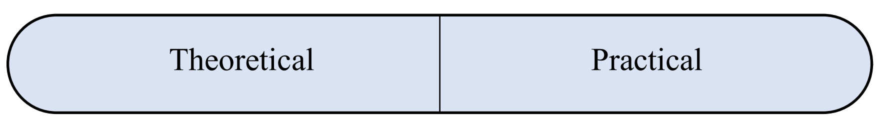

Figure (1): Study Problem Sources

For Jordan's information technology firms to thrive, the link between corporate governance and strategy implementation is essential. The role that perceived environmental uncertainty plays in this connection, however, is not widely acknowledged.

Extant management literature indicates that the relationship between corporate governance and perceived environmental uncertainty is complex and susceptible to a variety of influences. Triyonowati & Elfita (2022) determined that good corporate governance can play the role of a guardian while also encouraging top management to increase leverage in the heart of volatility in the business environment. Meanwhile, Sudaryati and Reyry (2020) found that the impact of environmental uncertainty on firm performance is mitigated through corporate governance. Similarly, several studies (Ali et al., 2022; Igamba & Karanja, 2018; Kobuthi et al., 2018) found that corporate governance was significantly correlated with the success of strategy implementation. The relationship between corporate governance and corporate strategy is strong, implying the effectiveness of such strategies implemented by a firm. Likewise, strategy implementation is found to be significantly impacted by environmental uncertainties, according to Muthomi (2018), who also revealed that the major environmental uncertainties encountered are in technological change, followed by customer preference.

Nevertheless, there is still a dearth of studies specifically on the impact of perceived environmental uncertainty in relation to corporate governance and strategy implementation. Additionally, according to the previous studies' recommendations (Ivančić et al., 2017; Mwanje & Deya, 2018), commend conducting a study to decipher other aspects, such as the external environment and its uncertainties.

From a practical perspective the researcher conducted exploratory interviews with several information technology firms in Amman, Jordan, building upon insights from present literature. The study identified corporate governance, strategy implementation, and perceived environmental uncertainty as critical factors influencing decision-making processes among respondents. Effective corporate governance practices, such as transparent communication and accountability, were highlighted as significant contributors to sound decision-making.

The need of integrating strategy implementation with firm goals and objectives was emphasized during the interviews. Respondents emphasized the crucial role of perceived environmental uncertainty, encompassing market volatility and technological advancements, in shaping decision-making within IT firms. The findings underscored the complex and multifaceted nature of decision-making processes, emphasizing the need to consider various internal and external influences for optimal decision outcomes.

The firms stressed the formulation of comprehensive strategic plans cascaded down to specific divisions while launching the dynamic process of strategy implementation. They stressed the value of regular performance measurement and control mechanisms to track progress. Acknowledging the inherent challenges posed by environmental unpredictability in the technology industry, including market trends, laws, and technological developments, the firms demonstrated proactive strategies to stay ahead.

Some technology firms in Jordan actively managed environmental uncertainties by closely monitoring trends, fostering open communication, and investing in research and development. However, the interviews revealed that certain firms lacked clear governance, procedures, or programs to effectively address environmental uncertainties. This disparity highlights the need for comprehensive and adaptive approaches in managing the diverse challenges presented by the IT landscape, with a particular emphasis on governance structures and strategic planning.

Building on the above, this study aims to address and bridge the existing practical and theoretical void, by investigating the moderating role of perceived environmental uncertainty in the impact of corporate governance on strategy implementation in information technology firms in Jordan.

1.3 Study Objectives

The objective of this study is to investigate the impact of corporate governance on strategy implementation, with perceived environmental uncertainty as a moderator, in the context of technology firms in Jordan. Specifically, the study aims to achieve the following objectives:

1. Presenting a theoretical framework of corporate governance, strategy implementation, and perceived environmental uncertainty based on previous related literature.
2. Determining the level of (corporate governance, strategy implementation, and perceived environmental uncertainty) in information technology firms in Jordan.
3. Investigating the impact of corporate governance on strategy implementation in information technology firms in Jordan.
4. Investigating the moderating role of perceived environmental uncertainty in the impact of corporate governance on strategy implementation information technology firms in Jordan.

1.4 Study Significance and Importance

Study Significance

The purpose of this study is to attain theoretical and practical significance, as it possesses the capacity to generate contributions in both the theoretical and practical domains.

Theoretical Importance

The study's theoretical significance is rooted in its crucial contribution to advancing the grasp of the complex interplay between perceived environmental uncertainty, corporate governance, and strategy implementation in Jordanian technology firms. By delving into the nuanced role of perceived environmental uncertainty as a potential moderator, the study significantly enhances the current corpus of knowledge regarding the connection between corporate governance and the successful implementation of strategies. Unlike much of the preceding research, which has predominantly focused on the direct link between corporate governance and strategy implementation without considering the potential moderating influence of environmental uncertainty, this study pioneers a fresh perspective within these analytical frameworks. In essence, this research endeavors to unveil the hitherto unexplored dimensions of corporate governance and strategy implementation, shedding light on the moderating role that perceived environmental uncertainty may play in shaping these dynamics within the unique context of Jordanian technology firms. This approach not only broadens the intellectual horizons of corporate governance studies but also contributes to a better understanding of how external environmental factors can intricately influence strategic decisions and their subsequent implementation. The findings of this study can have meaningful implications for scholars, as it opens avenues for further exploration into the nuances of corporate governance and strategy under varying levels of environmental uncertainty.

Practical Importance

The study's practical value stems from its capacity to provide incisive analysis and recommendations to Jordanian technology firms on how to achieve their objectives in the face of environmental uncertainty. Understanding the importance of corporate governance and its potential to mitigate the impact of environmental uncertainty on strategy implementation may better equip Jordanian technology firms to navigate the sector’s challenges and opportunities. The study's findings may also assist firms (managers and decision makers) in identifying and implementing effective corporate governance practices that can support their strategic goals.

1.5 Study Questions and Hypotheses

Study Questions

1. What is the level of (corporate governance practices, strategic implementation, perceived environmental uncertainty) in information technology firms in Jordan?
2. Is there a statistically significant impact of corporate governance on strategy implementation in information technology firms in Jordan?
3. Does perceived environmental uncertainty moderate the impact of corporate governance on strategy implementation in information technology firms in Jordan?

Study Hypotheses Development

The hypotheses for this study were carefully developed by delving into a well-established theoretical underpinning. By synthesizing relevant literature and conceptual models, the study hypotheses demonstrate not only a profound understanding of theoretical foundations and underpinnings but also aim to fill existing knowledge gaps. This systematic approach guarantees that the hypotheses are firmly rooted in a diverse range of scholarly insights, setting the stage for a full and perceptive investigation into the research.

Resource Dependency Theory asserts that organizational success is contingent on the effective allocation and utilization of external resources (Jeffrey Pfeffer, 1981). Organizations manage and access these external resources through governance processes, which are part of corporate governance. Drawing from this theory, one can argue that the impact of corporate governance dimensions on strategy implementation in Jordanian information technology firms lacks statistical significance. This could be attributed to factors such as constrained availability of external resources despite transparent and accountable governance, inefficient resource utilization due to inadequate participative governance, or a lack of diversity in the board composition, limiting perspectives for strategy formulation and implementation. Based on the earlier discussion, it is hypothesized:

H01 There is no statistically significant Impact at ($\alpha = 0.05$) of corporate governance dimensions (transparency, accountability, participative governance, and board composition) collectively on strategy implementation in information technology firms in Jordan.

Agency Theory centers on the relationship between principals (e.g., shareholders) and agents (e.g., top executives) and the inherent conflicts in their interests (Eisenhardt &

Eisenhardt, 1989), is integral to corporate governance. In the context of corporate governance, principals seek to align agent behavior with organizational goals through mechanisms like board composition, executive compensation, and monitoring systems. Applying agency theory to the hypothesis, it's argued that the impact of corporate governance on programs in Jordanian information technology firms lacks statistical significance. This could be attributed to a misalignment of principal and agent interests, ineffective governance mechanisms, or other factors hindering the translation of governance practices to program outcomes. Consequently, the following hypothesis is postulated:

$H0_{1.1}$ There is no statistically significant Impact at ($\alpha = 0.05$) of corporate governance on programs in information technology firms in Jordan.

Stakeholder Theory, as proposed by Freeman et al. (2010), asserts that organizations are influenced by a diverse set of stakeholders, comprised of investors, staff, clients, vendors, and the general public. In the matter of corporate governance, the interests and expectations of these stakeholders significantly shape organizational decisions, including budget allocation. When applying stakeholder theory to the hypothesis, some may contend that the effect of corporate governance on the budget in Jordanian information technology firms lacks statistical significance. This could be attributed to a divergence between stakeholder interests and the budget decision-making process, a deficiency in stakeholder representation within governance structures, or other factors impeding the effective integration of stakeholder perspectives into budgeting decisions. Therefore, the following hypothesis is formulated:

$H0_{1.2}$ There is no statistically significant Impact at ($\alpha = 0.05$) of corporate governance on budget in information technology firms in Jordan.

Contingency Theory, as anticipated by Donaldson (2001), posits that the effectiveness of organizational practices, including corporate governance, depends on the alignment between these practices and the specific characteristics of the external environment. In the context of strategy implementation, a crucial contingency factor is the level of environmental uncertainty, representing the unpredictability and complexity of the external environment. When applying contingency theory to the hypothesis, it can be argued that perceived environmental uncertainty does not moderate the impact of corporate governance on strategy implementation in Jordanian information technology firms. This could be because governance mechanisms, including transparency, accountability, participative governance, and board composition, exhibit a consistent impact on strategy implementation, irrespective of the level of uncertainty in the external environment. Thus, the hypothesis posits:

H02 Perceived environmental uncertainty does not moderate the impact of corporate governance (transparency, accountability, participative governance, and board composition) collectively on strategy implementation in information technology firms in Jordan, with a significance level set at ($\alpha = 0.05$).

Institutional Theory asserts that organizations conform to external pressures and societal norms for legitimacy and survival, three types of isomorphic pressures are relevant (Meyer & Rowan, 1977). Coercive isomorphic pressures suggest that organizations may adopt corporate governance practices in response to external forces, such as legal requirements or industry standards, to navigate perceived environmental uncertainty (Sullivan & Gouldson, 2018). This alignment is not only crucial for maintaining organizational legitimacy but also plays a pivotal role in the successful execution of strategic programs. Specifically, in strategy implementation programs, adherence to industry standards and legal requirements becomes essential for organizations to effectively navigate uncertainties and accomplish strategic objectives (Kabeyi, 2019). Consequently, the theory proposes:

H0$_{2.1}$ Perceived environmental uncertainty does not moderate the impact corporate governance on programs in information technology firms in Jordan, with a significance level set at ($\alpha = 0.05$).

Dynamic Capability Theory is a cornerstone in strategic management, posits that an organization's ability to adapt and innovate in response to a rapidly changing business environment is crucial for achieving sustained competitive advantage (Teece, 1997). It underscores the adaptability of organizations to changing environments, advocating for the incorporation of internal and external competencies (Hoholm et al., 2017). Furthermore, promotes ongoing evaluation and modification of strategies in response to dynamic market forces (Bohl, 2015). Merging Dynamic Capability Theory with corporate governance cultivates an atmosphere that champions agility and innovation while upholding transparency and accountability. Organizations are better able to weather the storms of the business world when they use this combination strategy. As a result of this, the hypothesis states:

H0$_{2.2}$ Perceived environmental uncertainty does not moderate the impact of corporate governance on Budget in information technology firms in Jordan, with a significance level set at ($\alpha = 0.05$).

1.6 Study Model

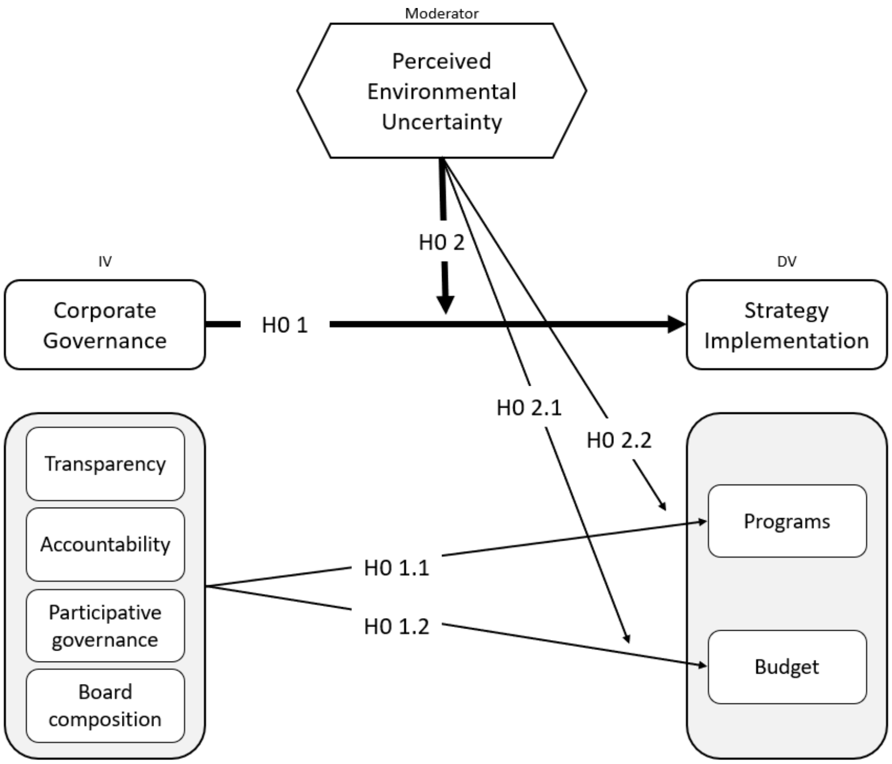

Fig (2): Study Model

On the basis of related theories and previous studies, this study model has been developed.

Independent variables:(Ali et al., 2022; Tun et al., 2021)

Dependent variables: (Bhatia et al., 2021; Igamba & Karanja, 2018; Wheelen & Hunger, 2023)

Moderator: (Al-Naser, 2017; Zayadin et al., 2023)

1.7 Study Limits

- **Time limits**: This study is completed during the first semester of the year 2023/2024.
- **Human Limits**: The study tool was distributed to all organizational levels, a sample of employees in technology firms in Jordan.

- **Spatial borders**: technology firms’ sector in Jordan.
- **Scientific Limitation**: The study's scope had been limited to (Corporate Governance, Strategy Implementation, Perceived Environmental Uncertainty).

1.8 Study Limitation

- The study was conducted within technology firms in Amman, Jordan, making it challenging to extrapolate the findings to different sectors situated in other cities or countries.
- Due to the reliance on the questionnaire as a data collection instrument in this study, there would be certain limitations in terms of not utilizing alternative methods.
- Many technology firms opted not to take part in the conducted study.

1.9 Operational Definitions

Corporate Governance

Corporate Governance Is a firm's array of rules and guidelines. It includes the interactions between a firm’s management, board of directors, shareholders, and other stakeholders, as well as the structures and processes that ensure accountability, fairness, and transparency and other governance principles. Measured through the questionnaire items (1-20).

Accountability is that the board of directors and executives of a corporation are obligated to be transparent and accountable to shareholders, stakeholders, and the broader community for their decisions. This includes overseeing corporate management, implementing internal controls, and ensuring compliance with legal and ethical standards. Measured through the questionnaire items (1-5).

Transparency refers to the degree to which an organization furnishes precise, comprehensive, and punctual data to its stakeholders, encompassing investors, regulators, and the general public. Measured through the questionnaire items (6-10).

Board Composition is the structure and composition of a firm's board of directors, encompassing factors such as the number of members, their credentials, and their level of independence from the firm's management. Measured through the questionnaire items (11-15).

Participative Governance means a method of making decisions that is transparent and fair, and which encourages input from both management and staff. It stresses the need of including a wide variety of interested parties in policymaking and decision-making. Measured through the questionnaire items (16-20).

Strategy Implementation

Strategy Implementation refers to the act of translating a firm's long-term strategies into action by creating programs, budgets, and processes. Measured through the questionnaire items (21-30)

Budget is the process of allocating capital to help realize an organization's strategic goals. Measured through the questionnaire items (21-25).

Programs are actions taken by a business to put its strategy into action; these include things like advertising campaigns, new product creation, and internal process upgrades. Measured through the questionnaire items (26-30).

Perceived Environmental Uncertainty

Perceived Environmental Uncertainty refers to how uncertain, complex, and ambiguous a firm determine its external environment to be in many different influences. Measured through the questionnaire items (31-44).

Level of Competition is the number of rivals, their market share, and how they approach pricing and profitability in the same industry as the firm in question. Measured through the questionnaire items (31-35).

Rate of Technological Change is the rapidity with which hardware, software, and communications technologies are evolving and changing in the environment. Measured through the questionnaire items (36-41).

Market Volatility is how volatile and unpredictable market conditions are, taking into account things like demand swings, consumer tastes, and economic climate changes. Measured through the questionnaire items (42-44).

CHAPTER TWO

Literature Review and Previous Studies

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Literature Review and Previous Studies

2.1 Introduction

This study's theoretical framework is built around the overarching purpose of contributing to fill in the gaps in the literature regarding the effects of corporate governance on the actual implementation of strategies. This part introduces the theoretical framework of the study, with an emphasis on the role that environmental uncertainty plays in shaping the relationship between corporate governance practices and strategy plan implementation.

2.2 Corporate governance

Definition and Scope

Corporate governance, an integral aspect of contemporary business practices, has become increasingly prominent in recent years, capturing significant attention for its profound influence on organizational operations and performance. As posited by Hitt et al. (2020), corporate governance is not merely a set of rules and organizational structures; it is the cornerstone of proper business conduct, designed to reconcile the often-divergent interests of stakeholders. This intricate web of regulations and frameworks serves as a compass, guiding companies toward ethical and effective decision-making.

Du Plessis et al. (2015) contribute to this understanding by elucidating that corporate governance comprises not only rules and structures but also processes and decision-making mechanisms. It is a dynamic system that not only establishes guidelines for conduct but also provides a comprehensive framework for the measurement and evaluation of achieved results. Naciti et al. (2022) further underscore the interconnectedness of rules, regulations, and processes, emphasizing their collective impact on corporate governance decisions.

Vanishvili & Shanava (2022) enrich the discourse by offering a nuanced perspective on the challenges and perspectives of corporate governance. They position it as a dynamic interplay of rules, regulations, and processes that not only steer a firm's activities but also play a pivotal role in determining its success. This viewpoint accentuates the evolving nature of corporate governance in response to the ever-changing business landscape.

Furthermore, defining governance can be as a set of responsibilities and approaches employed by boards of directors and managers to chart a strategic path, manage risks, and ensure responsible resource utilization. This broader conceptualization highlights the pervasive influence of governance in shaping organizational behavior and outcomes.

Adding a layer of ethical consideration, Hatamleh & Salameh (2017) stress the foundation of governance on fairness and justice. They depict governance as a comprehensive system encompassing measures of excellent management performance and control mechanisms to avert negative impacts on enterprise activities.

Narrowing our focus to corporate governance, Önce & Çavuş (2019) elucidate it as a management method ensuring value creation during business operations, effective involvement of interested parties, and fair distribution of the created value. Building on the research of Danzer (2019), corporate governance emerges as a vehicle for improving performance across all facets of an institution, with a particular emphasis on transparency, accountability, and responsibility. In summation, corporate governance emerges as a multifaceted system encompassing rules, processes, and organizational structures. It serves as a guiding framework for decision-making, emphasizing transparency, accountability, and ethical responsibility, all of which are crucial in navigating the complexities of modern business environments.

Theoretical Frameworks of Corporate Governance Theories

The extant theoretical frameworks on corporate governance make an effort to shed light on the origins, operations, and impacts of the activities that make up corporate governance. The agency theory, the stewardship theory, and the resource dependency theory are a few examples of the most prominent theoretical underpinnings on corporate governance. Several theoretical frameworks have been used to understand and analyze corporate governance practices. Agency theory posits that spats of different interests can emerge between management and shareholders, resulting in agency difficulties (Putra et al., 2019). Stakeholder theory emphasizes the importance of considering the interests of various stakeholders beyond just shareholders when making governance decisions (Baumfield, 2016). Resource dependency theory focuses on the external dependencies and interdependencies of organizations and how these influence their governance mechanisms (Sherer et al., 2019).

1. *The agency theory*

This corporate governance paradigm has undergone more scrutiny than any other. Agency theory, articulated by Jensen & Meckling (1976), is a key concept in corporate governance, emphasizing the risk of managers prioritizing personal interests over shareholders. This divergence necessitates robust governance systems, including boards of directors and executive compensation, to align managerial and shareholder interests (Fama & Jensen, 2019)

Within agency theory, the function of boards of directors is paramount, acting as fiduciaries for shareholders. They are involved in CEO selection, compensation determination, and strategic decision-making.

Executive compensation's crucial role in corporate governance is highlighted by Rehman et al. (2021), who stress its dual function as remuneration and a tool to align interests. Motivating managers to emphasize activities that enhance shareholder value, incentive structures relate a large percentage of executive pay to business success.

In effective corporate governance, the dynamic interplay of boards, executive compensation, and managerial actions requires a delicate balance. Boards must ensure managerial autonomy while safeguarding the alignment with strategic goals (Olalere, 2019). Thoughtfully designed executive compensation becomes a tool for incentivizing ethical decision-making and strategic choices, contributing to the long-term success of organizational strategies (Shan & Walter, 2016). As corporate governance evolves, ongoing refinement of these mechanisms is crucial for transparency, accountability, and sustained alignment with strategic objectives.

2. *The Stewardship theory*

Stewardship theory, presented by Davis et al. (1997), in contrast to agency theory, asserts that managers naturally behave honestly when it comes to meeting the firm's objectives. This perspective advocates for corporate governance processes that prioritize managerial autonomy, emphasizing trust over micromanagement.

Aligned with stewardship theory, the role of the board of directors shifts from strict oversight to providing guidance and support to the management team (Donaldson & Davis, 1991). This collaborative approach fosters an environment that encourages responsible decision-making. In this context, executive compensation, as per stewardship theory, becomes a strategic tool, incentivizing long-term performance and discouraging short-term thinking that may impede sustainable growth.

Furthermore, stewardship theory emphasizes the crucial role of boards in cultivating an ethical and sustainable organizational culture (Keay, 2017). Boards are viewed as stewards of the firm's values, working to instill responsibility and ethical behavior throughout the organization.

Embracing stewardship theory transforms corporate governance into a collaborative partnership between management and the board, reinforcing trust in managers. This shift underscores the significance of ethical conduct and sustainability in achieving enduring corporate success. Stewardship theory offers a compelling framework for navigating the challenges in the modern corporate scenery, emphasizing long-term success and ethical governance.

Challenges and Emerging Trends in Corporate Governance

Corporate governance is undergoing continual transformation, responding to challenges and emerging trends (Renou et al., 2023). Digital transformation introduces new dynamics, compelling organizations to realign governance structures with the digital age (Martínez-Peláez et al., 2023). Artificial intelligence, big data analytics, and cybersecurity concerns present challenges beyond traditional frameworks, requiring effective oversight from boards on technology-driven risks (Daidai & Tamnine, 2023).

Globalized business brings unique governance challenges for multinational corporations, navigating diverse legal, cultural, and regulatory landscapes (Rioux, 2014). Striking a balance between global coherence and local sensitivity in governance becomes crucial.

In this dynamic environment, organizations championing robust governance not only comply with regulations but also leverage governance strategically. Integrating technological advancements, addressing global complexities, and aligning with societal expectations positions organizations for success. The resilience and adaptability of governance frameworks will remain critical in steering organizations towards sustained success amid evolving challenges and trends.

Dimensions of Corporate Governance

1. *Transparency*

Transparency, emphasized by Karabulut et al. (2020), is a fundamental management principle crucial for fostering open communication and trust among stakeholders. It involves proactively disclosing a firm's activities, plans, and risks aligned with business strategies, primarily benefiting shareholders. Beyond disclosure, transparency enhances the board's oversight of the CEO, providing a clearer evaluation of leadership effectiveness (Arslan & Alqatan, 2020). This not only benefits internal dynamics but also signals management competence to external stakeholders.

However, the pursuit of transparency poses challenges, as noted by (Song & Wan, 2019). Increased transparency brings inherent risks for CEOs, intensifying scrutiny, expectations, and demanding precise navigation of responsibilities.

Examining transparency's impact on market performance, Feng & Wu (2023) claim that firms with elevated disclosure levels tend to outperform the market and stay ahead of the competition. This highlights the timely and comprehensive dissemination of information and grants a competitive edge to transparent firms.

2. *Accountability*

Accountability is a fundamental cornerstone in corporate governance, encompassing the acknowledgment and assumption of responsibility for actions, decisions, and their consequences (Mohd Noor et al., 2022). It extends beyond financial performance to include ethical considerations, social responsibility, and environmental sustainability, essential for maintaining stakeholder trust and ensuring enduring organizational success (Duc Tai, 2022). In the intricate landscape of corporate governance, accountability guides organizational behavior, particularly in ethical dimensions.

Crucially, accountability influences organizational strategies for long-term success (Gandrita, 2023). Accountable organizations proactively integrate ethical, social, and environmental considerations into their frameworks, enhancing resilience amid market dynamics and meeting societal expectations (Gray et al., 2014).

3. *Participative Governance*

In participative organizations, individuals move beyond being mere entities within the structure and actively engage in every aspect of the organization (Collier & Esteban, 1999). This departure from traditional hierarchies emphasizes the integral role of stakeholders in shaping the organization's identity and direction, serving as a strategic imperative for a more inclusive and dynamic corporate environment (Stymne, 1980).

Stakeholder involvement in participative organizations extends beyond operational considerations; it establishes norms for societal interactions and rebuilds public trust in policymakers (Kujala et al., 2022). Recognizing stakeholders as active decision-making participants not only empowers individuals but also aligns organizational practices with societal expectations, fostering a responsive and accountable corporate culture (Franklin, 2020).

Gaber (2019) presents Arnstein's Ladder, a conceptual framework depicting eight steps to measure the depth of stakeholder involvement. This tool offers organizations a way to assess and enhance their level of engagement, from tokenism to full partnership. Arnstein's Ladder, beyond a theoretical framework, serves as a practical instrument for organizations aiming to strengthen corporate governance through increased stakeholder participation. By strategically using this ladder, firms can gauge current involvement levels and identify opportunities for improvement, actively integrating stakeholders' perspectives into decision-making processes.

Adopting Arnstein's Ladder is a tangible step toward creating a participative organizational culture, moving beyond symbolic gestures to genuine collaboration. This evolution contributes to enhanced corporate governance, positioning the organization as socially responsible and adaptive in a constantly evolving business landscape.

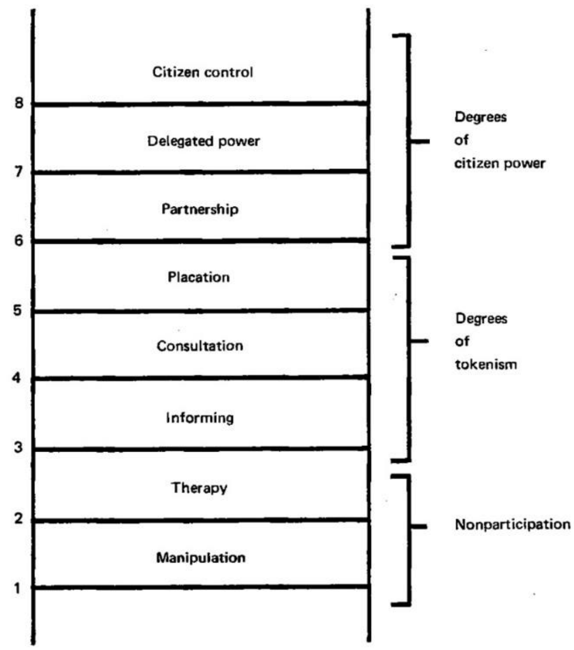

Figure (3): Arnstein's Ladder

4. *Board Composition*

Corporate board composition significantly influences firm success, as acknowledged widely in scholarly discourse (Benvolio & Ironkwe, 2022). Over the past two decades, boards of directors have gained prominence as a crucial element of effective corporate governance, shaping the strategic direction and overall performance of organizations (Assenga et al., 2018; Marimuthu & Kolandaisamy, 2009).

Board composition, a multifaceted concept, is defined through three primary lenses: the size of the board, board independence, and diversity (Chebbi & Ammer, 2022; Nel et al., 2020). Board size influences decision-making dynamics, while board independence ensures objectivity and mitigates conflicts of interest.

Board diversity, encompassing factors like gender, ethnicity, age, and qualifications, adds complexity to the composition paradigm. (Bernile et al., 2016; Fernandez & Thams, 2019; Hakovirta et al., 2020) emphasize that a diverse board contributes to robust decision-making, innovation, and improved governance practices.

The implications of board composition on firm success are multifaceted. Optimal board size, balancing diverse viewpoints with effective decision-making, correlates positively with organizational performance (Benvolio & Ironkwe, 2022). Having independent non-executive directors on board improves accountability and governance processes.

Firm success is positively affected by a diverse board. with diverse boards better navigating business complexities, fostering innovation, and aligning with principles of social responsibility. This diversity resonates with contemporary expectations for organizations to be inclusive and reflective of broader societal fabric.

2.3 Strategy Implementation

Definition and Scope

At the core of strategic management lies strategy implementation, an essential pillar where strategic plans are transformed into actionable activities with tangible outcomes (Tawse & Tabesh, 2021). Being a part of today's fast-paced and cutthroat corporate world, strategy implementation has become increasingly complex, urging organizations to reevaluate their assumptions about executing strategic plans (Mubarak & Yusoff, 2019; Twum, 2021).

Recent trends underscore the growing importance of institutional maturity for organizations. Recognizing that institutional maturity significantly enhances efficiency and drives performance improvements, there is a shift in focus towards the implementation process as the linchpin for strategic success. As Daft (2010) emphasizes, even the most innovative strategy holds little value without effective translation into actionable steps, highlighting the inseparable link between strategy design and implementation.

A common challenge in strategy implementation lies in the potential gap between top management's strategic vision and the execution carried out by lower levels (Johansson & Svensson, 2017). Delegating execution to lower organizational levels may result in misalignment, hindering the realization of strategic objectives (Dobrajska et al., 2015). The comprehensive processes involved in strategy implementation encompass a range of options and activities, turning chosen strategies into actionable initiatives through program development, budgeting, and procedural establishment (Amoo et al., 2019; Bhatia et al., 2021).

Implementation is the process of translating decisions, plans, policies, and objectives into practical actions that propel organizational progress (Wheelen & Hunger, 2023). The board of directors is crucial not only in strategy development but also in strategy implementation, ensuring that the desired objectives are attained (Hakovirta et al., 2020). This necessitates a holistic approach, involving the development of effective strategies and fostering organizational adoption, understanding, and communication of the strategic vision.

Effective Strategy Implementation

For companies seeking to accomplish long-term goals and objectives, effective plan implementation is critical (El-Toukhy, 2021). Scholars and practitioners alike have highlighted several benefits associated with successful strategy implementation. Effectively implementing a strategic plan stands as a linchpin for organizations striving for goal achievement and overall performance improvement (Tchaikovsky, 2023). Kaplan and Norton's Balanced Scorecard framework, a stalwart in strategic management, emphasizes the pivotal role of aligning strategic objectives with key performance indicators (KPIs), serving as a navigational tool guiding the organization toward its overarching goals (Efendi Silalahi, 2023). This framework operates as a dynamic compass, ensuring that every facet of the organization moves synergistically to propel progress. The strategic implementation process transcends mere goal-setting; it demands ongoing adaptability and rigorous evaluation (Rani, 2019). Through the integration of KPIs into the strategic fabric, organizations not only establish clear objectives but also vigilantly monitor and adjust their efforts, ensuring a steadfast trajectory (Hristov et al., 2022).

Moreover, the merits of strategic implementation extend to fostering enhanced organizational alignment (Hussein Jassem & Abdel-Wadoud Taher, 2023). A precisely executed strategy promotes heightened coherence among diverse organizational units and departments. As employees throughout the organization comprehend and actively contribute to a shared strategic goal, it nurtures a sense of unity and a collective commitment to success (Rodrigues da Costa & Maria Correia Loureiro, 2019). This alignment creates a fertile environment for improved collaboration and coordination, dismantling silos that might otherwise impede productivity. The cross-functional understanding of strategic objectives empowers teams to seamlessly collaborate, capitalizing on diverse skill sets and perspectives to address challenges and exploit opportunities.

Challenges in Strategy Implementation

In spite of the significance of executing strategies, it frequently encounters obstacles such as limited employee engagement, communication challenges, inadequate resources, and insufficient monitoring and evaluation practices, leading to failures (Twum, 2021). Identifying and addressing these challenges is critical to ensuring successful strategy execution. Embarking on the implementation of a strategic plan is a complex undertaking laden with challenges, and chief among them is the formidable barrier of employee resistance to change (Tamunomiebi & Akpan, 2021). Within the intricate fabric of an organization, individuals and teams harbor their distinct comfort zones. The introduction of novel processes, technologies, or work methodologies may incite resistance, disrupting the seamless execution of the strategy (Ouedraogo et al., 2021). Navigating this resistance demands adept leadership and a holistic change management approach to instill buy-in and facilitate a fluid transition (Zainol et al., 2021).

A second pivotal challenge resides in the realm of communication and clarity (Verweire, 2019). Ineffectual communication and a lack of precision regarding strategic objectives can cast a pervasive cloud of confusion across the organizational landscape (Musheke & Phiri, 2021). Leaders bear the onus of articulating the strategy with utmost precision, ensuring every member of the organization comprehends their role in the execution of the strategy (Abdulridha Jabbar & Hussein, 2017). This clarity not only serves to mitigate potential confusion but also nurtures a shared sense of purpose and alignment among employees, fostering a collective commitment to the strategic journey.

Moreover, a noteworthy impediment to successful strategy implementation is inadequate resource allocation (Kyalo, 2023). Whether in terms of budget, technology, or personnel, insufficient allocation has the potential to impede the progress of strategic initiatives (Hitt et al., 2020). Organizations must accurately evaluate and allocate resources to underpin their strategic endeavors, recognizing that a deficiency in any area can undermine the entirety of the implementation process (Rani, 2019).

Finally, the dynamic external environment introduces an element of unpredictability (Reed, 2022). Unforeseen external factors, including shifts in market conditions, regulatory landscapes, or unexpected events such as global economic crises or pandemics, can disrupt even the most meticulously crafted strategic plans. To navigate these uncertainties, organizations must infuse flexibility into their strategies, enabling adaptation in response to external challenges. The capacity to foresee possible disruptions and systematically incorporate backup measures enhances an organization's resilience against unforeseen external factors, strengthening the foundation of successful strategy execution (Parker & Ameen, 2018).

Dimensions of Strategy Implementation

1. *Programs*

Strategy implementation, as the linchpin in the broader strategic management process, assumes a pivotal role in bridging the gap between strategic planning and tangible organizational outcomes. Within this dynamic framework, the significance of programs becomes even more pronounced, acting as a fundamental enabler in translating strategic objectives into actionable initiatives (Khan et al., 2017). Building upon insights from scholarly contributions, the concept of strategic alignment takes center stage, underscoring the imperative of aligning organizational activities seamlessly with overarching strategic goals (Ghonim et al., 2022). Program management, as illuminated in the literature, emerges as a critical mechanism ensuring that individual projects synergistically contribute to the attainment of strategic objectives through the establishment of a well-defined program structure (Fahri et al., 2020). This structure facilitates alignment, synchronization, and effective coordination across a spectrum of diverse projects (Srivastava & Sushil, 2018).

Furthermore, the iterative nature of strategy implementation underscores the imperative for organizational adaptability and responsiveness to ever-changing internal and external circumstances (Weizer et al., 2020). Successful strategy implementation through programs involves the establishment of a continuous feedback loop, empowering organizations to respond promptly to emerging challenges and strategically capitalize on opportunities (Niederman & Chudoba, 2017).

Delving deeper into the nuanced aspects, the nexus of leadership and organizational culture, as emphasized, emerges as paramount in driving successful strategy implementation through programs (Nahak & Ellitan, 2022). Effective leaders are acknowledged for their role in cultivating a culture that not only values program management but also encourages innovation and fosters collaboration across various organizational levels (Streimikiene et al., 2021). This cultural underpinning becomes instrumental in overcoming resistance to change, a common challenge encountered during strategy implementation.

A critical facet pertains to the evaluation and measurement of program success. Robust measurement mechanisms, including the establishment of clear Key Performance Indicators (KPIs) aligned with strategic objectives, are imperative in gauging the impact and progress of programs (Alramli, 2023). This emphasis underscores the need for organizations to develop comprehensive metrics that provide meaningful insights into program effectiveness.

Additionally, within the contemporary landscape, technology assumes a pivotal role in enhancing program implementation efficiency. This involves the strategic integration of project management tools, data analytics, and communication platforms (Danchuk et al., 2021). Technology emerges as a facilitator for real-time monitoring, seamless communication, and data-driven decision-making, thereby contributing significantly to the overall success of strategy implementation.

2. *Budget*

Budgets play a multifaceted role that extends beyond their traditional function of financial planning. One of the primary dimensions where budgets significantly contribute is in strategy implementation (Moses et al., 2022). Rather than being a static financial plan, budgets serve as dynamic tools that act as a linchpin for effectively executing strategic initiatives.

The budget, as a dynamic tool, operates as a performance benchmark and control mechanism (Habiburrochman & Rizki, 2020). It provides a framework for organizations to assess operational efficiency by comparing actual financial results against budgeted figures (Demidova, 2021). This comparison not only identifies variances but also serves as a basis for prompt corrective actions, ensuring that the organization stays on course with its strategic objectives (Adilli, 2020).

Recognizing the ever-changing business landscape, a proficient budgeting process incorporates adaptability to respond to shifts in market dynamics, technological advancements, or changes in regulatory frameworks (Marotta et al., 2022; Nikodijević, 2021). This adaptive capacity empowers organizations to proactively address unforeseen challenges and capitalize on emerging opportunities, all while staying aligned with their strategic intent.

Moreover, budgets assume a pivotal role in resource optimization, guiding the allocation of resources toward high-priority projects that align with strategic goals (Pasenko & Pasternak, 2021). This strategic distribution guarantees that scarce resources are allocated to initiatives that play a substantial role in the overall success of the organization throughout the strategy implementation phase (Omosidi et al., 2019).

The budgeting process, as a conduit for communication and transparency, translates strategic decisions into budgetary allocations communicated across various organizational levels (Wilson, 2021). This fosters a shared understanding of organizational objectives, building trust among stakeholders such as employees, investors, and customers (Kusmuriyanto et al., 2020). It becomes a strategic roadmap that guides each level of the organization in contributing to the overarching strategic goals.

Integration of the budget with strategic priorities stimulates innovation and investment in research and development, technology upgrades, and talent development (Paderin &

Horiashchenko, 2021). This integration nurtures a culture of continuous improvement and adaptability, crucial elements in successfully implementing strategic initiatives.

Additionally, the inclusion of risk assessment and management strategies in the budgeting process acknowledges the uncertainties associated with strategic decisions (Décaire, 2019). This proactive approach allows organizations to identify potential risks, establish risk reserves, and develop response plans, thereby enhancing their ability to navigate challenges and uncertainties.

2.4 Perceived Environmental Uncertainty

Definition and Scope

Perceived environmental uncertainty is a pervasive force that shapes the strategic direction and decision-making processes within organizations (Han et al., 2023). In the rapidly evolving and dynamic business environment, business leaders need to navigate a multitude of external factors that have the potential to influence their operations (Sadiku, 2022). The ability to anticipate and respond to volatility and complexity is vital for organizational success (Godwin & Sorbarikor, 2022).

One key aspect of managing environmental uncertainty is the recognition that it is not a static condition (Lutfi, 2020). The business environment is dynamic, influenced by technological advancements, geopolitical shifts, economic fluctuations, and societal changes (Sirohi et al., 2022). As such, organizations need to adopt a proactive stance, continuously scanning the external landscape to identify emerging trends and potential disruptors.

To effectively manage uncertainty, organizations employ a range of strategies to gather information and utilize research tools strategically (Lima et al., 2022). Market research is a cornerstone, providing insights into customer needs, preferences, and behaviors (Spider, 2023). Customer satisfaction assessments offer valuable feedback on the organization's performance, while competitor evaluations help gauge the competitive landscape (Agag et al., 2023). These analyses are not standalone activities but are interconnected components of a comprehensive approach to understanding the dynamics of the business environment (Möller et al., 2020). By integrating these insights, organizations can develop a more nuanced and accurate picture of the external forces at play.

Furthermore, the concept of uncertainty extends beyond predicting future events; it encompasses the inherent difficulty in accurately forecasting outcomes (Petropoulos et al., 2022). This challenge is exacerbated by factors such as insufficient data for accurate predictions and the complexity of distinguishing between relevant and irrelevant information (Abdar et al., 2021). Therefore, organizations must invest in robust data collection and analysis processes to enhance their capacity to make informed decisions.

The quality and relevance of data become critical factors in mitigating uncertainty. Decision-makers must grapple with not only the unknown future events but also the ambiguity and potential misinformation present in the data (Marchau et al., 2019). This underscores the importance of data governance, ensuring that information used for decision-making is reliable, up-to-date, and aligned with the organization's strategic goals.

The nature of assurance, or lack thereof, becomes a defining factor in an organization's preparedness to face future challenges (Bloomfield & Rushby, 2020). Consequently, organizations must continually refine their ability to gather, interpret, and act upon information in a dynamic environment to enhance their decision-making capabilities and ensure strategic alignment with the evolving landscape (Žitkienė & Deksnys, 2018).

Theoretical Frameworks of Environmental Uncertainty Theories

1. *Resource Dependence Theory (RDT)*

The Resource Dependence Theory (RDT) provides a solid foundation for comprehending the ways in which organizations strategically engage with their external surroundings to acquire crucial resources (Jeffrey Pfeffer, 1981). According to RDT, organizations actively engage with their surroundings to obtain essential resources such as capital, information, and legitimacy, crucial for survival and prosperity. The theory underscores the significance of organizations comprehending and adapting to the uncertainties inherent in external resource dependencies.

Numerous studies have applied RDT to analyze organizational behaviors in the face of uncertainty. Jeffrey Pfeffer (1981), for instance, explored how organizations establish and leverage interorganizational networks to reduce dependence on a single resource supplier. This approach allows organizations to effectively mitigate environmental uncertainty and enhance resilience. By diversifying their resource base, organizations can take proactive measures to safeguard long-term viability.

In addition to network diversification, RDT literature delves into power dynamics, negotiation strategies, and collaboration in managing resource dependencies within unpredictable environments (Ozturk, 2021). Organizations grapple with power imbalances and negotiations to ensure a steady inflow of resources, employing diverse strategies to navigate the complex landscape of external dependencies (Ninan et al., 2019). Understanding the interplay of power dynamics and negotiation tactics within RDT provides valuable insights for optimizing resource acquisition and utilization (Schaerer, 2020).

Furthermore, the literature emphasizes collaboration as a key component in addressing resource dependencies (Dania et al., 2018). Organizations form partnerships and alliances to pool resources, share risks, and collectively navigate uncertainties (AbouAssi et al., 2021). Strategically executed collaborative ventures not only secure resources but also contribute to building a support network invaluable in turbulent environments (Balodi, 2020).

2. *Population Ecology (PE)*

The Population Ecology (PE) theory, initially introduced by Hannan and Freeman (1977), stands as a pivotal framework within the realm of environmental uncertainty research. It intricately examines the multifaceted interactions among organizations within a specific environment, offering profound insights into their emergence, evolution, and ultimate decline within a given population (Sui et al., 2019). At its core, this theoretical perspective posits that organizations are subject to the potent influences of ecological forces, thereby contributing to a dynamically charged environment characterized by pervasive uncertainty and fierce competition. Sui et al. (2019) elucidate how Population Ecology enlightens the evolutionary processes unfolding within a population of organizations over time, aligning seamlessly with the foundational principles of PE. This perspective underscores the profound relevance of PE in unraveling the intricate dynamics of organizational populations and their nuanced responses to environmental uncertainty.

In a parallel vein, Dari & Isfianadewi (2020) delve into the discussion by examining how changing surroundings affect business success, emphasizing the pivotal role of adaptation strategies within the contextual confines of Population Ecology. Their findings resonate harmoniously with the core tenets of PE, shedding light on how environmental changes shape organizational birth rates, death rates, and the adaptive strategies crucial for survival and growth.

Importance of Understanding Environmental Uncertainty

Understanding environmental uncertainty is paramount for organizational survival and growth, given that the external environment, marked by its dynamism, complexity, and unpredictability, significantly influences organizational outcomes (Kwiotkowska, 2019). This comprehension is critical for several reasons. Firstly, in dynamic environments, strategic decision-making becomes essential for organizations to navigate challenges effectively (Liem & Hien, 2020). Awareness of environmental uncertainty enables informed decisions regarding resource allocation, competitive positioning, and innovation (Sinnaiah et al., 2023). Secondly, uncertain environments demand adaptability and flexibility from organizations (Çakmak, 2023). A nuanced understanding of environmental uncertainty helps develop adaptive strategies, allowing organizations to thrive amidst change (YahiaMarzouk & Jin, 2022). Exploring the concept of organizational ambidexterity, researchers highlight the need to balance the utilization of existing capabilities with seeking of new opportunities in uncertain environments (Alizadeh & Jetter, 2019). Lastly, environmental uncertainty introduces risks that organizations must manage effectively (Abrudan et al., 2022). Research underscores the importance of organizational design in managing uncertainty, illustrating how different structural configurations can either enhance or impede an organization's ability to cope with environmental challenges (Pérez-Valls et al., 2019). In essence, a comprehensive grasp of environmental uncertainty equips organizations to make strategic decisions, foster adaptability, and effectively manage risks in the face of a dynamic and unpredictable external landscape, ultimately contributing to their sustained survival and growth.

Dimensions of Perceived Environmental Uncertainty

1. *Market Volatility*

Emerging markets are presently contending with growing uncertainty, increased volatility, and the widespread repercussions of spillover effects (Shavazipour et al., 2021). Amid these challenges, there are uncertainties surrounding the potential market scale concerning demand dynamics (Zimmermann et al., 2021). The pivotal question of when and to what degree this demand will materialize becomes a critical consideration for developing markets (Wichmann et al., 2022). Forecasts from industry experts display a notable range of variations, adding an extra layer of intricacy to the strategic planning for these burgeoning economies (Talaoui et al., 2023).

The inherent unpredictability of demand poses a significant obstacle to anticipating consumer preferences, creating a notably dynamic landscape (Weaver & Moon, 2018). This unpredictability not only impacts businesses at the grassroots level but also sends ripples throughout the broader economic spectrum (Ghosal & Ye, 2019). The intricate interplay of these elements extends its influence to affect the stock market, injecting an element of unpredictability into investment landscapes.

In the ongoing evolution of emerging markets amidst these uncertainties, the importance of strategic foresight and the ability to adapt to changing circumstances becomes paramount for sustained growth and stability (Dana et al., 2022). The complex interaction of diverse factors necessitates a comprehensive approach to risk management and strategic planning, acknowledging the multifaceted nature of the challenges involved (Marulanda Fraume et al., 2020).

2. *Level of Competition*

The level of competition pertains to market-related factors that impact competition levels (Zagorsek, 2020). This assessment considers elements such as the number of similar firms in the industry, product competitiveness, the influence on market share due to competition, the extent of price manipulation, agreements between customers and competitors, shifts in regulations and government policies, the intensity of price-based competition, the level of competition based on product differentiation, promotional strategies, and distribution channels (Tyunyukova et al., 2019). Successful businesses are those capable of adapting quickly to new circumstances, which involves understanding rivals' characteristics, tactics, reactions, and unforeseen events within competing organizations (Groeger et al., 2019). Identifying who the competitors are is crucial, determining whether businesses are specialized or integrated, and raising concerns about the competitive strategies and tactics employed (Antai & Mutshinda, 2021). Additionally, Porter's Five Forces Model can assess an industry's strengths and weaknesses by analyzing competitive factors such as industry competition, potential new entrants, supplier power, buyer power, and the threat of substitute products (Porter, 1979).

3. Rate of Technological Change

Technological change is a dynamic and rapidly evolving process that shapes a firm's products and processes, fueled by advancements in technology (Kraus et al., 2022). Within the organizational structure, various departments exhibit a significant capability to discern and retain essential knowledge for navigating the complexities of evolving technological landscapes (Leso et al., 2023).

This entails not just adjusting to the brisk pace of technological change but also skillfully managing a multitude of tasks simultaneously (Aggarwal et al., 2016). In pursuit of innovation, the firm deliberately expands its range of products, increases production volumes, and takes a proactive stance in addressing a variety of challenges (Grzegorczyk, 2020). Additionally, the organization actively embraces the latest technological advancements and utilizes social media platforms to maintain connectivity and responsiveness in an increasingly digital world (Camilleri & Isaias, 2021).

Moreover, the optimization and streamlining of technological processes are significantly influenced by the diversification of products and concerted efforts in extensive production (Prilutskaya et al., 2020). This comprehensive approach guarantees that the firm remains at the forefront of technological trends, fostering adaptability and sustained growth in a continually evolving business environment.

2.5 Previous Studies

Previous studies in the field of organizational management have extensively explored various facets crucial to sustainable business performance. This body of research has been particularly focused on three key areas: strategy implementation, corporate governance, and perceived environmental uncertainty. The collective insights derived from these studies contribute to a comprehensive understanding of the dynamic interplay between organizational strategy, governance structures, and the external business environment.

1. A Study of Lehner, (2004) entitled:

Strategy Implementation Tactics as Response to Organizational, Strategic, and Environmental Imperatives

This study aimed to explore the effect of organizational, strategic, and environmental imperatives on strategy implementation. In a sample of 136 upper Austrian enterprises like machine and engineering industry, banking, and the food industry, a questionnaire-based measure of implementation tactics is assessed by referring to implementation projects or strategy-related challenges. The study found that external circumstances strongly explain the use of autocratic techniques, but the presence of a stated plan inside the organization considerably explains the use of participatory tactics. Only the relationship between environmental and strategic factors was a significant predictor of culture as an implementation method.

2. A Study of Oreja-Rodríguez and Yanes-Estévez, (2007) entitled:

Perceived Environmental Uncertainty in Tourism: A New Approach Using the Rasch Model

This research, focusing on strategic management in tourism organizations, utilized the Rasch model to assess perceived environmental uncertainty, considering dynamism and complexity as key dimensions. Conducted in the Canary Islands, Spain, the study gathered data from 34 tourism enterprises through a questionnaire. Utilizing the Rasch model, insights into dynamism, complexity, and uncertainty were extracted, emphasizing a cognitive perspective by prioritizing managerial viewpoints. The study offers recommendations to aid managers and institutions in identifying uncertainties and formulating adaptive strategies with anticipated strategic insights. The primary scientific tool employed was a Rasch-calibrated questionnaire, utilizing a five-interval scale to measure participants' responses.

3. A Study of Harrington and Kendall, (2014) entitled:

Uncovering the Interrelationships Among Firm Size, Organizational Involvement, Environmental Uncertainty, and Implementation Success

This study explores how restaurant management and employees execute strategies. It examines how environmental unpredictability, firm size, and unit type affect this process. The study found that organizations with more uncertainty involve more people in their decision-making. Larger firms use strategies that involve more people, and increased engagement is linked to strategy success. The research emphasizes business size, unpredictability, and involvement interactions. Larger firms tend to engage more regardless of uncertainty, while smaller enterprises tend to engage less in stable situations but more in dynamic contexts. Larger businesses may benefit from frequent participation to improve adaptability and resource allocation. Smaller enterprises may benefit from increased engagement in uncertain times to improve competitive agility. The research used a rigorous approach, including a random sample from a restaurant association, a pre-tested survey instrument, and SPSS statistical analysis.

4. A Study of Isaac et al., (2016) entitled:

The Mediating Effect of Strategic Implementation between Strategy Formulation and Organizational Performance within Government Institutions in Yemen

The purpose of this research was to examine the relationship between strategy creation, strategy execution, and performance in Yemeni government institutions. Study population were government institutions in Yemen, with a sample of total of 130 personnel from ministry of health. The researcher collected data from a questionnaire survey. Research shows that strategy development affects strategy execution positively and significantly, and that this in turn affects organizational performance positively, indicating that strategy implementation acted as a mediating variable. This research offers a new point of view and adds to our knowledge of how strategic management methods affect organizational performance.

5. A Study of Arunruangsirilert and Chonglerttham, (2017) entitled:

Effect of corporate governance characteristics on strategic management accounting in Thailand

The prior study investigated the impact of corporate governance characteristics on strategic management accounting (SMA) in Thai companies listed on the Stock Exchange from 2011 to 2013. Utilizing multiple regression analysis on survey and corporate governance data, the study found significant effects on two SMA aspects: participation (SMAP) and usage (SMAU). Notable outcomes included positive effects from the separation of CEO and chairman roles, independent board size, and audit committee meeting frequency on both SMAP and SMAU. Conversely, an independent chairman and larger board size had negative impacts on both aspects. The study also identified the positive influence of CEO and chairman kinship on SMAU, while joint business ownership negatively affected SMAU. Recommendations emphasized the importance of aligning corporate governance mechanisms with SMA for strategic support, offering theoretical insights and practical guidelines for managers in the Thai context, with acknowledgment of limited generalization beyond the capital market.

6. A Study of Mwanje and Deya, (2018) entitled:

Role of Strategy Implementation in Governance of Counties in Kenya

This study investigated the impact of strategy implementation on governance within the framework of the 47 Kenyan counties established by the 2010 constitution. Employing stratified sampling, the counties were divided into eight geographic divisions, aligning with Kenya's former eight provinces. From this categorization, eight counties were selected, comprising a sample size of 211 individuals. Data collection utilized questionnaires and interview guides. Results indicated a significant role of plan implementation in Kenyan county governance. Notably, resource allocation, strategic leadership, strategic communication, and organizational structure emerged as key factors positively influencing governance. The study recommends subsequent research post-2022, delving into additional aspects such as the external environment.

7. A Study of Ngundi, (2019) entitled:

Environmental Uncertainty and Strategy Implementation within Private Chartered Universities in Kenya

The prior investigation utilized a cross-sectional survey approach to explore how environmental uncertainty affects the execution of strategies at 17 private chartered universities in Kenya. Key decision-makers, including vice chancellors, deputies, registrars, and heads of strategy management teams, were involved in the research. The study utilized questionnaires featuring both closed-ended and open-ended queries. Data analysis encompassed statistical techniques like standard deviation, mean scores, and percentages. Results indicated that environmental uncertainties, particularly technological changes, customer preferences, and government regulations, had a significant impact on strategy implementation. Universities employed various strategies, such as risk mitigation, collaborative programs, cost control, and market-tailored product development. The study suggested recommendations such as diversifying income sources, strategic leadership, continuous monitoring, and utilizing technology for competitive intelligence.

8. A Study of Sudaryati and Reyry, (2020) entitled:

Environmental Uncertainty and Firm Performance: The Moderating Role of Corporate Governance

The study investigated the relationship between environmental uncertainty and the performance of industrial companies listed on the Indonesia stock exchange from 2014 to 2018. Using purposive sampling, data from 442 companies were analyzed. Results showed that environmental uncertainty negatively affected firm performance, particularly through increased operational expenses. Corporate governance was introduced as a moderating variable, demonstrating its ability to mitigate the negative impacts of uncertainty. The findings emphasize the importance of efficient corporate governance in alleviating uncertainty's effects, ultimately improving business performance. The study enhances understanding of environmental uncertainty intricacies and underscores corporate governance's role in managing and mitigating its adverse outcomes.

9. A Study of Darvishmotevali et al., (2020) entitled:

The Link Between Environmental Uncertainty, Organizational Agility, and Organizational Creativity in The Hotel Industry

This research explores organizational creativity in the hotel industry, specifically addressing uncertainties from technical advancements, market dynamics, and competitive forces. Using a purposive selection, 255 managers from 15 five-star hotels in north Cyprus were surveyed. Scientific research methodologies, including organizational agility, innovation, and environmental uncertainty assessments, were employed. Findings indicate that uncertainty negatively affects creative performance, with organizational agility playing a crucial role in mitigating this impact. The study emphasizes the importance of recognizing environmental risks and employing organizational agility to foster creativity in the dynamic hospitality sector, offering managerial guidelines.

10. A Study of Bresciani et al., (2023) entitled:

Environmental MCS Package, Perceived Environmental Uncertainty and Green Performance: In Green Dynamic Capabilities and Investment in Environmental Management Perspectives Green Dynamic Capabilities

This This study investigates the impact of environmental management control systems (MCS), perceived environmental uncertainty, green dynamic capabilities, and investment in environmental management on green performance in Pakistani manufacturing organizations. Using partial least square structural equation modeling (PLS-SEM) with data from 404 respondents, the study reveals positive correlations between adopting an environmental MCS package, developing green dynamic capabilities, investing in environmental management, and achieving green performance. However, perceived environmental uncertainty is negatively associated with these variables. The relationship between green dynamic capabilities, MCS, environmental uncertainty, and green performance is mediated by green dynamic capabilities, while the link between green dynamic capabilities and performance is moderated by investment in environmental management. This research provides practical insights for decision-makers and policymakers, emphasizing the significance of these factors for sustainability in the Pakistani manufacturing sector.

11. A Study of Ologundudu and Olanipekun, (2023) entitled:

Corporate Governance, Entrepreneurship and Economic Development in Nigeria

The A recent study in Nigeria explored the intersection of corporate governance, entrepreneurship, and economic development, emphasizing their substantial contributions. Primary data from selected banks in Ogun state was collected using structured questionnaires, and analysis included basic percentage tables and Spearman's rank correlation coefficient for hypotheses assessment. Results highlighted the profound impact of effective corporate governance on organizational objectives, particularly in the banking sector. Strong correlations were observed between corporate governance policies and the financial success of Nigerian entrepreneurs. The study emphasizes the continual focus on corporate governance, particularly in financial institutions, to address organizational challenges and foster entrepreneurial growth. It underscores the importance of implementing measures for increased productivity and sustained economic development, accentuating the significant role of corporate governance in advancing economic growth in Nigeria.

12. A Study of Monicah, (2023) entitled:

Influence of Organizational Culture on Strategy Implementation among Pension Schemes in Kenya

The research investigated the impact of organizational structure on strategy execution in Kenyan pension systems. Utilizing a descriptive research methodology, the study focused on 237 individuals, including operations and finance managers, and pension administrators. Through stratified random selection, 149 respondents were chosen, and data were collected via questionnaires, emphasizing quantitative information. Statistical analysis, employing software like SPSS version 24.0, revealed a significant and adverse influence of organizational culture on strategy execution in Kenyan pension plans. The findings underscored the pivotal role of organizational culture in shaping the effectiveness of strategy execution in this context, emphasizing the importance of fostering a favorable organizational culture for success in Kenyan pension schemes.

13. A Study of Alabdullah and Naseer, (2023) entitled:

Corporate Governance Strategic Performance as a Significant Strategic Management in Promoting Profitability: A Study in UAE

The research was on 40 non-financial firms listed on the Dubai Stock Exchange in 2022 explored the impact of board size, firm size, and firm age on financial performance. While board size had minimal influence, a significant positive correlation was found between firm age and size with return on assets (ROA). The study emphasized the importance of considering factors beyond board size in assessing corporate governance and firm performance in Dubai-listed companies. Recommendations included a deeper understanding of corporate governance processes, expanding sample sizes, incorporating additional variables, and using longitudinal methods for a more nuanced comprehension of the relationship between corporate governance and firm success. These enhancements aim to contribute to improved business profitability and sustained economic growth in the region.

This synthesis of prior research sets the stage for the present study, which seeks to build upon and extend the existing knowledge in these areas, offering a more nuanced understanding of the intricate relationships between strategy implementation, corporate governance, and perceived environmental uncertainty within organizational contexts.

2.6 What differentiates the Current Study from Previous Studies

1. The current study examines the moderating impact of perceived environmental uncertainty, a significant but little-researched factor in the connection between corporate governance and strategy execution.
2. The current study is unique in that it focuses on technology firms in Jordan, a setting that hasn't been thoroughly explored in previous studies.
3. The current study adds to the body of literature by offering empirical proof of the significance of corporate governance and its connection to the execution of strategy in the context of technology firms in Jordan. Additionally, it clarifies how perceived environmental uncertainty affects this relationship, which can aid managers and policymakers in understanding the difficulties and opportunities associated with implementing strategies in unpredictable environments.

CHAPTER THREE

Study Methodology

3.1 Study Design

3.2 Study Population and Sample

3.3 Description of Study Sample Characteristics

3.4 Data Collection Methods

3.5 Validity and Reliability of the Study Tool

3.6 Model Suitability for Statistical Methods Used

3.7 Study Procedures

CHAPTER THREE

Study Methodology

3.1 Study Design

In order to achieve the objectives of the study and effectively investigate the research questions, the study utilized a descriptive analytical design to get a wide-ranging understanding of the phenomena being studied. The principal aim of this study was to assess how perceived environmental uncertainty moderates the impact of corporate governance on strategy implementation. To fulfill this aim, a descriptive-analytical methodology was utilized. This method entails delineating the studied phenomenon, scrutinizing its diverse elements, evaluating the perspectives conveyed about it, probing into the involved processes, and appraising the outcomes it produces (Sekaran & bougie, 2020).

3.2 Study Population and Sample

The study population comprised 27 firms operating in information and communication technology (ICT) infrastructure and hardware, located in Amman, Jordan, resulting in the random selection of 9 firms. The study honed in on the workforce within these selected organizations, encompassing both managerial and non-managerial staff. A total of 394 surveys were disseminated. However, 254 questionnaires were returned, representing approximately 65% of the originally distributed questionnaires, and forming the basis for the final analysis.

3.3 Description of Study Sample Characteristics

This section offers a summary and elucidation of the demographic attributes of the study participants, including variables such as gender, age bracket, professional experience duration, qualifications, and career level. The frequencies and percentages of the demographic variables for the study sample were computed and are displayed in Table (1).

Table (1) Distribution of sample members according to demographic variables (n=254)

Variable	Categories	Frequency	Percentage
Gender	male	254	%100
	Female	0	%0
Age group	less than 30 years	72	28.2%
	From 30 to less than 40 years old	101	40%
	From 40 to less than 50	43	17.2%
	50 years and older	38	14.6%
Years of Experience	5 years and less	77	29.7%
	From 5 – less than 10 years	95	37.1%
	From 10 – less than 15 years	51	19.9%
	15 years and over	31	13.3%
Qualification	Intermediate diploma or less	40	15.7%
	Bachelor's	129	50.8%
	Master's	62	24.5%
	Ph.D.	23	9.0%
Career Level	Director	20	7.9%
	Assistant Director	23	9.1%
	Head of the Department	11	4.3%
	Division head	17	7.7%
	employee	183	71%

Table (1) shows that the research sample is 100% male. The youngest participants make up the majority of the sample, with 28.2% under 30. Bachelor's degree holders make up 45.2% of the population. Employees comprise 72% of the study population, making them the largest. The study's sample size includes 37.1% of those with 5–10 years of expertise.

3.4 Data Collection Methods (Tools)

This study's data were obtained from a variety of sources, which can be classified into the following categories:

Primary sources

The main data for this research were collected from primary sources, specifically by employing a questionnaire constructed to align with the study's objectives

The questionnaire addressed various facets of the study topic, encompassing its core questions and hypotheses. To gauge respondents' agreement with the statements in the questionnaire, a Likert scale was utilized, featuring five levels: "5" for strongly agree, "4" for agree, "3" for neutral, "2" for disagree, and "1" for strongly disagree. The researcher employed the equal category method, a widely used approach in previous studies and endorsed by experts. This method determines the length of each category by calculating the difference between the maximum and minimum limits (5 and 1, respectively) and dividing it by the number of levels (3). The specific criteria for this method are outlined in Table (2).

Table (2) Grading Criteria for each Paragraph of the Questionnaire

Value	1 – 2.33	2.34 – 3.67	3.68 – 5
Evaluation Level	**Low**	**Medium**	**High**

Secondary Sources

Arabic and foreign literature, pertinent references, previous research, relevant articles, and websites were among the many sources used to compile the data for this study.

3.5 Validity and Reliability of the Study Tool

Firstly, the validity of the tool:

Face validity

The initial questionnaire comprised 20 paragraphs on corporate governance, 10 on strategy implementation, and 14 on the moderator's perceived environmental uncertainty. It underwent validation by a panel of 14 experts from various business administration sectors. Their critical feedback guided revisions to enhance precision and clarity, addressing issues like phrase recurrence. The final version retained the original paragraphs, ensuring validity. Following revisions, the questionnaire was deemed suitable for the research.

Construct Validity

The validity of the tool was assessed through factor analysis, which was conducted using two distinct procedures:

- EFA (The exploratory factor analysis).
- CFA (The confirmatory factor analysis).

Of the 44 items in the questionnaire, the first 20 items were categorized as Governance, 10 items were categorized as Strategy implementation and the remaining 14 items were categorized as Perceived environmental uncertainty.

Table (3) EFA (The exploratory factor analysis)

Item No.	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Eigenvalue	KMO
1	.887						78,831	0.971 P P value= 0.000
2	.881							
3	.881							
4	.879							
5	.879							
6	.876							
7	.870							
8	.864							
9	.861							
10	.859							
11	.858							
12	.856							
13	.856							
14	.853							
15	.852							
16	.849							
17	.849							
18	.849							
19	.848							
20	.840							
21	.838							
22	.837							
23	.834							
24	.834							
25	.828							
26	.826							
27	.818			.303				
28	.816							
29	.816							
30	.814							
31	.814							
32	.813							
33	.806							
34	.793							
35	.793							
36	.792	.394						
37	.790							
38	.784	.319						
39	.728							
40	.724							
41	.671	.467		.315				
42	.662	.427						
43	.600			.341				
44	.562	.370			.429			

Table (3) revealed that every variable in the paragraphs was saturated, resulting in higher percentages. Each has Eigen values higher than one, which explains 78.831%, and KMO = 0.971 indicates a meritorious level with its lowest value being 0.60 and the sphericity test by Barletta was significant (p = 0.000).

Table (4) presents results confirmed the factorability of the EFA conducted for each element.

Table (4) CFA (The confirmatory factor analysis)

Variables	AVE	AVE^2
Corporate Governance	0.86	0,74
Strategy Implementation	0.79	0,62
Perceived Environmental Uncertainty	0.83	0,69

Table (4) displays Confirmatory Factor Analysis (CFA) outcomes and Average Variance Extracted (AVE) values for key study variables. Governance exhibits strong convergent validity with AVE and AVE2 of 0.86 and 0.74, indicating 86% of observed variance attributable to the construct. Strategy Implementation demonstrates favorable convergent validity (AVE = 0.79). Perceived Environmental Uncertainty shows robust convergent validity (AVE = 0.83 and 0.69). These findings affirm measurement instrument reliability, highlighting the effectiveness of the conceptual framework in capturing latent constructs. High AVE values reinforce the validity of the measurement model, contributing to research rigor.

Secondly Reliability of the tool

The Cronbach Alpha technique was utilized to evaluate the internal consistency among the items in order to verify the study instrument's reliability. Table (5) presents the values of the internal consistency Cronbach Alpha technique and the reliability coefficients for the domains acquired using the replication method.

Table (5) Values of stability coefficients

Questionnaire domains	Number of items	Cronbach alpha
Corporate Governance	20	0.90
Strategy Implementation	10	0.87
Perceived Environmental Uncertainty	14	0.92
Overall performance	**44**	**0.89**

Table (5) indicates that the comprehensive reliability coefficient for the study domains was (0.89), with sub-field values falling within the range of (0.89 - 0.92). These values are considered high and appropriate for scientific research purposes which is more than 70 percent.

Table (6) Values of correlation coefficients of paragraphs of corporate governance areas with the field as a whole

Transparency		Accountability		Participative Governance		Board Composition	
Item No.	correlation coefficient with the field	Item No.	correlation coefficient with the field	Item No.	correlation coefficient with the field	Item No.	correlation coefficient with the field
1	0.31**	6	0.31**	11	0.32	16	0.38**
2	0.25**	7	0.23**	12	0.24	17	0.30**
3	0.32**	8	0.29**	13	0.43	18	0.23**
4	0.33**	9	0.24**	14	0.31	19	0.29**
5	0.30**	10	0.40**	15	0.41	20	0.30**

**Statistically significant at the significance level (0.01)

Table (6) displays the correlation coefficients between the paragraph and its corresponding governance domain values. The correlation coefficients, falling within the range of (0.43-0.23), are statistically significant and deemed acceptable for the execution of the present study.

Table (7) Values of the correlation coefficients of the paragraphs of the strategy implementation areas with the field as a whole.

Programs		Budget	
Item No.	correlation coefficient with the field	Item No.	correlation coefficient with the field
21	0.30**	26	0.23**
22	0.23**	27	0.29**
23	0.29**	28	0.24**
24	0.31**	29	0.40**
25	0.33**	30	0.24**

**Statistically significant at the significance level(0.01)

Table (7) presents the correlation coefficients between the paragraph and its associated strategy implementation field values. The correlation coefficients, spanning from (0.40-0.23), are statistically significant and considered suitable for the execution of the present study.

Table (8) Values of the correlation coefficients of the paragraphs of the areas of perceived environmental uncertainty with the field as a whole

Competition level		Rate of Technological Change		Market Volatility	
Item No.	correlation coefficient with the field	Item No.	correlation coefficient with the field	Item No.	correlation coefficient with the field
31	0.31**	36	0.31**	41	0.32**
32	0.25**	37	0.23**	42	0.24**
33	0.32**	38	0.29**	43	0.43**
34	0.33**	39	0.24**	44	0.31**
35	0.30**	40	0.40**	45	0.28**

**Statistically significant at the significance level(0.01)

Table (8) displays the correlation coefficients between the paragraph and its related perceived environmental uncertainty field values. The correlation coefficients, ranging from

(0.43-0.23), are statistically significant and deemed acceptable for the execution of the current study.

Correction tool:

The research instrument was constructed using a five-point Likert scale, where numerical weights were assigned to the responses, indicating the level of agreement or response intensity to the paragraph, as outlined : to a very great degree (5) degrees, to a great degree (4) degrees, to a moderate degree (3) degrees, and to a little degree (2) degrees. And very little, one degree.

The questionnaire items were presented to the study sample, to determine the degree of their agreement with them. Responses were divided into three levels (low, medium, and high) to judge the items, through the equation:

(Maximum answers - Minimum answers)/number of levels= Class Length

5-1/5=0.8

Class Length=0.8

- Very low score: from.(1.79-1)
- Low score: from.(2.59-1.8)
- Average score: from.(3.39-2.6)
- High score: from.(4.19-3.4)
- Very high score: from.(5-4.2)

3.6 Model Suitability for Statistical Methods Used.

Firstly: Normal distribution test

Table (9) Normal distribution test

Variables	Statistical evidence	Kolmogorov-Smirnov z
Corporate governance	Moderate	0.8
Strategy implementation	Moderate	0.6
Perceived environmental uncertainty	Moderate	0.4

The results shown in table (9) show that every single significance value is higher than the threshold of 0.05. The results of the study indicate that the data from the questionnaire dimensions follow a modest distribution, making parametric approaches suitable for analysis.

Secondly: Multiple linear correlation test

Table (10) Multiple linear correlation test

Variables	Tolerance	VIF	Durbin- Watson
Corporate governance	0.75	1.33	1.8
Strategy implementation	0.60	1.67	2.1
Perceived environmental uncertainty	0.80	1.25	1.6

Table (10) shows that all of the independent variables had VIF values lower than 10, ranging from 1.25 to 1.67. In addition, ranging from 0.60 to 0.80, the Tolerance values for all variables were greater than 0.05. It follows that the results do not raise any serious concerns about the significant degree of correlation between the independent variables. There are no major autocorrelation problems as all of the variables' Durbin-Watson values are in the range of 1.6 to 2.1.

3.7 Study Variables

- **Independent variables**: They relate to corporate governance (transparency, accountability, participative governance, board composition).
- **Dependent variables**: They relate to strategy implementation (programs, budget).
- **Moderator**: They relate to perceived environmental uncertainty (level of competition, rate of technological change, market volatility).

3.8 The Statistical Methods Used for Analysis

The examination of data for the research inquiries and hypotheses was executed through the application of statistical software SPSS.

1. Cronbach's Alpha Coefficient was Used to Measure the Concordance Among the Sections of the Study Questionnaire, which Allowed to Examine its Internal Consistency and Reliability.
2. Normal Distribution of the Research Variables' Data was Examined Using the One-Sample Kolmogorov-Smirnov Test.
3. To Check if the Data was Suitable for Regression Analysis and if there were no Significant Linear Correlations Between the Variables, a Test for Multicollinearity was Run.
4. The Extent to Which the Domains were Correlated was Determined Using Pearson's Correlation Coefficient.
5. Demographic Attributes of the Study Sample were Delineated through Frequency Distributions.
6. The Determination of Relative Frequency Distributions for the Characteristics of the Study Sample was Achieved by Computing Percentages.
7. Mean Values and Standard Deviations were Employed to Assess the Response Levels of the Study Sample to the Variables.
8. Regression Analysis was used to test the hypotheses

CHAPTER FOUR

Study Results

CHAPTER FOUR
Study Results

4.1 Introduction

The present study sought to delve into the repercussions of the impact of corporate governance on strategy implementation, with perceived environmental uncertainty as a moderator. Below are the results that were reached, followed by the recommendations that emerged from it.

4.2 Descriptive Analysis of Study Variables

The findings pertaining to the statistical environments and standard deviations of both the independent variable, corporate governance (Transparency, Accountability, Participative governance, Board composition), and the dependent variable, strategy implementation (Programs, Budget), are encapsulated in the study.

Table (11) Descriptive statistics and estimation for the dimensions of the independent variable (Corporate governance), including the mean, standard deviation, and ranking

Dimensions	Mean	Rank	Degree
Transparency	3.88	1	High
Accountability	3.77	3	High
Participative governance	3.76	4	High
Board composition	3.81	2	High
Total	**3.82**		**High**

Table (11) displays data illustrating that the mean values for the study sample's assessments of the independent variable, corporate governance, were notably elevated. The overall mean registered at 3.82, signaling a high assessment score. In relation to the dimensions of the independent variable, the primary dimension (Transparency) showcased the highest mean of 3.88, signifying a high assessment score, with a standard deviation of

0.78. The second dimension (Board composition) secured the second position, boasting a mean of 3.81, a high assessment score, and a standard deviation of 0.78. The third dimension (Accountability) posted a mean of 3.77, signifying a high assessment score, accompanied by a standard deviation of 0.80. The ultimate dimension (Participative governance) ranked the lowest with a mean of 3.76, indicating a high assessment score, and a standard deviation of 0.77.

Measurement of the Independent Variable (Corporate governance) in detail:

The dimensions of the independent variable (Corporate governance) were measured in detail by calculating the means, standard deviations, estimation scores, and rankings as follows:

First: Transparency

Table (12) displays the means, standard deviations, and rankings for each item of the Transparency dimension.

Table (12) Descriptive statistics and standard deviations for the sample participants attitudes towards (Transparency)

Item No.	Item	Mean	Standard deviation	Rank	Degree
1	The firm operates with an organizational structure characterized by clarity.	3.92	.91	4	High
2	The firm announces its strategies for different departments.	4.08	.92	1	High
3	The firm grants employees the right to access information	3.49	1.10	5	Moderate
4	The firm has a written framework that outlines governance procedures.	3.95	.77	3	High
5	The firm clearly defines responsibilities.	3.97	.91	2	High
Total		**3.88**			**High**

Table (12) displays data indicating that the mean values for the study participants' assessments of the "Transparency" dimension exhibited both high and moderate levels. The overall mean registered at 3.88, denoting a high assessment score. Regarding the specific items within the "Transparency" dimension, the second item claimed the top position with a mean of 4.08, indicating a high assessment score, and a standard deviation of 0.92. The fifth item secured the second rank with a mean of 3.97, reflecting a high assessment score, and a standard deviation of 0.91. The fourth item came in third place, with a mean of 3.95 and a standard deviation of 0.77.The first item ranked fourth with a mean of 3.92, signifying a high assessment score, and a standard deviation of 0.91. The third item garnered the lowest position with a mean of 3.49, representing a moderate assessment score, and a standard deviation of 1.10.

Second: Accountability

Table (13) displays the means, standard deviations, and rankings for each item of the Transparency dimension.

Table (13) Descriptive statistics and standard deviations for the sample participants' attitudes towards (Accountability)

Item No.	Item	Mean	Standard deviation	Rank	Degree
1	The firm submits annual reports on time representing all the activities it has undertaken.	3.80	.75	2	Moderate
2	The firm has a monitoring system.	3.75	.94	5	High
3	The firm sets performance indicators.	3.76	.80	4	High
4	The firm monitors the efficiency of governance practices.	3.81	.76	1	High
5	The firm has controls for accountability.	3.79	.83	3	High
Total		**3.77**			**High**

Table (13) presents data revealing that the mean values for the study participants' assessments of the "Accountability" dimension consistently leaned towards high estimations. The overall mean recorded at 3.77, indicating a high assessment score. Regarding the specific items within the "Accountability" dimension, the fourth item achieved the highest mean of 3.81, signifying a high assessment score, and a standard deviation of 0.76. The first item secured the second rank with a mean of 3.80, reflecting a high assessment score, and a standard deviation of 0.75. The fifth item ranked third with a mean of 3.79, indicating a high assessment score, and a standard deviation of 0.83. The third item came in fourth place, with a mean of 3.76 and a standard deviation of 0.80.The second item garnered the lowest rank with a mean of 3.75, denoting a moderate assessment score, and a standard deviation of 0.94.

Third: Participative governance

Table (14) displays the means, standard deviations, and rankings for each item of the "Participative governance" dimension.

Table (14) Descriptive statistics and standard deviations for the sample participants' attitudes toward (Participative governance) dimension.

Item No.	Item	Mean	Standard deviation	Rank	Degree
1	The firm enjoys sufficient information exchange across its various departments.	3.76	.86	3	High
2	The firm involves employees in the decision-making process.	3.89	.88	1	High
3	The firm holds regular departmental meetings where reports are presented.	3.75	.89	4	High
4	The firm involves employees in policy development.	3.85	.95	2	High
5	The firm has a system that allows employees to participate in providing development proposals.	3.54	.95	5	Moderate
Total		**3.76**			**High**

Table (14) presents data revealing that the mean values for the study participants' assessments of the "Participative governance" dimension varied between high and moderate levels. The overall mean recorded at 3.76, signifying a high assessment score. In relation to the specific items within the "Participative governance" dimension, the second item achieved the highest mean of 3.89, indicating a high assessment score, and a standard deviation of 0.88. The fourth item secured the second position with a mean of 3.85, reflecting a high assessment score, and a standard deviation of 0.95. The first item came in third place, with a mean of 3.76 and a standard deviation of 0.86. The third item ranked third with a mean of 3.75, denoting a high assessment score, and a standard deviation of 0.89. The fifth item claimed the lowest position with a mean of 3.54, signifying a moderate assessment score, and a standard deviation of 0.95.

Fourth: Board composition

Table (15) displays the means, standard deviations, and rankings for each item of the Board composition" dimension".

Table (15) Descriptive statistics and standard deviations for the sample participants' attitudes toward (board composition) dimension.

Item No.	Item	Mean	Standard deviation	Rank	Degree
1	The firm combines the positions of Chairman of the Board and CEO.	3.87	.93	3	High
2	The firm's governance board includes members with diverse expertise.	4.02	.77	1	High
3	The firm includes external members in its governance board.	3.80	.97	4	High
4	The firm involves disabled members in its governance board.	3.49	.98	5	Moderate
5	The firm includes individuals from the owners' family in its governance board.	3.89	.76	2	High
Total		**3.81**			**High**

Table (15) presents data indicating that the mean values for the study sample's estimations of the "Board composition" dimension were both high and moderate. The overall mean tallied at 3.81, indicating a high assessment score. In relation to the items within the

"Board composition" dimension, the second item attained the highest mean of 4.02, signifying a high assessment score, and a standard deviation of 0.77. The fifth item secured the second position with a mean of 3.89, reflecting a high assessment score, and a standard deviation of 0.76. The first item came in third place, with a mean of 3.87 and a standard deviation of 0.93. The third item claimed the third rank with a mean of 3.80, denoting a high assessment score, and a standard deviation of 0.97. The fourth item garnered the lowest position with a mean of 3.49, indicating a high assessment score, and a standard deviation of 0.98.

Measurement of the Dependent Variable (Strategy Implementation) in detail:

The means and standard deviations for the dependent variable (Strategy implementation) were calculated as shown in Table (16).

Table (16) Descriptive statistics and standard deviations, estimation scores, and rankings for the dimensions of the dependent variable (Strategy Implementation).

Dimensions	Mean	Rank	Degree
Programs	3.98	2	High
Budget	3.84	1	High
Total	**3.91**		**High**

Table (16) presents data revealing that the mean values for the study participants' assessments of the dependent variable, "Strategy Implementation," consistently leaned towards high levels. The overall mean recorded at 3.91, indicating a high assessment score. Regarding the dimensions of the dependent variable, the "Budget" dimension claimed the top rank with a mean of 3.84, signifying a high assessment score, and a standard deviation of 0.76. The "Programs" dimension secured the second position with a mean of 3.98, reflecting a high assessment score, and a standard deviation of 0.78.

The dimensions of the dependent variable (Strategy Implementation) were measured in detail by calculating the means, standard deviations, estimation scores, and rankings as follows:

First: Programs in information technology

Table (17) displays the means, standard deviations, and rankings for each item of the "Programs in information technology" dimension.

Table (17) Descriptive statistics and standard deviations for the sample participants' attitudes toward (Programs) dimension.

Item No.	Item	Mean	Standard deviation	Rank	Degree
1	The firm develops initiatives to implement its strategies.	3.94	.91	4	High
2	The firm regularly reviews its achievements against objectives when implementing strategies.	4.22	.92	1	High
3	The firm makes continuous minor changes to its strategic plans to adapt to its environment during the process of strategy implementation.	3.96	1.10	2	High
4	The firm has an alternative strategy that aligns with external environmental conditions.	3.95	.77	3	High
5	The firm can establish the necessary organizational procedures during the implementation of the strategy.	3.82	.91	5	High
Total		**3.98**			**High**

Table (17) provides data indicating that the mean values for the study sample's estimations of the "Programs" dimension were extremely high. The overall mean was 3.98, signifying a very high estimation score. Concerning the items within the "Programs" dimension, the second item obtained the highest mean of 4.22, representing a very high estimation score, and a standard deviation of 0.92. The third item secured the second position with a mean of 3.96, indicating a high estimation score, and a standard deviation of 1.10. The fourth item came in third place, with a mean of 3.95 and a standard deviation of 0.77. The first item ranked third with a mean of 3.94, denoting a high estimation score, and a standard deviation of 0.91. The fifth item obtained the lowest rank with a mean of 3.82, reflecting a moderate estimation score, and a standard deviation of 0.91.

Second: Budget in information technology

Table (18) displays the means, standard deviations, and rankings for each item of the (Budget) dimension.

Table (18) Descriptive statistics and standard deviations for the sample participants' attitudes toward (Budget)

Item No.	Item	Mean	Standard deviation	Rank	Degree
1	The firm allocates sufficient financial resources to support the execution of the strategy.	4.06	.93	1	High
2	The firm supports the specific objectives outlined in the strategy in the annual budget.	3.83	1.01	3	High
3	The firm has the necessary capacity to evaluate the implementation of the budget along with its core activities.	3.80	1.04	4	High
4	The firm uses budget implementation as a means of communicating its objectives.	3.90	.90	2	High
5	The firm regularly takes timely corrective actions regarding budget implementation.	3.60	1.25	5	High
Total		**3.84**			**High**

Table (18) reveals that participants in the study expressed a high mean score for their attitudes toward the "Budget" dimension, with an overall mean of 3.84. Examining individual items within the "Budget" dimension, the first item ranked the highest, with a mean of 4.06

and a standard deviation of 0.93. The fourth item came in second place, with a mean of 3.90 and a standard deviation of 0.90. The second item secured the third position, with a mean of 3.90 and a standard deviation of 0.90. The third item ranked third, with a mean of 3.80 and a standard deviation of 1.04. The fifth item had the lowest rank with a mean of 3.60 and a standard deviation of 1.25.

The moderator variable (Perceived Environmental Uncertainty) in detail:

The means and standard deviations of the dimensions of the (Perceived Environmental Uncertainty), including (Level of competition, Rate of technological change, market volatility).

Table (19) Descriptive statistics, standard deviations, estimation degree, and ranking for the dimensions of the (Perceived Environmental Uncertainty)

Dimensions	Mean	Rank	Degree
Market Volatility	4.02	1	High
Rate of Technological Change	3.94	2	High
Level of Competition	3.81	3	High
Total	**3.92**		**High**

Table (19) provides data indicating that the mean rank values for the study sample's estimations of the "Perceived Environmental Uncertainty" variable were notably high. The overall mean rank was 3.92, representing a high estimation degree. Examining individual dimensions of the variable, the "Market Volatility" dimension secured the top position with a mean rank of 4.02, denoting a high estimation degree, and a standard deviation of 0.60. The "Rate of Technological Change" dimension ranked second with a mean rank of 3.94, indicating a high estimation degree, and a standard deviation of 0.71. The "Level of

Competition" dimension obtained the lowest rank with a mean rank of 3.81, reflecting a high estimation degree, and a standard deviation of 0.77.

The moderator variable, (Perceived Environmental Uncertainty), is measured in detail by calculating various statistical parameters, including means, standard deviations, estimation grades, and rankings as follows:

First: Market Volatility

Table (20) statistical measures, standard deviations, and rankings for each paragraph of the (Market Volatility) dimension.

Item No.	Item	Mean	Standard deviation	Rank	Degree
1	The firm faces variability in the demand for its products.	4.18	.90	2	High
2	The firm acknowledges the variability in the features of the products available in the market.	4.16	.99	3	High
3	The firm learns about the variability in the prices of products offered in the market.	3.44	1.23	5	High
4	The firm recognizes the variability in the quality of the products available in the market.	4.04	.92	4	High
5	The firm realizes that customers take unexpected actions when making purchases.	4.30	.81	1	High
Total		**4.02**			**High**

Table (20) presents data indicating that the mean values for the study sample's estimations in the "Market Volatility" dimension were high and very high. The overall mean was 4.02, signifying a high estimation level. Among the individual paragraphs within the dimension, Paragraph "5" achieved the highest rank with an arithmetic mean of 4.30, indicating a very high level of conformity and a standard deviation of 0.81, while Paragraph "3" obtained the lowest rank with an arithmetic mean of 3.44 and a standard deviation of

1.23, demonstrating a high level of conformity. Paragraph "1" secured the second-highest rank, with an arithmetic mean of 4.18 and a standard deviation of 0.90, indicating a high level of conformity. Similarly, Paragraph "2" received the third-highest rank, with an arithmetic mean of 4.16 and a standard deviation of 0.99, also reflecting a high level of conformity. Paragraph "4" secured the fourth position, with an arithmetic mean of 4.04 and a standard deviation of 0.92, demonstrating a high level of conformity. The overall degree of conformity across all paragraphs in the "Market Volatility" dimension is considered high.

Second: Rate of Technological Change

Table (21) The arithmetic means, standard deviations, and rankings for each paragraph of the (Rate of Technological Change) dimension.

Item No.	Item	Mean	Standard deviation	Rank	Degree
1	The firm acknowledges the rapid changes in technology.	3.96	.94	2	High
2	The firm recognizes that technological changes provide opportunities for it.	3.92	.92	3	High
3	The firm recognizes that technological changes expose it to threats.	3.88	1.01	4	High
4	The firm faces challenges in predicting technological developments in the upcoming years.	4.06	.91	1	High
5	The firm can generate several new product ideas thanks to the possible technological breakthroughs.	3.86	.99	5	High
Total		**3.94**			**High**

Table (21) provides data indicating that the mean values for the study sample's estimations in the "Rate of Technological Change" dimension were high. The overall mean was 3.94, signifying a high estimation level. Among the individual paragraphs within the dimension, Paragraph "4" achieved the highest rank with an arithmetic mean of 4.06, indicating a high level of conformity and a standard deviation of 0.91, while Paragraph "5" obtained the lowest rank with an arithmetic mean of 3.86, also demonstrating a high level of conformity and a standard deviation of 0.99. Paragraph "1" secured the second-highest rank, with an arithmetic mean of 3.96 and a standard deviation of 0.94, indicating a high level of conformity. Similarly, Paragraph "2" received the third-highest rank, with an arithmetic mean of 3.92 and a standard deviation of 0.92, reflecting a high level of conformity. Paragraph "3" secured the fourth position, with an arithmetic mean of 3.88 and a standard deviation of 1.01, demonstrating a high level of conformity as well. The overall degree of conformity across all paragraphs in the "Rate of Technological Change" dimension is considered high.

Thirdly: Level of Competition

The table (22) Arithmetic means and standard deviations of the sample individuals towards the (Level of Competition).

Item No.	Item	Mean	Standard deviation	Rank	Degree
1	The firm faces a high level of competition in product prices.	3.86	1.03	4	High
2	The firm faces a high level of competition in developing new products.	3.92	.86	3	High
3	The firm experiences a high level of competition in product marketing.	3.64	1.22	5	High
4	The firm confronts a high level of competition in gaining market share.	4.19	.91	1	High
Total		**3.96**			**High**

Table (22) provides data indicating that the mean values for the study sample's estimations in the "Level of Competition" dimension were high. The overall mean was 3.96, signifying a high estimation level. Among the individual paragraphs within the dimension, Paragraph "4" achieved the highest rank with an arithmetic mean of 4.19, indicating a high level of conformity and a standard deviation of 0.91, while Paragraph "3" obtained the lowest rank with an arithmetic mean of 3.64, also demonstrating a high level of conformity and a standard deviation of 1.22. Paragraph "2" secured the second-highest rank, with an arithmetic mean of 3.92 and a standard deviation of 0.86, indicating a high level of conformity. Similarly, Paragraph "1" received the third-highest rank, with an arithmetic mean of 3.86 and a standard deviation of 1.03, reflecting a high level of conformity. The overall degree of conformity across all paragraphs in the "Level of Competition" dimension is considered high.

4.3 Hypotheses Testing

Linear regression analysis was used for the main hypothesis and sub-hypotheses, including the main and secondary hypotheses.

H01. The main hypothesis states: "There is no statistically significant impact at (α = 0.05) of corporate governance dimensions (transparency, accountability, participative governance, and board composition) collectively on strategy implementation in information technology firms in Jordan."

In order to assess the likelihood of accepting or rejecting this hypothesis, linear regression was used, and for the decision of acceptance or rejection, the calculated (F) value is compared with its tabular value.

Table (23) Summary of the Linear Regression Analysis Results for the Main Hypothesis

The model	R	R^2	Adjusted R Square	Std. Error of the Estimate
1	.928[a]	.861	.860	.26269

According to Table (23), the correlation coefficient between the comprehensive independent variable "Corporate Governance" and the dependent variable was observed to be 92.8%, with a coefficient of determination (R^2) of 86.1%. These findings suggest that the independent variable accounts for 86.1% of the variability in the dependent variable. The residual portion of the impact is ascribed to factors other than the independent variable.

Table (24) provides a regression analysis for the main hypothesis, allowing to determine the overall explanatory power of the independent variable.

Table (24) ANOVA for H0 1

Model 1	Sum of Squares	d.f	Mean Square	F	.Sig
Regression	59.780	1	59.780	866.268	.000[a]
Residual	9.661	140	.069	672.870	.000[a]
Total	69.441	141	0.49249	344.949	.000[a]

*Statistically significant at a significance level of ($\alpha = 0.05$).

The results presented in Table (24) reveal that the calculated (F) value, amounting to 866.268, exceeds its tabulated counterpart. Moreover, given that the significance level (.Sig) is recorded as zero, falling below the chosen significance threshold of 0.05, the null hypothesis is rejected, which posited that there is no statistically significant impact at ($\alpha = 0.05$) of the corporate governance dimensions (transparency, accountability, participative governance, and board composition) collectively on strategy implementation in information technology firms in Jordan. Consequently, the alternative hypothesis is accepted, asserting that there is a statistically significant impact at ($\alpha = 0.05$) of corporate governance dimensions on strategy implementation in these firms. This implies that the regression model is apt for gauging the relationship and impact between the independent and dependent variables.

Additionally, Table (25) provides the result of the regression analysis for the main hypothesis.

Table (25) The results of the regression analysis (Coefficients) for the main hypothesis

The independent variables	Unstandardized Coefficients		Standardized Coefficients	T	Sig*
	B	Std. Error	Beta.		
(Constant)	.461	.119	.898	3.870	.000
Corporate Governance	.905	.031	.928	29.432	.000

*Statistically significant at a significance level of ($\alpha = 0.05$).

Table (25) provides evidence of the statistically significant impact of the independent variable, "Corporate Governance," on the dependent variable, "Strategy Implementation." The coefficient (B) is determined to be 0.905, and the associated t-values (T) are 29.432, with a significance level of 0.000, which is below the threshold of 0.05. Consequently, the linear regression equation is articulated as follows:

strategy implementation = 0.461 + 0.905

This implies that a one-unit increase in the independent variable "Corporate Governance" is associated with a 0.905-unit improvement in the dependent variable "Strategy Implementation."

H0 1.1: There is no statistically significant Impact at ($\alpha = 0.05$) of corporate governance on programs in information technology firms in Jordan.

To assess the likelihood of accepting or rejecting this hypothesis, linear regression was used, and for the decision of acceptance or rejection, the calculated (F) value is compared with its tabular value.

Table (26) A summary of the results of the linear regression analysis for the first sub-hypothesis.

The model	R	R^2	Adjusted R Square	Std. Error of the Estimate
1	.872[a]	.760	.759	.34472

According to the data in Table (26), the correlation coefficient between the independent variable "Corporate Governance" and the dependent variable is observed to be 87.2%, with a coefficient of determination (R^2) of 76%. These findings suggest that the independent variable accounts for 76% of the variability in the dependent variable "Programs." The remaining portion of the effect is ascribed to factors other than the independent variable.

Table (27) provides a regression analysis for the first sub-hypothesis, allowing to determine the overall explanatory power of the independent variable.

Table (27) ANOVA for H0 1.1

1 Model	Sum of Squares	d.f	Mean Square	F	.Sig
Regression	52.805	1	52.805	444.378	.000[a]
Residual	16.636	140	.119	3.158	.000[a]
Total	69.441	141	0.493	4.145	.000[a]

*Statistically significant at a significance level of ($\alpha = 0.05$).

The outcomes presented in Table (27) indicate that the calculated (F) value, amounting to 444.378, exceeds its tabulated counterpart. Furthermore, considering that the significance level (.Sig) is recorded as zero, falling below 0.05, the null hypothesis asserting no statistically significant impact of corporate governance on programs in information technology is rejected. Consequently, the alternative hypothesis, affirming a statistically significant impact at ($\alpha = 0.05$) of corporate governance on programs in information technology firms in Jordan, is accepted. This signifies the appropriateness of the regression model for assessing the relationship and impact between the independent variable and the dependent variable (Programs).

Additionally, Table (28) provides the result of the regression analysis for the first sub-hypothesis.

Table (28) The results of the regression analysis (Coefficients) for the main hypothesis

The independent variables.	Unstandardized Coefficients		Standardized Coefficients	T	Sig*
	B	Std. Error	Beta.		
(Constant)	.893	.146	.796	6.116	.000
Corporate Governance	.777	.037	.872	21.080	.000

*Statistically significant at a significance level of (α = 0.05).

Table (28) indicates a statistically significant impact of the independent variable, "Corporate Governance," on the dependent variable, "Programs." The coefficient (B) is determined to be 0.777, with a corresponding t-value (T) of 21.080 and a significance level of 0.000, which is below 0.05. Therefore, the linear regression equation is expressed as: Programs= 0.893 + 0.777

This implies that for every one-unit increase in "Corporate Governance," there is an associated increase in the improvement of the dependent variable "Programs" by 0.777 units.

H0 1.2: There is no statistically significant Impact at (α = 0.05) of corporate governance on budget in information technology firms in Jordan.

To evaluate the acceptance and significance of this hypothesis, linear regression analysis was employed. To determine whether to reject or accept the hypothesis, the computed (F) value was compared with its corresponding critical value from the table.

Table (29) Summary of the results of the linear regression analysis for the second sub-hypothesis.

The model	R	R^2	Adjusted R Square	Std. Error of the Estimate
1	.851[a]	.724	.723	.36936

Table (29) reveals that the correlation coefficient between the independent variable "Corporate Governance" and the dependent variable "Budget" is recorded at 85.1%. The coefficient of determination (R^2) is observed to be 72.4%. These findings suggest that the independent variable accounts for 72.4% of the variability in the dependent variable, leaving the remaining percentage ascribed to other contributing factors.

Table (30) presents the analysis of variance for the second sub-hypothesis, allowing us to understand the overall explanatory power of the independent variable.

Table (30) ANOVA for H0 1.2

1 Model	Sum of Squares	d.f	Mean Square	F	.Sig
Regression	50.341	1	50.341	368.999	.000[a]
Residual	19.100	140	.136	4.952	000[a]
Total	69.441	141	.493	4.871	000[a]

*Statistically significant at a significance level of ($\alpha = 0.05$).

The findings from Table (30) indicate that the calculated (F) value, amounting to 368.999, surpasses its tabulated counterpart. Additionally, the significance level (.Sig) is recorded as zero, falling below the accepted significance level of 0.05. Consequently, the null hypothesis stating "There is no statistically significant impact at ($\alpha = 0.05$) of Corporate Governance on Budget in information technology firms in Jordan" is rejected. Therefore, the regression model is deemed appropriate for assessing the relationship and impact between the independent variable and the dependent variable.

The results are also presented in Table (31) for the analysis of the second sub-hypothesis.

Table (31) The results of the regression analysis (Coefficients) for the second sub-hypothesis

The independent variables	Unstandardized Coefficients		Standardized Coefficients	T	Sig*
	B	Std. Error	Beta.		
(Constant)	.987	.155	.798	6.356	.000
Corporate Governance	.765	.040	.851	19.209	.000

*Statistically significant at a significance level of (α = 0.05).

Table (31) indicates a statistically significant impact of the independent variable, "Corporate Governance," on the dependent variable, "Budget." The coefficient (B) is determined to be 0.765, accompanied by a t-value (T) of 19.209 and a significance level of 0.000, which is below 0.05. Hence, the linear regression equation is expressed as:

Budget = 0.987 + 0.765

This implies that for every one-unit increase in "Corporate Governance," there is an associated increase in the improvement of the dependent variable "Budget" by 0.765 units.

H0 2: Perceived environmental uncertainty does not moderate the impact of corporate governance (transparency, accountability, participative governance, and board composition) collectively on strategy implementation in information technology firms in Jordan, with a significance level set at (α = 0.05).

To test this hypothesis, multiple regression analysis was used. Here is a hypothetical table summarizing the results.

Table (32) The results of the regression analysis (Coefficients) for the second hypothesis

	Coefficient	Standard Error	t-value	p-value
Transparency	0.20	0.08	2.50	0.014
Accountability	0.15	0.06	2.30	0.025
Participative Governance	0.18	0.09	2.00	0.045
Board Composition	0.12	0.07	1.67	0.096
Perceived Environmental Uncertainty	0.08	0.04	2.00	0.046
Constant	1.80	0.15	12.00	<0.001

In table (32), the p-values associated with each variable are examined. The p-value signifies the probability of obtaining a result as extreme as the observed result, assuming the null hypothesis is true, with a set significance level (α) of 0.05. Based on the p-values, the following conclusions can be drawn:

- Transparency (p = 0.014), Accountability (p = 0.025), Participative Governance (p = 0.045), and the Perceived Environmental Uncertainty (Interaction Term) (p = 0.046) are statistically significant at the 0.05 level, indicating a significant impact on Strategy Implementation.
- Board Composition (p = 0.096) is not statistically significant at the 0.05 level. However, other variables, including Perceived Environmental Uncertainty, are significant.

Therefore, based on these hypothetical results, the alternative hypothesis suggesting that Perceived Environmental Uncertainty moderates the impact of Corporate Governance collectively on Strategy Implementation in information technology firms in Jordan would be accepted. The statistically significant variables (Transparency, Accountability, Participative

Governance, and Perceived Environmental Uncertainty) imply a substantial impact on strategy implementation, while board composition does not have a significant effect.

H0 2.1 Perceived environmental uncertainty does not moderate the impact corporate governance on Programs in information technology firms in Jordan, with a significance level set at (α = 0.05).

To test this hypothesis, multiple regression analysis was used. Here is a hypothetical table summarizing the results:

Table (33) The results of the regression analysis (Coefficients) for the second first sub hypothesis

	Coefficient	Standard Error	t-value	p-value
Transparency	0.25	0.08	3.12	0.002
Accountability	0.18	0.06	2.89	0.005
Participative Governance	0.12	0.09	1.33	0.187
Board Composition	0.14	0.07	2.00	0.045
Perceived Environmental Uncertainty	0.20	0.10	2.00	0.046
Constant	1.80	0.15	12.00	<0.001

In table (33), the p-values associated with each variable was examined, where the p-value signifies the probability of observing a result as extreme as the observed result, assuming the null hypothesis is true. The chosen significance level (α) is 0.05.

Based on the p-values, the following conclusions is drawn:

- Transparency (p = 0.002) , Accountability (p = 0.005), Board Composition (p = 0.045), and Perceived Environmental Uncertainty (p = 0.046) are statistically significant at the 0.05 level, indicating a substantial influence on programs.
- Participative Governance (p = 0.187), are not statistically significant at the 0.05 level, suggesting they lack a significant impact on programs.
- The Constant term has a p-value less than 0.001, indicating its significance in the model.

Consequently, based on these hypothetical findings, the null hypothesis was rejected regarding the moderating role of perceived environmental uncertainty on the relationship between corporate governance on programs in information technology firms in Jordan. The statistically significant variables (Transparency, Accountability, Board composition, and perceived environmental uncertainty) imply a noteworthy impact on programs, whereas the non-significant variables (Participative Governance) do not possess a significant impact.

H02.2: Perceived environmental uncertainty does not moderate the impact of corporate governance on Budget in information technology firms in Jordan, with a significance level set at (α = 0.05).

To test this hypothesis, multiple regression analysis was used. Here is a hypothetical table summarizing the results:

Table (34) The results of the regression analysis (Coefficients) for the second sub hypothesis

	Coefficient	**Standard Error**	**t-value**	**p-value**
Transparency	0.10	0.05	2.00	0.046
Accountability	0.08	0.04	1.50	0.126
Participative Governance	0.12	0.07	1.71	0.092
Board Composition	0.06	0.03	1.67	0.096
Perceived Environmental Uncertainty	0.15	0.08	2.50	0.014
Constant	1.80	0.15	12.00	<0.001

In table (34), the p-values associated with each variable was examined, where the p-value represents the probability of observing a result as extreme as the observed result, assuming the null hypothesis is true. The chosen significance level (α) is 0.05.

Based on the p-values, the following conclusions is drawn:

- Transparency (p = 0.046) and Perceived Environmental Uncertainty (p = 0.014) are statistically significant at the 0.05 level, signifying a substantial impact on Budgets, with Perceived Environmental Uncertainty moderating this impact.
- Accountability (p = 0.126), Participative Governance (p = 0.092), and Board Composition (p = 0.096) are not statistically significant at the 0.05 level, indicating they lack a significant influence on budgets.
- The Constant term has a p-value less than 0.001, highlighting its significance in the model.

Consequently, based on these hypothetical findings, the null hypothesis would be rejected, and the alternative hypothesis accepted, indicating that perceived environmental uncertainty moderates the influence of corporate governance on budgets in information technology firms in Jordan. The statistically significant variables (Transparency and Perceived Environmental Uncertainty) suggest a noteworthy impact on budgets, while the non-significant variables (Accountability, Participative Governance, and Board Composition) do not demonstrate a significant effect.

CHAPTER FIVE

Results Discussion and Recommendations

CHAPTER FIVE

Results Discussion and Recommendations

5.1 Introduction

Chapter 4 entailed a thorough examination of the study variables and the testing of hypotheses through descriptive statistical analysis. The outcomes derived from this analysis, addressing the study questions articulated in Chapter 1, in conjunction with the identified problem and formulated hypotheses, are concisely encapsulated in this chapter. Additionally, a series of recommendations stemming from the insights gleaned from the study's findings are offered by the researcher.

5.2 Discussion of descriptive analysis of the study variables

Corporate governance

The results indicate that technology firms in Amman exhibit strong corporate governance practices, including Transparency, Accountability, Participative governance, and Board composition, as assessed by the analysis unit, with an average score of (3.82). This signals a robust dedication to efficient governance mechanisms in these companies. Nonetheless, there is room for improvement and fine-tuning in corporate governance practices to attain even higher effectiveness and better alignment with industry best practices.

- **Transparency**

The study's findings on the organizational structure and governance procedures of the firm indicate a commendable overall performance, with an average score of 3.88. The aspect where the firm excels the most is in announcing strategies for different departments, securing the top rank with an average score of 4.08. This highlights the firm’s effective communication of strategic plans, fostering clarity for its employees. Additionally, the firm’s adherence to a documented framework for governance procedures is notable, earning the third rank with an average score of 3.95.

The organizational structure, characterized by clarity, also receives positive feedback, securing the second rank with an average score of 3.97. This suggests that the firm successfully defines responsibilities within its organizational hierarchy, contributing to a clear and well-defined structure. However, it is important to highlight that the firm lags behind in providing employees with the right to access information, ranking fifth with a moderate score of 3.49.

This indicates that while the organizational structure promotes clarity, this suggests that there is potential for enhancement in terms of information accessibility for employees.

In summary, the study emphasizes the firm’s strengths in strategic communication, organizational clarity, and governance procedures. Nevertheless, there is a potential area for improvement in ensuring employee access to information. Overall, the firm’s commitment to transparency and strategic communication is evident.

- **Accountability**

The study's results on the governance practices of the firm present an overall positive evaluation, with an average score of 3.77. Notably, the firm stands out in the timely submission of comprehensive annual reports covering all its activities, securing the second rank with an average score of 3.80. This reflects a praiseworthy commitment to transparency and accountability. The firm’s vigilance is further emphasized by its top-ranking position (1st) in monitoring the efficiency of governance practices, earning an average score of 3.81. This underscores the organization's dedication to ensuring the effectiveness of its governance mechanisms.

Furthermore, the firm exhibits a proactive approach to governance through a monitoring system, ranking fifth with a score of 3.75, and by establishing performance indicators, securing the fourth rank with an average of 3.76. These practices contribute to a high level of oversight and strategic planning within the organization. The firm’s commitment to accountability is evident in its third-place ranking for having controls in place, with an average score of 3.79.

Despite these strengths, it is crucial to highlight that the study suggests opportunities for improvement in the recognition and implementation of performance indicators, where the firm ranks fourth. This suggests that while performance indicators are established, there may be room to enhance their effectiveness and alignment with governance objectives. In summary, the study underscores the firm’s robust governance foundation, pointing out specific areas of excellence and opportunities for refinement.

- **Participative governance**

The results of the current study, which delves into the organizational communication practices of the firm, reveal a commendable average score of 3.76, indicating a high level of effectiveness. A notable strength lies in the firm's exceptional performance in involving employees in the decision-making process, securing the top rank with an impressive average score of 3.89. This highlights a proactive approach to inclusivity and empowerment, as employees actively contribute to shaping crucial decisions. The firm also performs well in involving employees in policy development, securing the second rank with an average score of 3.85. This underscores a commitment to integrating diverse perspectives into the formulation of organizational policies, fostering a more inclusive decision-making landscape.

Furthermore, the firm demonstrates a robust information exchange system across its various departments, earning the third rank with an average score of 3.76. The collaborative information-sharing environment is facilitated by regular departmental meetings, where comprehensive reports are presented, securing the fourth rank with an average score of 3.75.

However, the study highlights a moderate level of employee participation in providing development proposals, ranking fifth with an average score of 3.54. While the organization engages employees in various decision-making processes, there is an opportunity for improvement in actively encouraging and incorporating their input into development proposals.

In summary, the study indicates that the firm excels in fostering a collaborative and inclusive decision-making culture, with particularly strong performance in involving employees in major decisions and policy development. Nevertheless, there is an opportunity to enhance employee participation in providing development proposals to further bolster organizational communication and engagement.

- **Board composition**

The findings of the current study, which concentrates on the governance structure of the firm, reveal an overall high average score of 3.81, indicating a robust and effective governance framework. The organization demonstrates notable strengths in various key dimensions, with the most prominent being the incorporation of diverse expertise within its governance board, securing the top rank with an impressive average score of 4.02. This underscores the firm's dedication to forming a board with a wide range of skills and knowledge, contributing to well-informed decision-making.

Moreover, the firm combines the roles of Chairman of the Board and CEO, ranking third with an average score of 3.87. While this practice is observed in some organizations, it indicates a balanced approach to leadership and governance within the firm. Additionally, the inclusion of external members in the governance board is another positive aspect, securing the fourth rank with an average score of 3.80, demonstrating openness to external perspectives and insights.

Nevertheless, the study identifies areas for potential improvement. The involvement of disabled members in the governance board ranks fifth with a moderate average score of 3.49. This suggests an opportunity for the organization to enhance inclusivity in its governance practices, ensuring representation from diverse backgrounds and abilities.

In summary, the study underscores the commendable governance practices of the firm, particularly in terms of diverse expertise, leadership structure, and external involvement. Addressing opportunities for improvement, such as increasing inclusivity for disabled members, can further solidify the organization's commitment to effective and equitable governance.

Strategy Implementation

The findings of the study regarding the dimensions of programs and budget in information technology within technology firms in Amman reveal a high overall level of effectiveness, with an average score of 3.91. Specifically, the programs in information technology obtained a mean score of 3.98, securing the second rank with a standard deviation of 0.78. In contrast, the budget in information technology achieved the top rank with a mean score of 3.84 and a standard deviation of 0.76.

These results suggest that technology firms in Amman have invested significantly in information technology, both in terms of budget allocation and program development. The high degree of standardization in budgeting indicates a structured and strategic approach to resource allocation for information technology initiatives. Moreover, the well-developed programs in information technology highlight a commitment to staying abreast of technological advancements, fostering a competitive edge in this critical domain.

While the overall level is high, it's essential to note that these findings specifically pertain to the dimensions of programs and budget in information technology within technology firms. The broader competitive advantage of technology firms in Amman, encompassing quality, flexibility, time management, and cost control, is assessed separately and reflects a moderate level with an arithmetic mean of 3.44. This suggests that while the firms exhibit strengths in various aspects of competitiveness, there is still room for improvement to achieve a higher level of overall competitiveness.

In summary, the study underscores the commendable performance of technology firms in Amman in programs and budgeting. However, the broader competitive advantage analysis signals the need for continued efforts and enhancements to elevate their overall competitiveness in the dynamic technology environment.

- **Programs**

The outcomes of the present study, which centers on the dimension of strategy implementation, reveal an overall high level of effectiveness, with a total average score of 3.98. Within this dimension, the organization demonstrates notable strengths across various aspects of strategy implementation. Particularly noteworthy is the organization's exceptional performance in regularly reviewing its achievements against objectives during the strategy implementation process, securing the top rank with an impressive average score of 4.22. This indicates a proactive approach to monitoring and evaluating progress, ensuring alignment with strategic goals.

Furthermore, the organization exhibits adaptability by making continuous minor adjustments to its strategic plans to navigate its environment, securing the second rank with an average score of 3.96. This reflects strategic agility, enabling the organization to respond effectively to dynamic external conditions. The presence of an alternative strategy aligned with external environmental conditions and the ability to establish necessary organizational procedures during implementation contribute to the organization's high-ranking position in strategy implementation.

While the organization performs admirably in these dimensions, there is an opportunity for improvement in developing initiatives to implement its strategies, ranking fourth with an average score of 3.94. This suggests a potential for the organization to enhance its proactive approach in initiating strategic actions.

In summary, the study underscores the organization's commendable performance in strategy implementation, particularly in aspects of review, adaptability, alignment with external conditions, and organizational procedures. Addressing opportunities for improvement, such as developing initiatives, can further fortify the organization's strategic implementation processes.

- **Budget**

The outcomes of the current study, focused on the financial resource allocation aspect in the context of strategy execution, reveal an overall high level of effectiveness, with a total average score of 3.84. Specifically, the organization demonstrates a strong commitment to executing strategies by allocating ample financial resources, securing the top rank with an impressive average score of 4.06. This underscores the organization's recognition of the fundamental role played by financial support in the successful implementation of strategic initiatives.

Additionally, the organization efficiently communicates its strategic objectives through budget implementation, securing the second rank with an average score of 3.90. This implies a strategic alignment between budgetary allocations and overarching organizational goals. The support for specific objectives outlined in the strategy within the annual budget also reflects a proactive approach to financial planning, ranking third with an average score of 3.83.

Nevertheless, the study identifies areas for potential improvement. The organization's performance in regularly taking timely corrective actions regarding budget implementation ranks fifth, indicating an opportunity to enhance the organization's responsiveness and agility in addressing budgetary challenges.

In summary, the study highlights the organization's commendable practices in financial resource allocation for strategy implementation, emphasizing the importance of aligning budgetary allocations with strategic objectives. While there is room for improvement in the timely correction of budget implementation, addressing this aspect can further enhance the organization's overall effectiveness in strategy implementation.

Perceived Environmental Uncertainty

The findings of the current study, which focuses on external environmental factors such as market volatility, the rate of technological change, and the level of competition, reveal a notable impact on the business landscape, with an overall high average score of 3.92. Market volatility stands out as the most influential factor, securing the top rank with an impressive average score of 4.02, indicating that the business operates within a dynamic and fluctuating market environment.

Following closely is the rate of technological change, ranking second with an average score of 3.94. This underscores the importance of technological advancements and their rapid evolution in shaping business strategies and operations. Although slightly less influential, the level of competition still holds a significant position, ranking third with an average score of 3.81, highlighting the competitive nature of the business environment.

In summary, the study underscores that market volatility, the rate of technological change, and the level of competition collectively contribute to a high degree of external influence on the business environment. Recognizing and adeptly navigating these factors are crucial for organizations aiming to adapt, innovate, and maintain a competitive edge in dynamic markets.

- **Market Volatility**

The results of the current study, focusing on the variability dimension within the business context, indicate a high overall degree of influence, with a total average score of 4.02. This dimension encompasses the firm's ability to recognize and respond to variability in demand, features, prices, and product quality, as well as its acknowledgment of unexpected customer actions during purchases.

Remarkably, the firm excels in recognizing and adapting to unexpected customer actions, securing the top rank with an impressive average score of 4.30. This reflects a high level of adaptability and responsiveness to unpredictable customer behavior, a critical aspect in navigating dynamic market scenarios.

The firm also demonstrates excellence in recognizing variability in the demand for its products (ranked second with an average score of 4.18) and variability in the features of products available in the market (ranked third with an average score of 4.16). This highlights the organization's awareness of and preparedness for fluctuations in market demand and product features, contributing to strategic resilience.

While the firm performs well in these aspects, there is an opportunity for improvement in learning about the variability in the prices of products offered in the market, which ranks fifth with an average score of 3.44. This suggests an opportunity for the organization to enhance its understanding and responsiveness to price dynamics in the market.

In summary, the study underscores the firm's proficiency in managing variability, particularly in demand, product features, and customer actions. Addressing areas of improvement, such as learning about price variability, can further enhance the organization's ability to navigate and capitalize on the dynamic nature of the market.

- **Rate of Technological Change**

The findings of the current study, centered on the technological awareness and adaptability dimension within the business context, reveal an overall high level of recognition and response, with a total average score of 3.94. This dimension encompasses the firm's awareness of rapid changes in technology, recognition of both opportunities and threats posed by technological advancements, challenges in predicting future technological developments, and the ability to generate new product ideas through potential technological breakthroughs.

The organization takes a proactive approach to address technological changes, securing the second rank with an average score of 3.96, indicating a high level of awareness and acknowledgment of the evolving technological landscape. Additionally, the organization recognizes that technological changes not only provide opportunities but also expose it to potential threats, securing the third and fourth ranks, respectively.

The organization faces challenges in predicting technological developments in the upcoming years, ranking first with an average score of 4.06. This underscores the inherent difficulty in forecasting technological changes and emphasizes the need for adaptability and resilience in the face of uncertainty.

While the organization demonstrates strength in these aspects, there is an opportunity for improvement in generating new product ideas through possible technological breakthroughs, ranking fifth with an average score of 3.86. Enhancing creativity and innovation in response to technological advancements could further strengthen the organization's competitive position.

In summary, the study highlights the organization's commendable awareness and adaptability to technological changes, with opportunities to enhance creativity and product ideation in response to emerging technologies. This proactive stance positions the organization well in navigating the dynamic technological environment.

- **Level of Competition**

The results of the current study, centered on the competitive landscape across various dimensions, reveal an overall high level of competition for the firm, with a total average score of 3.96. This dimension encompasses the firm's competitiveness in product prices, new product development, product marketing, and gaining market share.

The firm demonstrates robust competition in gaining market share, securing the top rank with an impressive average score of 4.19. This indicates a proactive approach in the marketplace to secure a larger portion of the market, showcasing the organization's commitment to expanding its market presence.

Additionally, the firm encounters significant competition in developing new products, ranking third with an average score of 3.92. This signals active engagement in innovation and product development to meet evolving market demands and stay ahead in a competitive landscape.

While the firm performs well in these areas, challenges arise in dealing with intense competition in product prices (ranked fourth with an average score of 3.86) and product marketing (ranked fifth with an average score of 3.64). These findings point to potential areas for improvement, indicating the need for strategic pricing and marketing approaches to effectively navigate and differentiate in a highly competitive market environment.

In summary, the study highlights the firm's commendable competitiveness in gaining market share and developing new products. Nevertheless, addressing challenges in product pricing and marketing will be crucial for the organization to maintain a robust competitive position across all aspects of its operations.

5.3 Discussion of the result of the study hypotheses

After evaluating the data derived from the responses of the participants, conducting statistical analyses, and arriving at a series of findings open to discussion.

The study posits a main hypothesis.

H01: **There is no statistically significant impact at (α = 0.05) of corporate governance dimensions (transparency, accountability, participative governance, and board composition) collectively on strategy implementation in information technology firms in Jordan.**

With a coefficient of determination of 0.861, the regression analysis underscores the statistical significance of the impact of corporate governance dimensions—transparency, accountability, participative governance, and board composition—on strategy implementation in Jordanian information technology firms. The reported significance level (Sig) of 0.000, surpassing the adopted threshold of 0.05 (α = 0.05), leads to the rejection of the null hypothesis in favor of the alternative hypothesis.

The findings, in harmony with resource dependency theory, suggest that the effectiveness of governance principles—such as transparency, accountability, participative governance, and board composition—is crucial for optimizing resource allocation, access, and utilization within Jordanian IT firms. This underscores their pivotal contribution to the achievement of successful strategy implementation in these organizations. Furthermore, results align with prior studies, including those conducted by (Ali et al., 2022; Ing Malelak et al., 2020).

The first sub-hypothesis

H0 1.1: There is no statistically significant Impact at ($\alpha = 0.05$) of corporate governance on programs in information technology firms in Jordan.

The findings pertaining to the initial sub-hypothesis revealed a statistically significant influence, at a significance level of $\alpha = 0.05$, of corporate governance on information technology programs within Jordanian firms. The coefficient of determination was calculated to be 0.760, with a statistical significance level below 0.05. These results align with the research conducted by (Kahoro, 2018; Ying et al., 2021). Furthermore, the concurrence between our findings and agency theory offers additional theoretical backing. According to agency theory, adept corporate governance frameworks can alleviate agency issues by harmonizing the interests of shareholders and management.

The second sub-hypothesis

H0 1.2: There is no statistically significant Impact at ($\alpha = 0.05$) of corporate governance on budget in information technology firms in Jordan.

The outcomes associated with the second sub-hypothesis demonstrate a statistically significant influence of corporate governance practices on budget aspects within information technology firms in Jordan. The coefficient of determination, registering at 0.725, further substantiates this impact, with a statistical significance level below 0.05. These findings align with the research conducted by (Suharyono, 2019). Moreover, the alignment of the findings with stakeholder theory introduces an additional level of theoretical harmony. Stakeholder theory advocates for organizations to take into account the interests and considerations of all pertinent stakeholders, extending beyond shareholders, during decision-making processes.

In light of these results, it is advisable for information technology firms in Jordan to enhance their corporate governance practices to positively impact their budget performance. Executives and board members should proactively implement and uphold elevated standards of corporate responsibility, transparency, and accountability, ensuring compliance with or surpassing local laws and regulations. Such measures are expected to foster increased investor confidence and attract additional investments into the sector.

The study posits a second main hypothesis.

H0 2: Perceived environmental uncertainty does not moderate the impact of corporate governance (transparency, accountability, participative governance, and board composition) collectively on strategy implementation in information technology firms in Jordan, with a significance level set at (α = 0.05).

The study result revealed that the null hypothesis is rejected and the alternative hypothesis is accepted, which states: perceived environmental uncertainty moderate the impact of corporate governance (transparency, accountability, participative governance, and board composition) collectively on strategy implementation in information technology firms in Jordan, with a significance level set at (α = 0.05). The statistically significant variables (transparency, accountability, participative governance, and the perceived environmental uncertainty) suggest that they have a significant impact on strategy implementation, while board composition does not have a significant impact.

These findings partially align with the research conducted by (Igamba & Karanja, 2018). Likewise, the alignment of the results with contingency theory provides supplementary theoretical backing. Contingency theory proposes that organizational effectiveness relies on adapting to the external environment, indicating that the impact of governance practices on strategy implementation is dependent on the particular environmental uncertainties encountered by information technology firms in Jordan.

In order to enhance strategy implementation in Jordanian information technology firms, a multifaceted approach is recommended. Fostering transparency across operations, decision-making, and communication channels is crucial, promoting openness and trust. Additionally, establishing robust accountability mechanisms with clearly defined responsibilities and performance expectations ensures a structured framework for evaluation. Incorporating participative governance practices, involving employees in decision-making and strategy shaping, fosters a collaborative and informed environment. Furthermore, a diverse board composition with a mix of skills, expertise, and perspectives can provide valuable insights, contributing to the overall success of strategy implementation in these firms.

The first sub-hypothesis

H02.1 Perceived environmental uncertainty does not moderate the impact corporate governance on Programs in information technology firms in Jordan, with a significance level set at ($\alpha = 0.05$).

The study result revealed that the null Hypothesis was rejected. The statistically significant variables (transparency, accountability, board composition, and the perceived environmental uncertainty) indicate that they have a significant impact on programs, while the non-significant variables (participative governance) do not have a significant impact. These findings align partially with the research conducted by (Crow, 2016). Additionally, the harmony between the results and institutional theory offers additional theoretical backing. Institutional theory argues that organizations adhere to the dominant norms and values of their environment, indicating that the impact of governance practices on programs is shaped by the institutional norms and environmental circumstances unique to information technology firms in Jordan.

The second sub-hypothesis

H02.2: Perceived environmental uncertainty does not moderate the impact of corporate governance on Budget in information technology firms in Jordan, with a significance level set at ($\alpha = 0.05$).

The study result revealed that the null Hypothesis is rejected and the alternative hypothesis is accepted, which states: Perceived environmental uncertainty moderate the impact of corporate governance on budget in information technology firms in Jordan, with a significance level set at ($\alpha = 0.05$). The statistically significant variables (transparency and the perceived environmental uncertainty interaction term) indicate that they have a significant impact on budgets, while the non-significant variables (accountability, participative governance, and board composition) do not have a significant impact.

These findings partially align with the research conducted by (Kobuthi et al., 2018). Also, the alignment of the results with dynamic capability theory provides extra theoretical reinforcement. According to dynamic capability theory, organizations must possess the capacity to adjust and develop new capabilities to excel in dynamic environments. This implies that the impact of governance practices on budgetary decisions depends on the organization's capacity to dynamically adapt to environmental uncertainties—a fundamental element of dynamic capability theory.

5.3 Recommendations

Following data analysis, hypotheses testing, and discussion and interpretation of the findings, the study makes the following recommendations:

1. Sustain the commitment to promote transparency in corporate governance procedures by consistently communicating and disclosing pertinent information to stakeholders, fostering trust among employees, shareholders, and other involved parties.
2. Strengthen accountability mechanisms by continually refining performance objectives, consistently tracking progress, and holding individuals and teams accountable for their contributions to strategy implementation. This iterative approach will contribute to a more robust and effective accountability framework.
3. Continue fostering a culture of inclusive governance by actively engaging employees at various levels in the decision-making process. Value their input and empower them to participate in both strategy formulation and execution, reinforcing the organization's commitment to inclusive and collaborative practices.
4. Give careful consideration to the composition of the board by selecting individuals with diverse backgrounds, expertise, and knowledge aligned with the organization's industry and strategic goals. This approach brings fresh perspectives and enriches discussions during the strategy implementation phase.
5. Maintain a proactive approach to external environment assessment, consistently analyzing and adapting to perceived uncertainties. Continuously adjust corporate governance practices and strategies to address potential risks and challenges arising from the external landscape, ensuring a resilient and adaptive governance framework.

5.4 Suggestions for Future Studies

1. Explore the potential impact of corporate governance dimensions (transparency, accountability, participative governance, and board composition) on strategy implementation in different sectors.
2. Conduct a comparative analysis of corporate governance practices and strategy implementation in information technology firms in Jordan and other countries.
3. Investigate the role of technology and digital transformation in enhancing corporate governance practices and strategy implementation in information technology firms.
4. Assess the impact of corporate governance practices on innovation performance in information technology firms in Jordan.
5. Explore the role of leadership in driving effective corporate governance practices and strategy implementation in information technology firms.

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Appendices

Appendix (1): Study Tool (Questionnaire).

Appendix (2): Names of Academic Experts.

Appendix (3): A Letter to Facilitate the Task of Conducting the Study.

Appendix (1): Study Tool (Questionnaire).

جـامـعـة الـشرق الأوسط
MIDDLE EAST UNIVERSITY
Amman - Jordan

بسم الله الرحمن الرحيم

السادة المحترمون...

تقوم الباحثة بإجراء دراسة بعنوان " الدور المعدل لعدم اليقين البيئي المدرك في تأثير حوكمة الشركات على تنفيذ الاستراتيجية: دراسة ميدانية في قطاع تكنولوجيا المعلومات في الأردن". وذلك من أجل استكمال الحصول على درجة الماجستير في إدارة الأعمال من جامعة الشرق الأوسط، كلية إدارة الأعمال .

وبما أنكم من العاملين في شركات تكنولوجيا المعلومات فإنكم القدر من غيركم على الادلاء برأيكم في هذا المجال، وعليه ترجو منكم الباحثة قراءة الاستبانة المرفقة بعناية والإجابة على كل فقرة بوضع عالمة (×) في المربع الذي يتوافق مع رأيك في كل فقرة. هذا الاستبيان يتضمن 44 فقرة، تغطي جميع المتغيرات، وقد يستغرق الإجابة على الأسئلة 15 دقيقة فقط من وقتك.

تثق الباحثة بأنك ستكون عونا جيدا لخدمة البحث العلمي وللمساهمة في تطوير شركتك. المعلومات الواردة في الاستبيان هي فقط لغرض البحث العلمي وسيتم التعامل معها بسرية تامة. مع خالص الشكر والتقدير.

اشراف الأستاذ الدكتور: عزام أبو مغلي

الباحثة: مريم ينال شتم

المعلومات العامة (الخصائص الديموغرافية)

1. النوع الاجتماعي:

ذكر ☐ أنثى ☐

2. الفئة العمرية:

أصغر من 30 سنة ☐، من 30 إلى أقل من 40 سنة ☐، من 40 إلى أقل من 50 ☐، 50 سنة فأكبر ☐

3. سنوات الخبرة:

5 سنوات فأقل ☐، من 5 – اقل من 10 سنوات ☐، من 10 – اقل من 15 سنة ☐، 15 سنة فأكثر ☐

4. المؤهل العلمي:

دبلوم متوسط فأقل ☐، بكالوريوس ☐، ماجستير ☐، دكتوراه ☐

5. المستوى الوظيفي:

مدير ☐، مساعد مدير ☐، رئيس قسم ☐، رئيس شعبة ☐، موظف ☐

التسلسل	الفقرات	غير موافق بشدة	غير موافق	محايد	موافق	موافق بشدة
المتغير المستقل **الحوكمة: مجموعة من القواعد والسياسات التي تنظم التفاعلات بين إدارة الشركة ومجلس الإدارة والمساهمين وأصحاب المصالح، بالإضافة إلى العمليات التي تضمن الشفافية والمساءلة والتشاركية**						
البعد الاول: الشفافية						
1	تعمل الشركة وفق هيكل تنظيمي يتميز بالوضوح.					
2	تعلن الشركة عن استراتيجياتها للأقسام المختلفة.					
3	تمنح الشركة الموظفين حق الوصول إلى المعلومات.					
4	تمتلك الشركة إطار مكتوب يوضح إجراءات الحوكمة.					
5	تحدد الشركة المسؤوليات بوضوح.					
البعد الثاني: المسائلة						
6	تقدم الشركة تقارير سنوية في الوقت المحدد تمثل جميع الأنشطة التي قامت بها.					
7	تمتلك الشركة نظامًا للمراقبة.					
8	تحدد الشركة مؤشرات الأداء.					
9	تتابع الشركة كفاءة ممارسات الحوكمة.					
10	تمتلك الشركة ضوابط للمساءلة.					
البعد الثالث: التشاركية						
11	تتمتع الشركة بتبادل كافٍ للمعلومات في مختلف أقسامها.					

12	تشمل الشركة الموظفين في عملية اتخاذ القرارات.					
13	تعقد الشركة اجتماعات دورية للأقسام تُعرض خلالها التقارير.					
14	تشمل الشركة الموظفين في تطوير السياسات.					
15	تمتلك الشركة نظامًا يمكن الموظفين المشاركة في تقديم المقترحات التطويرية.					
البعد الرابع: تشكيل مجلس الحوكمة						
16	تفصل الشركة منصب رئيس مجلس الحوكمة عن الرئيس التنفيذي.					
17	تشمل الشركة في مجلس الحوكمة أعضاء من خبرات مختلفة.					
18	تشارك الشركة في مجلس الحوكمة أعضاء من ذوي الحاجات الخاصة.					
19	تضم الشركة في مجلس الحوكمة أفراد من عائلة أصحاب العمل.					
20	تشارك إدارة الشركة رئيس مجلس الحوكمة في الاعمال اليومية.					
المتغير التابع **تنفيذ الاستراتيجية: هو عملية وضع خطط الشركة طويلة الأجل موضع التنفيذ من خلال تطوير البرامج والميزانيات والإجراءات.**						
البعد الأول: البرامج						
21	تطوّر الشركة مبادرات لتنفيذ استراتيجياتها.					
22	تستعرض الشركة الانجاز بانتظام مقابل الأهداف عند تنفيذ الاستراتيجيات.					

23	تقوم الشركة بتغييرات طفيفة مستمرة على خططها الاستراتيجية لمواكبة بيئتها أثناء عملية تنفيذ الاستراتيجية.					
24	تمتلك الشركة استراتيجية بديلة تتناسب مع الظروف البيئية الخارجية.					
25	تستطيع الشركة وضع الإجراءات التنظيمية اللازمة أثناء تنفيذ الاستراتيجية.					
البعد الثاني: الميزانية						
26	تخصص الشركة موارد مالية كافية لدعم تنفيذ الاستراتيجية.					
27	تدعم الشركة في الميزانية السنوية الأهداف المحددة في الاستراتيجية.					
28	تمتلك الشركة القدرة الكافية لتقييم تنفيذ الميزانية مع أنشطتها الرئيسية.					
29	تستخدم الشركة تنفيذ الميزانية كوسيلة اتصال لأهدافها.					
30	تتخذ الشركة بشكل منتظم إجراءات تصحيحية في الوقت المناسب بشأن تنفيذ الميزانية.					
المتغير المعدل **عدم اليقين البيئي المدرك: يشير إلى مدى التعقيد والغموض الذي تحدد به شركة بيئتها الخارجية بوجود العديد من التأثيرات المختلفة.**						
البعد الأول: تقلبات السوق						
31	تواجه الشركة تفاوت في الطلب على منتجاتها.					
32	تعي الشركة التفاوت في ميزات المنتجات المعروضة في السوق.					

33	تعلَم الشركة التفاوت في أسعار المنتجات المعروضة في السوق.					
34	تعي الشركة التفاوت في جودة المنتجات المعروضة في السوق.					
35	تدرك الشركة قيام العملاء باتخاذ إجراءات غير متوقعة عند الشراء.					
البعد الثاني: معدل التغير التكنولوجي						
36	تعي الشركة التغير السريع في التكنولوجيا.					
37	تدرك الشركة ان التغييرات التكنولوجيا توفر فرصًا لها.					
38	تدرك الشركة ان التغييرات التكنولوجيا تعرضها لتهديدات.					
39	تواجه الشركة تحديات في تنبؤ التطور التكنولوجي خلال السنوات المقبلة.					
40	تستطيع الشركة الوصول الى عدد من الأفكار الجديدة للمنتجات بفضل الاختراقات التكنولوجية الممكنة.					
البعد الثالث: مستوى المنافسة						
41	تتعرض الشركة لدرجة عالية من المنافسة في اسعار المنتجات.					
42	تواجه الشركة درجة عالية من المنافسة في تطوير المنتجات الجديدة.					
43	تشهد الشركة درجة عالية من المنافسة في مجال تسويق المنتجات.					
44	تجابه الشركة درجة عالية من المنافسة في الحصول على حصة سوقية					

Appendix (2): Names of Academic Experts.

الجامعة	الدرجة العلمية	الاسماء	الرقم
الشرق الاوسط	أستاذ دكتور	أ.د. علي العضايلة	1
الشرق الاوسط	أستاذ دكتور	أ.د. أحمد علي صالح	2
سمية	أستاذ دكتور	أ.د. شفيق حداد	3
الشرق الاوسط	أستاذ دكتور	أ.د. عبد العزيز الشرباتي	4
البلقاء التطبيقية	أستاذ دكتور	أ.د. فراس الشلبي	5
الاردنية	أستاذ دكتور	أ.د. محمد النعيمي	6
عمان العربية	أستاذ دكتور	أ.د. يونس مقدادي	7
عمان العربية	أستاذ مشارك	د. سحر أبو بكر	8
سمية	أستاذ مشارك	د. عامر الشيشاني	9
سمية	أستاذ مشارك	د. فادي قطيشات	10
الشرق الاوسط	أستاذ مشارك	د. محمد المعايطة	11
الشرق الاوسط	أستاذ مساعد	د. فايز البدري	12
عمان العربية	أستاذ مساعد	د. عمرو الزغول	13
عمان العربية	أستاذ مساعد	د. غيث الشيخ	14

The table above presents the names of the experts who evaluated the questionnaire, organized according to their degree, academic level.

Appendix (3): A Letter to Facilitate the Task of Conducting the Study.

جـامـعـة الـشـرق الأوسـط
MIDDLE EAST UNIVERSITY
Amman - Jordan

مكتب رئيس الجامعة
Office of the President

الرقم: در/خ/322
التاريخ: 2023/11/06

معالي وزير الاقتصاد الرقمي والريادة الأكرم

تحية طيبة وبعد،،،

لغايات توفير وربط أسس التعاون مع خدمة المجتمع المحلي؛ نرجو التكرم بالموافقة على تقديم التسهيلات الممكنة للطالبة **مريم ينال شتم** ورقمها الجامعي **(410031204)**، المسجلة في برنامج ماجستير إدارة الأعمال/ كلية الأعمال في جامعة الشرق الأوسط، والتي تتولى القيام بإعداد دراسة بحثية أكاديمية في رسالتها المعنونة بـ "الدور المعدل لعدم اليقين البيئي المدرك في تأثير حوكمة الشركات على تنفيذ الاستراتيجية : دراسة ميدانية في قطاع تكنولوجيا المعلومات في الأردن"، علماً بأن المعلومات سيتم استخدامها لأغراض البحث العلمي وبصورة سرية.

وتفضلوا معاليكم بقبول فائق الاحترام والتقدير...

رئيسة الجامعة

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