Investigating antecedents of service innovation in the bank industry: evidence from Jordan

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Candidate Declaration

I hereby declare that

1. The contents of this thesis have never been presented for a degree at this or any other university before. I further state that this thesis is completely the result of my own study.

2. All information in this document has been obtained and presented in accordance with academic rules and ethical conduct.

3. I am aware of and understand the university ‘s policy on plagiarism and certify that this thesis is my own work. The use of all published or other sources of material consulted has been properly and fully acknowledged.

4. The work undertaken towards the thesis has been conducted in accordance with the SHU principles of integrity in Research and the SHU Research Ethics Policy.

5. The word count of this thesis is 60,000.

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DEDICATION

To my parents, brothers, and sisters for their unwavering love, support, and encouragement throughout my journey to complete this thesis.

ABSTRACT

In today's highly competitive marketplaces, innovation is generally seen as one of the major factors influencing a firm's long-term success. Service innovation represents an additional means by which firms can improve their market performance and efficiency, which in turn may contribute to competitive advantage in today’s business environment.

Market orientation, technology orientation and learning orientation are suggested collectively to be key drivers influencing service innovation and firm performance. However, very little research has been done so far to examine in one single model the impact of these three strategic orientations on service innovation and firm performance. Additionally, while many studies have examined transformational leadership as having a moderating impact between different variables, there is a lack of studies that have examined the impact of transformational leadership as a moderator between market orientation, technology orientation and learning orientation on service innovation towards improving firm performance in banking industry. Therefore, this study aims to examine the impact of the three orientations on service innovation and firm performance and the moderating impact of transformational leadership between the three orientations and service innovation.

After identifying and reviewing the relevant literature in depth, the contingency theory was used to develop the conceptual model and associated hypotheses. This study employed a quantitative research design where 199 questionnaires were collected from bank managers in the first-second-third lines operating in Jordanian banks, to obtain necessary data to test the hypotheses developed for the study. Hierarchical regression analysis and Structural Equation Modelling through SPSS and AMOS were performed to analyse the research data.

The main findings indicate that market, technology and learning orientations have a direct and positive impact on service innovation. Moreover, transformational leadership is found to moderate the relationship between market and learning orientation and service innovation. However, transformational leadership evidently has no moderating impact on the relationship between technology orientation and service innovation. Finally, service innovation is found to have a positive and direct impact on banks’ financial and non-financial performance.

The current study contributes to the current literature at different levels. First, at the theoretical level, this study develops a conceptual framework which crosses different streams of literature, mainly market orientation, technology orientation, learning orientation, transformational leadership, service innovation and firm performance. Unlike previous studies, the model: (i) examines the direct impact of market, technology and learning on service innovation and offers a view of how service innovation can improve firm performance (financially and non-financially); (ii) examines the moderating impact of transformational leadership. Previous research has focused primarily on one or a few dimensions of strategic orientations. None of the previous studies, including those conducted in banks, combined the three orientations and transformational leadership in a single study to understand the effects on service innovation and, consequently, firm performance. Second, at the empirical level, this study is conducted in the Jordanian banking industry. As such this study is one of the very few studies to use empirical data from the study context to examine and report how different orientations and transformational leadership can impact service innovation and in turn improve firm performance. No previous literature has been found that has studied this orientation in the banking industry in the Middle East and in particular in Jordan; moreover, no studies have been found that integrated these kinds of orientations into one single model to improve firm performance.

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LIST OF ABBREVIATIONS

AVE: Average variance extracted
CT: Contingency theory
CFA: Confirmatory factor analysis
CO: Customer orientation
CPO: Competitor orientation
CTL: Commitment to learning
DV: Dependent variable
EFA: Exploratory factor analysis
FP: Financial performance
IV: Independent variable
IC: Interfunctional coordination
LO: Learning orientation
MO: Market orientation
NFP: Non-financial performance
OP: Open mindedness
SV: Shared vision
SI: Service innovation
SEM: Structural equation modelling
TO: Technology orientation
TL: Transformational leadership
NFP: Non-financial performance
ROA: Return on assets
ROE: Return on equity
ROI: Return on investment
VIF: Variance inflation factor
CMV: Common method variance

1 Introduction

All organisations place a premium on innovation because it is necessary for long-term viability (Tan, 2019; Hardcopf, Liu, and Shah, 2021). To truly benefit from innovation, organisations must recognise it as an outcome, a process, and a mindset (Damanpour, 1991). Organisations strive to improve firm performance, and organisational culture has been identified as a key driver of improved firm performance (Uzkurt, Kumar, Kimzan and Eminogly, 2013; Gomes and Carmona, 2020). At the same time, it has been discovered that innovation has a positive impact on firm performance, a nation's economy, industrial competitiveness, and the standard of living in the country (Gopalakrishnan and Damanpour, 1997). Innovations are regarded as a competitive instrument for a firm's long-term performance and success, and are regarded as an important means of adapting to the needs of a changing and evolving environment, gaining a competitive advantage, and facilitating change initiative implementation (Blackwell, 2006; Schein, 1992; Deshpande et al., 1993; Nonaka and Yamanouchi, 1989; Jones, Patz, Thomas and McCarthy, 2014; Tsai and Wang, 2017).

Similarly, according to recent research on innovation, organisational innovation has a significant impact on firm performance and competitiveness in the success of the firm (YuSheng and Ibrahim, 2019; Tajeddini, Martine and Altinay, 2020). It is also commonly assumed in the innovation literature that organisational culture has a significant impact on the organisation's innovations. Firms that are more innovative will be more successful in responding to customer needs and developing new capabilities that will allow them to perform better (Wang and Wang, 2012). Damanpour (1991) has stated that innovation is intended to contribute to the firm's performance or effectiveness. Innovation is frequently considered to be one of the key drivers of the long-term success of a firm in today's competitive markets (Jimenez, Valle and Hernandez-Espallardo, 2008; Beynon, Jones and Pickernell, 2020).

Gunduz, Kemal and Lutfihak, (2011); Baba (2012); Ghasemzadeh, Tsai and Wand, (2017); Nazari, Farzaneh and Mehralian (2019) have indicated that to meet clients' needs in the service sector, service innovation (SI) is the best way to understand customers and their relationship to service users and its introduction of new services to the existing or new customers (Taghizadeh, Rahman, Hossain and Haque, 2019; YuSheng and Ibrahim, 2019; Uzkurt et al., 2013). Service innovation refers to new or improved service processes, such as the addition of new resources, intermediate services, new components, or new or improved service features

(Liu and Lee, 2019; Tsai and Wang, 2017). Customers no longer need to be physically present in banking halls to transact banking services, thanks to technological advancements. All of this can be accomplished within the innovation platforms established by banks to improve the delivery of these banking services (YuSheng and Ibrahim, 2019).

The literature has provided some factors as antecedents of service innovation and firm performance, such as market orientation (MO) (Mahmoud, Blankson, Owusu-Frimpong, Nwankwo and Trang, 2016; Cheng and Krumwiede, 2012; Sendaro and Baharun, 2019), technology orientation (TO) (Kocak, Carsrud and Oflazoglu, 2017; Tsou, Chen and Liao, 2014; Masa'deh, Al-Henzab, Tarhini and Obeidat, 2018), learning orientation (LO) (Slater and Narver, 1995; Mahmoud et al., 2016), and transformational leadership (TL) (Jaiswal and Dhar, 2015).

Market orientation is a key concept in strategic marketing theories, reflecting how a firm interacts with its markets (Huhtala et al., 2014; Kohil and Jaworski, 1990). It reflects an organisational culture that prioritises meeting customer needs in the firm's business model (Narver and Slater, 1990). Market orientation is valuable because "it focuses the organization on continuously collecting information about target-customers' needs and competitors' capabilities and using this information to create continuously superior customer value" (Slater and Narver, 1995, p. 63). Moreover, it can keep existing customers satisfied and loyal, attract new customers, accomplish the desired level of growth and market share (Cheng and Krumwiede, 2012; Kirca, Jayachandran and Bearden, 2005). The marketing literature has acknowledged that market-oriented activities contribute positively to firm performance (Sari and Thamrin, 2022). It is believed that firms that engage more in market-oriented activities are more likely to perform better than firms that engage less in market-orientation actitivities (Sari and Thamrin, 2022; Bamfo and Kraa, 2019) because they can understand customers' needs and respond accordingly by delivering superior customer value (Sari and Thamrin, 2022; Farbod Fakhreddin and Pantea Foroudi, 2022).

Furthermore, technology orientation seeks to acquire new advanced technologies in order to develop new processes and services (Al-Ansaari, Bederr, and Chen, 2015). As a result, it can create new solutions and provide new advanced services to meet the needs of customers (Kocak et al., 2017). If a business is able to apply and use technological developments in running its business, it will have an impact on the better performance of the business, because the

application of technology is able to assist in facilitating the process of running a business (Sari and Thamrin, 2022).

Learning orientation is also thought to be important for increasing innovation and performance (Liao, Chen, Hu, Chung, and Liu, 2017; Garca-Morales, Jiménez-Barrionuevo, and Gutiérrez-Gutiérrez, 2012; Raj and Srivastava, 2016). This is due to the fact that learning orientation is critical in enabling organisations to achieve speed and flexibility during the innovation process (Jiménez-Jiménez and Sanz-Valle, 2011) and facilitates a climate for knowledge creation and dissemination, which in turn stimulates innovation (Siddique, 2018). Furthermore, knowledge development derived from organisational learning will allow competencies to remain dynamic and thus support performance improvement (Garca-Morales et al., 2012).

Moreover, researchers have pointed out the importance of transformational leadership on innovation and firm performance. According to Garcia-Morales et al. (2012), transformational leadership is a leadership style that fosters a sense of shared purpose among the organisation's members and aids in the achievement of their shared objectives. Transformational leadership has been the most supported theory over the previous two decades, compared with other leadership styles such as transactional leadership (Suifan, Abdallah and Al Janini, 2018; Raj and Srivastava, 2016; Choi, Kim, Ullah and Kang, 2016). Because, transformational leadership can inspire subordinates to exceed their skills by offering a better way to complete tasks and solve issues and is closely linked to innovation and performance (Suifan et al., 2018; Sattayaraksa and Boon-itt, 2016). Moreover, it attempts to create emotional links with its followers and inspires higher values, therefore, becoming the the motor and transmitter of innovative culture to seeking the best possible organisational performance (García-Morales et al., 2012; Choi et al., 2016).

Performance is the ability of the organisations to achieve financial and non-financial goals for firms in an efficient and effective manner (Tan, 2019; De Toni, Reche and Milan, 2022). Firm performance is an important standard to evaluate the profitability, asset operation level and solvency of firms, which directly reflects firms' subsequent development ability (Yao et al., 2021). Although traditional wisdom highlights that there is no worldwide or optimum structure or strategy which improves performance, contingency theory suggests that performance and effective innovation result from proper combinations of structure and strategy (Tajeddini, 2014). Additionally, the reliance on the contingency theory culture allows for an open

atmosphere within a corporation whereby employees, considered as an innovation engine, are enthused to demonstrate more creativity; thus, they offer the corporation more opportunities for innovation (Ghasemzadeh et al., 2019).

Upon reviewing the literature on innovation and firm performance, it was noted that market orientation, technology orientation, learning orientation, transformational leadership, service innovation and firm performance are related to each other. Therefore, this research will focus on exploring the relationship between these variables in the context of banking industry of Jordan.

According to Drigă and Isac (2014) and Ayinaddis, Taye and Yirsaw (2023), the banking business has been more competitive in recent years, and banks are employing novel tools and ways to preserve customer retention and satisfaction. The data was collected from the banking sector of Jordan due to the critical role the banking sector has in the Jordanian economy. The banking sector is one of the main pillars of the Jordanian economy (Al-Dmour et al., 2019), and the accomplishments of the banking sector will contribute to achievements in the Jordanian economy and reflect the intensive aim to achieve financial/monetary stability in Jordan (Suifan et al., 2018). The number of banks in Jordan increased from 22 in 2006 to 24 in 2020, with 871 branches all over Jordan and 192 branches internationally (Central Bank of Jordan, 2021). The size of the banking system, relative to the GDP, is relatively large compared to other countries in the region (Ayadi et al., 2018). The financial sector's contribution to the GDP is the second largest behind government services (Ayadi et al., 2018). Moreover, Jordanian banks are chosen for convenience.

These research findings will help the banks to better comprehend service innovation and the means whereby they can enhance their banks' performance. Furthermore, this research provides additional evidence and how multiple orientations such as market orientation, technology orientation, and learning orientation on service innovation can improve service innovation and in turn improve the performance in the banking sector in Jordan. In addition, the study sheds light on the moderating effect of transformational leadership between market orientation, technology orientation, learning orientation and service innovation.

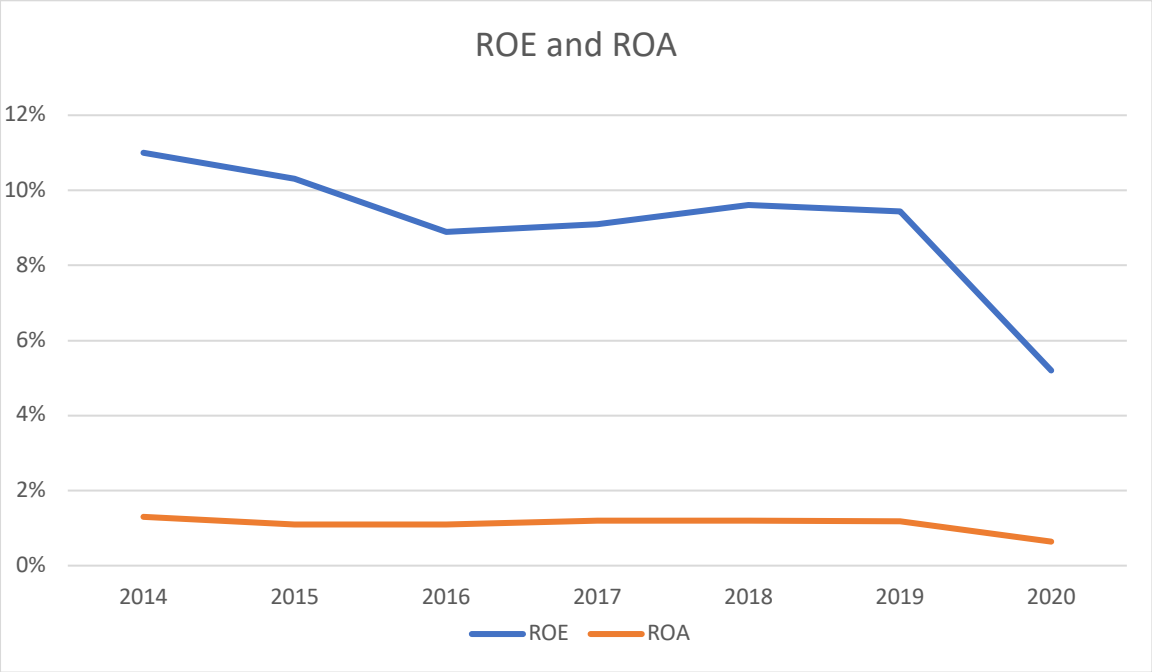
1.1 Statement of the problem

The banking system plays a significant role in the economy, and it is at the heart of the economy of any country (Mahmoud et al., 2016; Uzkurt et al., 2013). Asaah, Yunfei, Wadei and Nkrumah (2019) and Al-Dmour et al. (2019) have indicated that banks are being called on to be more innovative as innovation is a key factor of improving performance and competitiveness in banks. Furthermore, in order to be successful and maintain performance stability, banks must not only seek new opportunities but also be highly innovative (Tajeddini et al., 2006). Because banks operate in a volatile industry in which "customer preferences, product-service technologies, and competitive weapons frequently change unpredictability" (Lichtenthaler, 2020).

However, according to Das, Verburg, Verbraech and Bonebakker (2018) and Chaudhry, Roomi and Dar (2020) there are some barriers that affect innovation in banks and in turn impact their performance, such as marketing barriers (e.g. imitation of product by competitors, market uncertainty and low level of knowledge about the customers' need), technology barriers, unsupportive organisational structure, and lack of fundamental internal R&D. These barriers can be the reason for the poor performance and inability to cope with the market trends and customers' needs (Chaudhry et al., 2020). Berry, Shankar, Parish et al., (2006) have indicated that to support innovation in service sectors, it is crucial to create a culture that promotes innovation.

Turning our attention to the banking industry, it is worth noting that several research studies have examined banking sector innovation, though none have focused on Jordanian banking sector innovation (Uzkurt et al., 2013; Mahmoud et al., 2016). In Jordan, although the banking sector has been growing in recent years (Suifan et al., 2018), it still suffers from various challenges such as the decline in the Return on Equity (generally net income divided by equity, Hereinafter: ROE) and Return on Assets (new income divided by average assets in recent years, Hereinafter: ROA). As we can see from Figure 1-1, there was a decline in the performance of the banks from 2014 to 2020, measured by ROA and ROE; however, in 2018 there was a rise of 0.63% in ROE and 0.11% in ROA, respectively (Association of Banks, 2020).

Figure 1- 1: ROE and ROE of Jordanina banks



Source: Association of Banks in Jordan, (2018, 2020); Al-abedallat, (2017)

Therefore, this study examines the impact of service innovation on firm performance in the banking industry and the effect of several drivers such as market, technology and learning orientations on service innovation: In addition, the moderating impact of transformational leadership between market, technology and learning orientations and service innovation in banking industry of Jordan.

1.2 Research gaps

Several studies have researched innovation and firm performance (Asaah et al., 2019; Mahmoud et al., 2016; Berraies and Hamouda, 2018; Farouk, Elanain, Obeidt and Al-Nahyan, 2016; Uzkurt et al., 2013; Masad'deh et al., 2018;YuSheng and Ibrahim, 2019; Taghizadeh et al., 2019). For example, Uzkurt et al., (2013) have examined the mediating role of innovation on the relationship between organisational culture and firm performance in the banking sector of Turkey. Their findings indicated that organisational culture and innovation have a positive impact on firm performance. Mahmoud et al., (2016) have examined the relationship between market orientation, learning orientation and innovation: and second, assessed the role of innovation, market orientation and learning orientation on firm's business performance using a developing country (Ghanaian banking domain) as a study context. Their results indicate that market orientation and learning orientation have a significant association with innovation.

Morever, Farouk et al., (2016) have also studied the relationship between innovation and performance by examining the impact of human resource management (HRM) practices on organisational performance in the banking sector in the United Arab Emirates (UAE), to test the mediating impact of organisational innovation on the HRM-organisational performance relationship, and to test HRM practices as mediator of the relationship between innovation strategy and organisational innovation. Taghizadeh et al., (2019) have examined the influence of four organisational culture traits: consistency, cooperativeness, effectiveness, and innovativeness, on radical and incremental types of service innovations, which led to new service market performance from bank managers in Bangladesh.

Kocak et al., (2017) have examined the effects of market, technology and entrepreneurial orientations (EOs) on both innovation and firm performance. They analysed the mediating effects of incremental and radical innovation within the context of entrepreneurial firms in Turkey. Kocak et al. (2017) have found that market orientation and technology orientation lead strongly to innovation. Tajeddini et al., (2020) have examined the the importance of human-related factors on service innovation and performance in Tourism firms in Japan. Moreover, Schulze, Townsend and Talay (2022) have investigated the role of responsive and proactive competitor orientation on influencing innovation and firm performance, as well as the mediating effects of effects of technology and learning orientation. They have found that competitor orientation drives innovation and enhances firm performance through learning orientation.

Masa'deh et al., (2018) have recommended that future studies could explore the relationships of strategic orientations on firm performance using other variations of strategic orientations, such as learning orientations, customer orientation and competitor orientation. Moreover, Kocak et al., (2017) have indicated that analysing the effects of varying degrees of each strategic orientation (market orientation and technology orientation) on innovation and performance would add a significant new contribution to the literature. After reviewing the literature, it has been noted that different orientations, innovation and firm performance are related to each other. However, none of these studies have examined three different orientations such as market orientation, technology orientation, learning orientation, service innovation and firm performance in one single model in the banking industry in Jordan, therefore, this study will fill these gaps in the literature.

Moreover, many studies have focused on transformational leadership as a moderator between different variables (Durmusoglu et al., 2018; Engelen, Gupta Strenger and Brettel, 2015; Reuveni and Vashdi, 2015; Hung and Nguyen, 2022). For example, Durmusoglu et al. (2018) investigated internal and external barriers influencing the different dimensions of firm service innovativeness and the moderating effect of transformational leadership on the relationships in an emerging economy, namely Turkey. Moreover, Engelen et al., (2015) have examined the moderating impact of transformational leadership behaviours between entrepreneurial orientation and firm performance. Moreover, Hoai, Hung and Nguyen (2022) have examined the relationships between internal control system (ICSs) and orientational performance in Vietnamese public sector organisations (PSOs), with particular emphasis on the mediating role of intensity of innovation and the moderating role of transformational lesdership. However, there is a lack of studies that have researched the moderating effect of transformational leadership between market, learning, and technology orientations and service innovation. Tayal et al., (2018) stated that banks must develop and encourage their employees' creativity in order to drive organisational change. They also stated that innovative ideas will be generated when employees are encouraged by leaders to communicate openly and thus share their thoughts with one another. As a result, banks' policies must focus on recognising, developing, and supporting the right type of leadership, specifically transformational leadership, in their organisations.

Therfore, this thesis will contribute to the existing literature in three different ways. Firstly, it will provide a better understanding of service innovation and firm performance in banks by offering a comprehensive study to test market orientation, technology orientation, learning orientation, transformational leadership, service innovation and firm performance in a single model. Secondly, few studies have focused on the Middle East, and this study is one of the first to focus on the Jordanian banking sector. Finally, it explores the moderating role of transformational leadership between market, learning, technology orientations and service innovation. Therefore, this study will fill the above gaps in the literature.

1.3 Research aims

This study aims to examine the influence of service innovation on firm performance in the banking industry in Jordan and the impacts of market, technology and learning orientations on service innovation. Moreover, it examines the moderating impact of

transformational leadership between market, technology and learning orientations and service innovation.

1.4 The objectives of the study

1. To examine the relationship between market, technology and learning orientations on service innovation and firm performance in banks of Jordan.
2. To investigate the relationship of transformational leadership as a moderator between learning, market, and technology orientations on service innovation and firm performance.
3. To develop a theoretical framework that highlights the influences of market orientation and technology orientation, learning orientation, and transformational leadership on service innovation and firm performance in the banking industry of Jordan.
4. To provide theoretical recommendations to bank managers and leaders of banks in Jordan on how to improve firm performance (financially and non-financially) based on the research findings.

1.5 Research questions

Q (1) What is the impact of service innovation on firm performance in the banking sector of Jordan?

Q (1A) What are the impacts of market, technology and learning orientations collectively as three key strategic orientations on service innovation and firm performance?

Q (1B) What is the moderating impact of transformational leadership between market, technology and learning orientations and service innovation and in turn on improving firm performance?

1.6 Contributions of the research

- This is the first study to make vital contributions to banking industry literature and look into different strategic orientations (market, technology, and learning orientations), transformational leadership, service innovation, and firm performance (Mahmoud et al., 2016; Kocak et al., 2017; Milbratz et al., 2020). Previous research has primarily concentrated on a single or a few dimensions of strategic orientations. None of the prior studies, including those conducted in banks, combined the three orientations and transformational leadership in one study to understand the impacts on service innovation and, as a result, firm performance.

- This thesis provides new insights into the impact of transformational leadership as a moderating impact between market orientation, technology orientation, learning orientation and service innovation, in the Jordanian banking context.
- The findings of this research will be useful to managers of banks in Jordan in understanding how market orientation, technology orientation, learning orientation, transformational leadership and service innovation will enhance the performance of banks, financially and non-financially.
- More importantly, the result of this study will contribute to the literature on service innovation and firm performance from the context of a developing country like Jordan as a new concept, as few studies have focused on banks in Arab countries.

1.7 Rationale of the study

The concept of innovation has been widely researched because it is possibly the most relevant area when assessing the performance of banks. According to Gunday et al. (2011), Baba (2012), and Ghasemzadeh et al., (2019), service innovation is the best way to comprehend customers and their relationships to service users and its introduction of new services to the existing or new customers in order to meet clients' needs in the service sector (Taghizadeh et al., 2019; YuSheng and Ibrahim, 2019; Uzkurt et al., 2013). There are a plethora of studies (Gunday et al., 2011; Taghizadeh et al., 2019; Milbratz et al., 2020) that examined the impact of different innovations on performance in the service sector (Taghizadeh et al., 2019). However, this study focuses on the banking industry in Jordan as the defining structure of the country's economy. The present study will, therefore, examine the impact of market, technology and learning orientations on service innovation, and the impact of transformational leadership as a moderating impact between market, technology and learning orientations on service innovation and in turn on improving firm performance.

Furthermore, the contribution of the service sector to the gross domestic product outweighs that of other sectors in most developing economies. Therefore, conducting more research to verify anecdotal evidence on the applicability and the effectiveness of service innovation in the service sector has the potential to provide significant benefits, perhaps at economy level. Recent changes to the Jordanian economy have had an impact on this sector (Suleiman Awwad and Mohammad Agti, 2011). Jordan's banks have taken on all the same responsibilities and obligations as other banks in industrialised countries, and it is today quite an active sector. In 2006 there were 22 banks, and in 2021 there were 24, including 16 Jordanian national banks

and eight international banks, one of which is an Islamic bank. These 24 banks have more than 871 locations nationwide and 192 abroad. Amman, the nation's capital, is home to many of the branches (Association of Banks in Jordan, 2018; Central Bank of Jordan, 2021).

The findings from previous studies that examined the impact of service innovation on firm performance have focused on different variables such as characteristics of organisational culture (Taghizadeh et al., 2020). There are limited studies that have focused on market orientation, technology orientation, learning orientation, transformational leadership, service innovation and firm performance in one single model. This study fills this gap by exploring these relationships and giving a better understanding.

1.8 Context of the study

1.8.1 Introduction

This part of the chapter presents a background of study context. It provides general facts about Jordan. The following sections give an overview of Jordan's economy, the development of the banking sector in Jordan, and explain the differences between Islamic and non-Islamic banks.

1.8.2 Facts about Jordan

Jordan is located in the heart of the Middle East, between Asian Arab countries to the east and African Arab countries to the west, as illustrated in Figure 4-3. Jordan is bounded to the north by Syria, to the south by Saudi Arabia, to the east by Iraq, and to the west by the occupied West Bank and Israel. Jordan's port city of Aqaba, located at the northern tip of the Gulf of Aqaba, provides access to the Red Sea.

Figure 1- 2: Jordan

Source: Association of Banks in Jordan (2018)

Jordan had a population of 11.057 million people in 2021, with a median age of 23.8 years (Jordan population, 2022). Jordan is a small Arab country with limited natural resources such as water, oil, and minerals. The Jordanian economy is beleaguered by three major problems: poverty, unemployment, and, most recently, inflation (Central Bank of Jordan, 2021). As a result, Jordan prioritises the service sector and human capital, the two most important sectors of the national economy. In terms of contribution to overall growth rate, this sector will outperform all other economic sectors in 2022. Jordan's total GDP was contributed by the service sector at 61.59 percent, while the industrial sector contributed 23.91 percent (Central Bank of Jordan, 2021).

1.8.3 The economy of Jordan: An overview

Jordan has pursued a comprehensive social and economic reform agenda in the ten years since King Abdullah II assumed his constitutional powers as Monarch of the Hashemite Kingdom of Jordan in 1999, with the goal of establishing a modern state based on economic vitality and

significant potential for growth and social stability. King Abdullah II made it a priority to integrate Jordan into the new global economy, and he has expended considerable effort to ensure sustainable levels of economic growth and social development aimed at improving the standard of living for all Jordanians. Jordan was admitted to the World Trade Organization (WTO) in 2000, and has ratified agreements for the establishment of a Free Trade Area with the United States of America, the European Union, the European Free Trade Association countries, and sixteen Arab countries during King Abdullah's reign. This creates enormous opportunities for investment in Jordan. As a result, Jordan has emerged as one of the most progressive countries in the Middle East (Central Bank of Jordan, 2021). Table 4.7 shows the main economic indicators of the Jordanian economy from 2015 to 2021.

Table 4- 1:Main Economic Indicators of Jordan 2016 – 2021, in Jordanian Dinar (JD) Million

Indicators	2016	2017	2018	2019	2020	2021
Population (In millions)	9.798	10.053	10.309	10.554	10.806	11.057
Unemployment rate (%)	15.3	18.3	18.6	19.1	23.2	24.1
Average JD exchange rate against US Dollar	1.410	1.410	1.410	1.410	1.410	1.410
Gross Domestic Product GDP at market price	28,323.7	29,400.4	30.481.8	31,597.1	31,025.3	32,122,7
Inflation rate (%)	-0.62	3.61	4.45	0.68	0.4	1.9

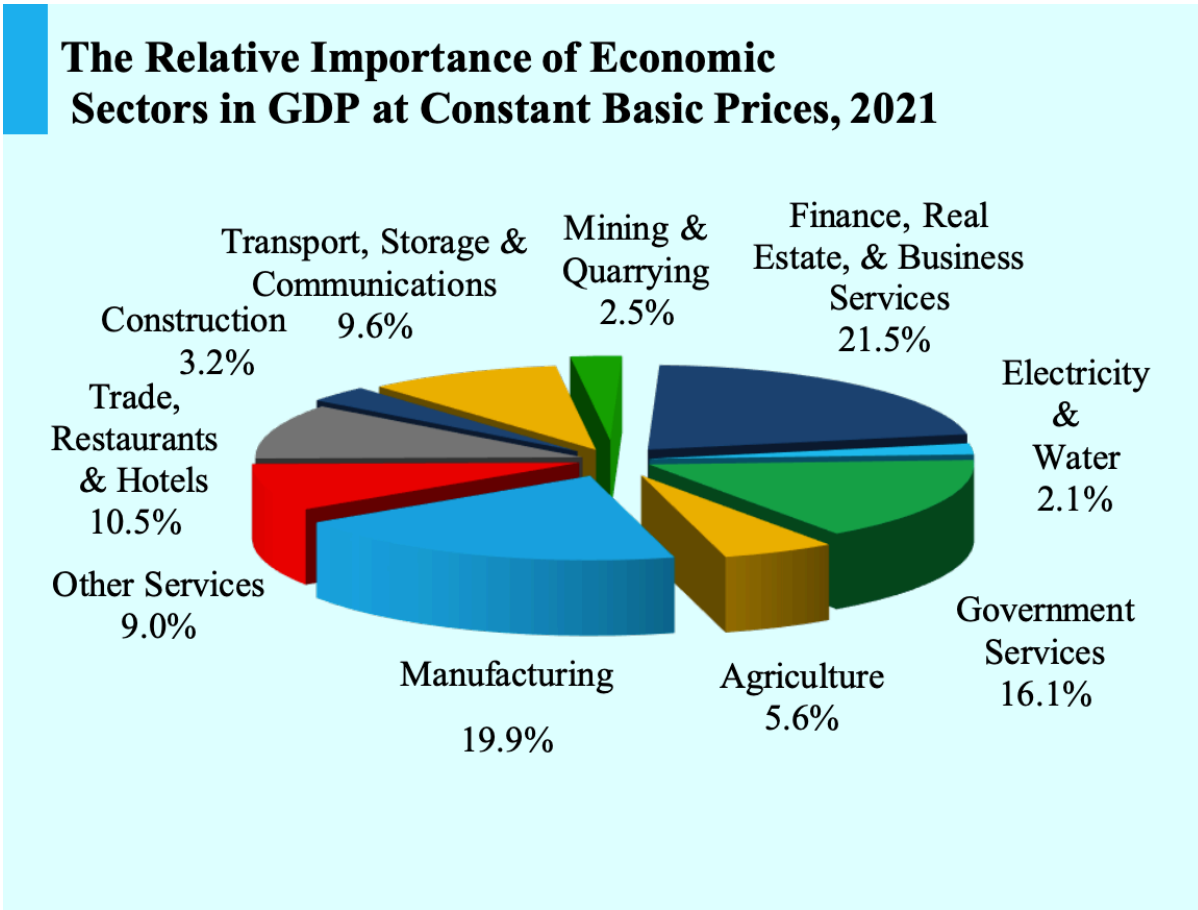
Source: The Central Bank of Jordan (2021)

As shown in Table 4.7, GDP increased steadily to reach 32,122,7 million Jordanian dinar in 2021, compared to 28,323 in 2016. Meanwhile, the unemployment rate increased to reach 24.1% in 2021 compared to 15.3 in 2016. Finally, the inflation rate decreased to 1.9% in 2021 compared to the highest rate of the last few years of 4.45%, which was recorded in 2018.

The following diagram shows the relative importance of the economic sectors to Jordan's GDP. During 2021, as Figure 4.4 displays, the finance, real estate and business sectors were the most important service sectors, together contributing 21.5% of Jordanian GDP. This was followed by manufacturing production (19.9%); producers of government services (16.1%); and trade, restaurants, and hotels (10.5%); transport, storage and communication (9.6%), respectively. Thus, the finance sector occupied the top ranking based on the relative importance of economic

sectors to Jordan's GDP in 2021. The statistics indicate that the finance sector is important for Jordan's economy, and therefore more attention must be given to this sector.

Figure 1-3:The relative importance of economic sectors to GDP in 2021 (%)



Source: The Central Bank of Jordan (2021)

1.8.4 The development of the banking sector in Jordan

Jordan has seen significant economic and social development over the last four decades (Association of Banks in Jordan, 2018). The banking system is one of these sectors, and it is a significant one in the economy. Prior to 1964, the Jordanian Monetary Council was the monetary authority, with only pounds sterling to cover the Jordanian dinar. Jordan had only seven banks at the time (three of which were foreign banks). In 1959, temporary regulations were issued, and the CBJ (Central Bank of Jordan) was established. Its operational processes began on October 1, 1964 (Association of Banks in Jordan, 2018).

Jordan's banking sector began to emerge 90 years ago, in 1925, with the establishment of a foreign bank in Jordan's "Othmani Bank" (British Bank) (Association of Banking in Jordan,

2018). The Arab Bank was then set up in Jerusalem in 1930; after the war of 1948 it shifted its headquarters to Amman (the capital city of Jordan), and there are four banks dating back to the 1950s, including one national bank (Jordan National Bank) and three overseas banks (HSBC Bank, Egyptian Arab Land Bank, and Rafidain Bank). In the 1960s, two national banks (Jordan Bank and Cairo Amman Bank), and one international bank (Standard Chartered Bank) were created, six banks were founded in the mid-1970s, including four national banks (Housing Bank for Trade and Finance, Jordan Kuwait Bank, Jordan Commercial Bank and Jordan Investment Bank), one overseas bank (Citibank N A) and one Islamic Bank (Jordan Islamic Bank for Finance and Investment). Two national banks (Arab Banking Corporation, Jordan Investment and Finance Bank) date back to the early 1980s, four banks to the 1990s, including three national banks (Union Bank for Saving and Investment, Société Générale De Banques-Jordan, and Jordan Money Bank) and one Islamic Bank (Islamic International Arab Bank plc). At the start of this decade, three non-Islamic international banks were created (Kuwait National Bank, Audi Bank, and BLOM Bank), one international Islamic Bank (Al Rajhi Bank), and one national Islamic Bank (Safwa Islamic Bank) (Central Bank of Jordan, 2018; Miani and Daradkah, 2008).

Jordan's banking system consists of the CBJ, certified banks, and loan facilities. The Central Bank of Jordan (CBJ) is a financial government institution that controls Jordan's banking and monetary systems. It is Jordan's only accountable authority in charge of monetary policy and the banking system. It is run by a board of directors appointed by the Ministerial Council (Miani and Daradkah, 2008).

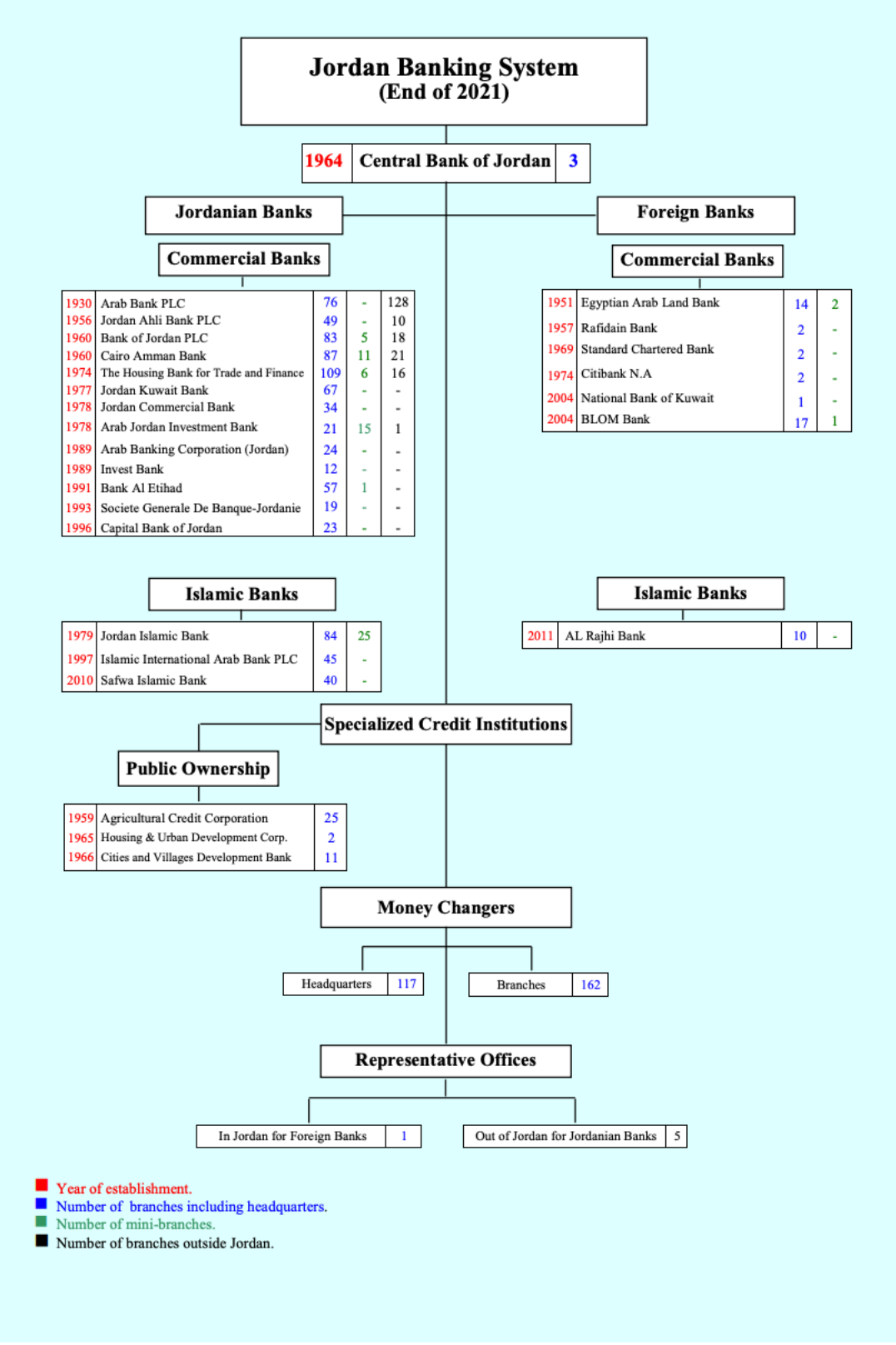
The three different groups of national and international banks, commercial banks, investment banks and Islamic banks operating in Jordan are subjected to comparable regulatory and market circumstances and function under universal banking principles: “Commercial banks practice all banking business; investment banks practice all financial, investment and commercial activities in addition to the brokerage services at the Amman Stoke Exchange; Islamic banks practice all banking, financial and investment business on a non-usury basis under Islamic Shariah (law)” (Isik, Omran and Hassan, 2017, 346).

This sector has been impacted in recent years by developments in the Jordanian economy (Suleiman Awwad and Mohammad Agti, 2011). It is currently very active, and Jordan's banks have assumed all the same duties and tasks as other banks in developed countries. The number

of banks increased to 22 banks in 2006, and 23 banks in 2021: 7 international banks: 1 of which is an Islamic bank and 16 Jordanian national banks: 3 of which are Islamic banks. There are now 23 banks with more than 869 branches and 194 branches internationally. Many of the branches are located in the capital city (Amman) (Association of Banks in Jordan, 2018; Central Bank of Jordan, 2021). See Figure 4.5 below.

There is no state ownership in Jordan; all Jordanian banks are entirely owned by their shareholders. This clearly shows that the importance of this sector in Jordan is growing. As a result, banks must seek a creative way to compete, with innovation being one of the most important foundations for achieving high performance and competitive advantages.

Figure 1- 4: Institutions of the Jordanian banking system 2021



Source: Central Bank of Jordan, (2021)

1.8.5 Islamic and non-Islamic banks

As this study is focusing on two different types of banks, Islamic and non-Islamic, in this section, the researcher will briefly discuss the main differences and similarities between Islamic and purely commercial banks.

Islamic banking has distinct characteristics that should be highlighted. The Islamic literature has addressed the creation and management of money, and these differences in characteristics are related to the functions, structure, and objectives of Islamic banks (Al-Nasser Mohammed and Joriah Muhammed, 2017).

In contrast to conventional banking, Islamic banking prohibits business transactions involving gambling and alcohol because they are deemed harmful to human welfare and health (Al-Nasser Mohammed and Joriah Muhammed, 2017; Hassan and Aliyu, 2018). Gambling is a trading game in which an unspecified amount is traded rather than a commodity or service. Gambling is prohibited under Sharia law because it provides no return in terms of commodities or services. Islamic banking is opposed to earning interest without understanding the investment process or sharing profits and losses. A committee known as the Sharia Supervisory Board (SSB) monitors and oversees banking operations to ensure that Islamic banking adheres to Islamic principles (Al-Nasser Mohammed and Joriah Muhammed, 2017).

Furthermore, Islamic banks differ from commercial banks in that they are prohibited from engaging in riba (usury) and gharar (excessive uncertainty or risk) (Nomran and Haron, 2020). Shariah law is a distinct underlying ethical principle that incorporates moral values into the operations of Islamic banks (Aracil, 2019; Hassan and Aliyu, 2018). As a result, unlike conventional banks, which are not bound by religious obligations, Islamic banking is based on a moral framework established by Shariah (Aracil, 2019). "Mit Ghamr Local Savings Bank in Egypt" was established in 1963 as a social bank to promote social welfare (Aracil, 2019).

Murabahah (cost plus), in which a bank purchases a good and sells it to a customer at an agreed-upon profit margin, is the most popular financing product in Islamic banks. A partnership between banks and customers is another financing concept that can include either mudaraba (profit sharing) or musharaka (profit and loss sharing) (Zarrouk, Jedidia, and Moualhi, 2016; Olson and Zobi, 2017).

In the case of mudaraba, banks are capital providers who share profits in a predetermined ratio with the customer or an entrepreneur and bear all losses, unless the customer is negligent. In the case of musharaka, the bank and the customers are partners who share profits and losses according to a predetermined ratio. Finally, financing can take the form of qardhasan (benevolent loan), which is given as goodwill and requires the borrower to repay the amount borrowed (Zarrouk et al., 2016; Hassan and Aliyu, 2018).

Deposits are non-remunerated, similar to conventional demand deposits, remunerated (at bank discretion) for savings, and mudaraba between the depositors and the bank as an investment. In the case of an investment deposit, depositors are capital providers and place their deposits with the bank on the basis of profits made by the bank from the investment, but with no guarantee of a principal or fixed return (Abdul-Majid, Falahaty and Jousoh, 2017; Abdual-Majid, Saal and Battisti, 2010). Despite the differences between Islamic and non-Islamic banking, some experts appear to believe that Islamic banking is merely a replication of non-Islamic banking with some restrictions imposed, a claim that many believe is justified because Islamic banks lack innovation that could distinguish them significantly (Zaher and Kabir Hassan, 2001).

1.8.6 Comparison between banks and other sectors

The retail sector, the financial sector, the public sector, business administration, leisure, information technology, real estate, administration, support services, education, health, social work, and cultural activities are all examples of service industries (Jessica, 2002; Santos, 2002). The financial sector is a segment of the economy comprised of businesses and institutions that offer financial services to commercial and retail consumers. This sector includes a diverse range of industries, including banks. Banks profit from the difference in interest rates they pay and receive. A business, on the other hand, functions to produce goods or services that it subsequently sells to another company and client. A healthy economy has a strong financial sector (Santos, 2002). Loans and mortgages account for a significant amount of the financial sector's revenue, and it flourishes in a low-interest-rate environment.

On the other hand, Organizations such as hotels often have limited resources in terms of money, time, and marketing abilities, making it difficult to balance diverse strategic orientations. This issue should be addressed in the hotel industry because it is a homogeneous industry that

provides an important part of tourism services. It is also generic in the sense that different levels of hotel quality do not have a direct impact on hotel operations (Tajeddini, 2009).

1.8.7 Comparison between Jordanian culture and Europen culture

Outside of the Levant, Jordan can be very distinct from other Middle Eastern nations. However, it has a lot in common with its neighbours, particularly Syria and Palestine. They have a similar language, culture, cuisine, music, clothes, and traditions (Koburtay, Syed and Haloub, 2020). With one of the weakest economies in the Middle East with limited supply of water, oil, and other natural resources, Jordan's government is heavily dependent on foreign aid. Chronically high rates of underemployment and unemployment, budget and current account deficits, and government debt are some further economic difficulties facing the government (Koburtay et al., 2020).

Jordan is almost totally Arabic; the vast majority of Jordanians (about 80%) are Sunni Muslims, with Shi'ite and Christian minorities (Sexty et al., 2007). Jordan was traditionally a family-oriented society, with most households consisting of immediate family members plus a few older male and female relatives. In the Jordaian culture, religion and supernatural explanations play an essential role in symptom phenomenology, attribution (God's will), and symptom management (Sexty et al., 2007). Which is different from other cultures such as Europen culture. Europen culture, such as British culture, is diverse and influenced by the history of its combined nations, its history, its historically Christian religious life, its interaction with European cultures, the individual cultures of England, Wales, and Scotland, historical and modern migration, and the impact of the British Empire (Inbades, 2016). Therefore, this culture difference between Jordan as an Arabic country against Europen culture could cuase different results in this study, thus further research is important to better understand the banking sector in Jordan.

1.9 Structure of the thesis

This section outlines the thesis' structure, including a summary of each chapter. It helps the reader understand the direction of the study as well as the sequence and placement of various concepts.

1.9.1 Chapter one: Introduction to the study

This chapter provided a brief background of the study and context of the study together with a few details about the variables under investigation from a theoretical perspective. It also established the research problem, research questions, conveyed the aim and objectives of this research, and the structure of the thesis. In addition, this chapter presented a background of the study context. It provided general facts about Jordan. The following sections display an overview of Jordan's economy and an overview of the development of the banking sector in Jordan. The remaining chapters are organised as follows:

1.9.2 Chapter two: Literature review

This chapter presents the existing literature in the areas of market, technology, learning orientations, transformational leadership, service innovation and firm performance, which provides secondary sources of information in the form of previous published articles, journals and books on the research topic. These can be used as a basis for studying the research areas from a theoretical perspective, and the relationship loopholes between the same can be highlighted to demonstrate the potency of the research hypotheses and the differences between Islamic and non-Islamic banks.

1.9.3 Chapter three: Theoretical model

This chapter presents the theoretical model and accompanying hypotheses that will be investigated in this study. The model constructs are identified in this chapter. In addition, the theoretical foundation of this study's produced model is discussed. More precisely, the concept of contingency theory is explained, as well as the importance of its application in the current study. Finally, the research theoretical model is constructed, along with a set of hypotheses that will be experimentally tested in order to meet the research study's goals and objectives.

1.9.4 Chapter four: Research design and methodology

This chapter outlines the research methodology adopted in the current study. More precisely, the two major research paradigms (positivist and interpretivism) are explained, as well as the rationale for adopting the positivism paradigm. In addition, there is a review of the various research methodologies (deductive versus inductive) and research tactics, as well as rationale for the deductive approach and the cross-sectional survey strategy. Furthermore, a comparison of the various data gathering methods is offered, as well as information on the many stages of

designing the questionnaire instrument. The research context, demographics, and sample from which the data will be collected are also described in this chapter. This is complemented by a full description of the study variables measured and the questionnaire instrument's administration process. Finally, an explanation of the statistical approaches will be offered, as well as the reason for their use.

1.9.5 Chapter five: Data analysis

This chapter describes the data analysis and sets out the analytical tools, including the Statistical Package for Social Sciences (SPSS) and Analysis of Moment Structures (AMOS), graphs, and tables used to analyse the data. It presents the descriptive and hypotheses testing analyses (i.e. regression analysis, and Structural Equation Modelling of the data collected from survey). Furthermore, the chapter describes the exploratory and confirmatory factor analysis procedures, tests for validity and reliability of the variables, and the regression analysis subsequently conducted to test the proposed model and hypotheses.

1.9.6 Chapter six: Findings and discussion

This chapter presents a detailed discussion of the analysis of results conducted in Chapter 5. Furthermore, it attempts to position the results achieved for each of the research hypotheses within the relevant extant literature so that differences are highlighted and implications are deduced.

1.9.7 Chapter seven: Conclusion

This chapter provides a summary of this research and reports the main conclusions based on findings from testing the research hypotheses and highlights the contributions of the study in terms of theoretical and practical contributions. This chapter also highlights the limitations of the current study and provides avenues for future research.

2 Literature Review

2.1 Introduction

Since innovation plays a critical role in the success of a firm in gaining sustainable competitive advantages (Lin, Peng and Kao, 2008), numerous studies have attempted to explore different variables on innovation and firm performance.The aim of this chapter is to review the literature on market orientation, technology orientation, learning orientation, transformational leadership, service innovation, and firm performance.

2.2 Service innovation

Given the increasingly competitive corporate environment in which organisations operate, innovation is crucial (Grawe et al., 2009). Most major economies rely significantly on services, and business development is frequently attributed to innovation (McDermott and Prajogo, 2012). If organisational culture encourages creative solutions, problems could be defined and solved in innovative ways. Organisational culture innovation has been found an important factor impacting success of the organisation performance (Uzkurt et al., 2013).

Innovation is seen as a critical aspect in service providers' survival and effectiveness (Tajeddini and Martin, 2019; McDermott and Prajogo, 2012; Jones, et al., 2014). Moreover, Schumpeter (1934) argued that economic development is driven by innovation. Schumpeter defined innovation as a separate activity through which inventions are carried out in the market for a commercial purpose. Innovation allows firms to generate products and/or services, unique from competitors aiming to create value for customers (Clarke and Adler, 2016; Tajeddini et al., 2020).

The concept of "service innovation" was first used by Barras (1986) and since then scholars have developed a considerable body of research on service innovation. Innovation is regarded as a key factor in the survival and performance of service providers (Kayhan et al., 2020). A review of literature on innovation in service indicates that this area, while growing, is still under-researched in the service sector (Kayhan et al., 2020) compared to manufacturing sectors (McDermott and Prajogo, 2012).

Oke (2007) and Feng, Ma and Jiang (2020) have defined Service innovation as the application of new concepts and technologies in the service process to change and improve existing services and products, improve service quality and efficiency, expand service scope, update service content, add new service items, create new value for customers and ultimately enhance competitive advantage of enterprises. "Service innovation operates as the engine of economic growth and pervades all service sectors" (Snyder et al., 2016, p.2401). It has become a term that refers to innovation in different service situations, including service implementation or incremental improvements to existing services (Durst, Mention and Poutanen, 2015). However, Tseng, Wu, Chiu, Lim and Tan (2019) argue that Innovation in service is an ambiguous term that can be regarded as an intangible product as well as a process.

Gong and Janssen (2015) define service innovation as innovation taking place in the various contexts of service, which include the introduction of new services or improvements of existing services. Moreover, it is described as the presentation to current or new customers of a new service (Baba, 2012). Snyder et al., (2016, p.2402) define service innovation as a new "service or such a renewal of an existing service which is put into practice, and which provides benefit to the organisation that has developed it; the benefit usually derives from the added value renewal provides the customers". Service innovation has been linked to the creation of customer value, which is defined as a customer's perceived preference for a product's attributes, performance, and usage consequences (Grawe et al., 2009).

Innovation is considered as a process and/or outcome of undertaking changes in organisational conduct by pursuing new activities, routines and processes in service to enhance the delivery of significant benefits to customers (Bamfo and Kraa., 2019). In the past decade, the body of scholarly research on service innovation has grown considerably. Innovation is considered as a critical factor in service providers' survival and performance (Tajeddini and Martin, 2020; D'Souza et al., 2021). In addition, in the increasingly competitive business environment in

which firms operate, innovation is critical (Grawe et al., 2009). As a result, researchers have provided insight as to how firms innovate and how innovations spread to other firms (Grawe et al., 2009; D'Souza et al., 2021). To remain competitive, service firms such as banks must continuously update their processes and offers (Thakur and Hale, 2013).

Scholars have utilised three approaches to describe, evaluate and explain innovation in service (Flikkema, Jansen and Van Der Sluis, 2007; Witell, Snyder, Gustafsson, Fombelle and Kristensson, 2016). These are the assimilation approach (i.e. where service innovation and product innovation are viewed as similar), demarcation approach (i.e. where service innovation and product innovation are viewed as fundamentally dissimilar) (Taghizadeh et al., 2019; Ordanini and Parasuraman, 2011), and synthesis approach (i.e. where there is a convergence between service and tangible products). This means that tangible products gain importance in the service sector; intangible items, on the other hand, become important features of manufactured goods (YuSheng and Ibrahim, 2018; Witell et al., 2016). In this study, it is most relevant to follow the synthesis approach due to the context of this study. Banks can synthesise their innovations by focusing on tangible aspects of their product (e.g. debit and credit cards, automated teller machine (ATM) cards), which is tougher with intangible products, and leveraging on these to gain superior market performance (Taghizadeh et al., 2019) and market advantage (YuSheng and Ibrahim, 2018) in the industry.

According to O'Cass and Ngo (2010) and Kayhan et al., (2020), service innovation takes two forms: interactive and supportive. Interactive service innovation refers to direct value creation experienced by clients (front end), also known as the service consumption interface by Salunke et al. (2019) (frontstage). It is defined as the extent to which a firm adjusts its service offers (i.e. novel, improved offerings), service delivery (i.e. novel or superior methods of service delivery process), and customisation-related adjustments to satisfy unique customers' six demands (Salunke et al., 2013). Supportive service innovation, on the other hand, is defined as the firm modifying its service production, sourcing, and service quality. According to Salunke et al., (2019), the service providing interface (backstage) typically supports the former.

Management attention to service innovation may appear limited since firms typically do not highlight and manage their service delivery, facility, establishment, and endowment in a formal and structured manner (Gebauer and Friedli, 2005; YuSheng and Ibrahim, 2018). While the

outcomes may appear to be insignificant, changes can have a significant (albeit indirect) impact on financial success (Kindström et al., 2013).

2.3 Firm performance

Firm performance is a broad category that reflects the extent to which the enterprise achieves its market operation, growth and financial objectives in a certain period of time (Feng et al., 2020). To survive in a competitive business environment, every firm should operate under performance-based conditions (Naqbi, Alshurideh, AlHamad and Al Kurdi, 2020; Taouab and Issor, 2019). Performance is the level of target achieved by an organisation, or as an evaluation on the effectiveness of individuals, groups, or organisation. At the individual level, it refers to job satisfaction, achieved goals, and personal adjustment; at the group level, it refers to morale, cohesion, efficiency, and productivity; and at the organisational level, it refers to profit, efficiency, productivity, absenteeism rate, turnover rate, and adaptability (Tseng and Lee, 2014).

Firm performance has become a relevant concept in strategic management research. Many scholars have defined firm performance in different ways; for example, Al-Dmour et al., (2019) have defined performance as the outcome of all of the firm's operations and strategies. Moreover, Feng et al., (2020) have defined it as the assessment of productivity from the overall operations and activities of the business. According to Lin (2005), performance includes not only previous accomplishments but also the potential ability to achieve future goals successfully. The concept of the evaluation of the performance of the business is essential in determining how well the business has been able to utilise its assets for the purpose of generating a better return in terms of revenue and profitability. Dada Ab Rouf Bhat and Vivek Sharma (2022) have defined firm performance as the potential and ability of a business to efficiently utilise the available resources to achieve targets in line with the set plans of the firm, keeping in mind their relevance to the users.

Furthermore, performance is defined as an organisation's achievement of a goal (Sloma, 1980; Tseng and Lee, 2014), or as an assessment of the effectiveness of individuals, groups, or organisations. It refers to job satisfaction, achieved goals, and personal adjustment at the individual level; morale, cohesion, efficiency, and productivity at the group level; and profit, efficiency, productivity, absenteeism rate, and adaptability at the organisational level (Lee, 2014). According to Robbins and Coulter (1996), performance is an objectively existing fact

that provides both objective and subjective evaluation. Every manager's priority in any organisation is to improve performance. To be successful in improving performance, an organisation must establish a comprehensive measurement index that provides managers and employees with clear directions and goals set by the enterprise (Lee, 2014).

Different scholars have proposed a variety of ways to divide and measure enterprise performance based on different research questions. The common method is to divide enterprise performance into two categories: financial performance and non-financial performance (Feng et al., 2020). Performance measurement was traditionally strongly influenced by financial reporting, which resulted in the development of numerous financial measures. Financial performance usually includes pre-tax profit, asset-liability ratio, sales growth rate, liquidity ratio, earning as per share, capital turnover rate, return on net assets and return on investment (Hernaus, Bach and Vuksic, 2012; Wang, Lai and Shou, 2018). Non-finanacial performance is a general statement that covers a wider range than financial performance (Wang, Lai and Shou, 2018; Feng et al., 2020). This mainly includes customer satisfaction, employee satisfaction, organisational operation efficiency, organisational growth and internal process improvement, brand image, reputation, and loyalty (Wang, Lai and Shou, 2018).

The majority of panel data used to determine financial performance, such as financial statements, has a certain degree of objectivity (Huang, 2014; Feng et al., 2021). Non-financial performance is largely influenced by managers' subjective assessments of the state of the firm's operations (Chen et al., 2014). Furthermore, Feng et al., (2021) claim that the firm's non-financial performance—which depends on a particular business cycle to be successful—is largely what determines its financial performance. Because of this, financial performance frequently falls short of non-financial performance.

2.4 Market orientation

The concept of market orientation has been developed by marketing scholars as a strategic framework to explore how firms pursue and secure sustainable competitive advantage (Narver and Slater, 1990; Kohli and Jaworski, 1990). Narver and Slater (1990) and Kohli and Jaworski (1990) coined the concept of market orientation in the early 1990s. The first validated and used market orientation measure was created by Narver and Slater (1990). The authors devised and evaluated a quantitative measure of market orientation (the MKTOR scale). They defined market orientation as a business culture providing superior customer value, created through

three components: customer orientation, competitor orientation, and interfunctional orientation. The desire to achieve this drives an organisation to create and maintain a culture that will produce the necessary market oriented behaviour from employees (Conduit and Mavondo, 2001).

On the other hand, Kohli and Jaworski (1990) used a qualitative technique to investigate the dimensions, antecedents, and implications of market orientation by interviewing a large sample of senior managers in the United States. They suggested that market orientation refers to an organisation's ability to generate, disseminate, and respond to market intelligence (Diamantopoulos and Hart, 1993). Jaworski and Kohli (1993) defined market orientation as an organisation-wide generation of market intelligence pertaining to current and future needs of customers, dissemination of intelligence horizontally and vertically within the organisation, and organisation wide action or responsiveness to market intelligence. These authors developed and validated the MARKOR scale after their foundational work and used it to explore the antecedents and implications of market orientation (see Jaworski and Kohli, 1993; Kohli, Jaworski, and Kumar, 1993). These authors looked at market orientation as a set of firm-level behaviours, such as intelligence generation, intelligence dissemination, and responsiveness, and found that if these activities are managed correctly, organisations can improve their performance (e.g. sales) (Cadogan, Cui and Li, 2003; Jaworski and Kohli, 2017; Crick, 2021). Since these have been described in recent work (see Kohil and Jaworski, 1990), each is only briefly discussed in the following paragraph.

Market intelligence serves as the cornerstone of a behaviour that is market-oriented. Customers' verbalised requirements and preferences are just one aspect of the idea of intelligence creation; it also includes an investigation of exogenous elements that affect their demands and preferences (Jaworski and Kohli, 1993). The fact that each department has a different market lens calls for the involvement of numerous departments in this activity (Kohli et al., 1993). As the interviews went on, it became more and more obvious that effectively meeting market demands required the involvement of nearly all organisational departments: R&D to create and develop a new product, manufacturing to prepare and produce it, purchasing to find suppliers for new parts and materials, finance to fund activities, and so on (Kohli et al., 1993). Responding to market intelligence is the third component of a market orientation. While a corporation can produce intelligence and share it internally, very little will be accomplished until it responds to market needs (Kohli et al., 1993).

Other scholars, such as Mavondo, Chimhanzi and Stewart (2005), have described market orientation as an organisational culture that most effectively and efficiently creates necessary behaviours for the creation of superior value for buyers, and thus, continuous superior performance for the business. Similarly, Suleiman Awwad and Mohammad Agti (2011) defined market orientation as a distinct organisational culture; a fundamental shared set of beliefs and values that put the customers in the centre of the firm's thinking about strategy and operations. Jones and Shaw (2018) defined market orientation as a concept of a business philosophy surrounding the objective of marketing activities being to create value for customers in ways that competitors cannot imitate. Moreover, Crick (2021) defined it as the implementation of the marketing concept and the organisation-wide creation of customer value. The orientation of the market involves the use of superior organisational skills to understand and satisfy customers. It facilitates the ability of an organisation to anticipate, respond to, and capitalise on environment changes, thereby leading to superior performance (Abdulai Mohammed and Yusif, 2012).

A growing body of literature has examined the benefits market orientation brings to a firm (see Jaworski and Kohli, 1993; Mohamoud et al., 2016; Sahi, Gupta and Lonial, 2018). It has been shown to enhance innovation and firm performance in a variety of organisational and industrial contexts (Pattanayak, Koilakuntla and Punyatoya, 2017; Sendaro and Baharun, 2019).

Most authors either adopt the definition of Kohil and Jaworski (1990) or that of Narver and Slater (1990) to measure market orientation. In this thesis, market orientation culture will be used to investigate the impact of market orientation on service innovation and firm performance. Market orientation culture primarily creates superior value for customers through the three dimensions mentioned above: 1) Customer orientation (CO) 2) Competitor orientation (CPO) 3) Inter- functional coordination (IFC), and these components must be supported by a relevant culture (Narver and Slater, 1990).

2.4.1 Customer orientation

Customer orientation has been explained in different ways in the literature (Kohli and Jaworski, 1990; Narver and Slater, 1990) and often associated with terms such as market orientation, and marketing concept. However defined, its fundamental thrust remains the goal of putting customers at the centre of strategic focus (Nwankwo, 1995). Market orientation is very significantly important in aiding organisations to have clear understanding of the market place

and develop suitable and proper products and service strategies to meet customer needs and requirements (Kim and Qu, 2020). Numerous authors have investigated the customer orientation pillar of marketing (see Tajeddini et al., 2010; Crick, 2019; Schulze et al., 2022). Customer orientation as an aspect of market orientation has to do with the culture of placing customers' interests first and requires a thorough understanding of clients' needs so as to fashion products and services of superior value (Narver and Slater, 1990; Schulze et al., 2022). The main aim of customer orientation is to lay a solid foundation of gaining information concerning future clients' strategic actions based on sufficient information provided by customers, hence resulting in creating improved superior value to the customer base (Bamfo and Kraa, 2019).

Narver and Slater (1990) suggest that customer orientation is one of the behavioural components of market orientation. Customer orientation, as conceptualised by Narver and Slater (1990), is an important dimension of market orientation because it will boost the value, satisfaction, and loyalty of customers (Wang, Zhao and Voss, 2016; Frambach, Fiss and Ingenbleek, 2016; Liu, Chen and Gao, 2019). Employees with a customer-oriented organisation are aware of who the customers are and how they should be served. As they learn about the needs of their customers, they are quick to share the new information with other individuals and departments within the organisation to ensure that the firm can continue to keep pace with customer needs, and anticipate future needs (Grawe, Chen, and Daugherty, 2009).

Customer orientation refers to a "degree to which the business unit obtains and uses information from customers, develops a strategy which will meet customer's needs and implements that strategy by being responsive to customers' needs and wants" (Tajeddini, 2011, p. 442). Morever, it refers to a firm's ability to identify, understand, and respond to market desires to achieve competitive advantage (Narver and Slater, 1990). Moreover, customer orientation is an organisational culture that facilitates the understanding of target consumers to create superior value for them continuously (Suleiman Awwad and Mohammad Agti, 2011; Narver and Slater, 1990; Kim and Qu, 2020).

Others claim that to be successful, organisations that are market-oriented should match customer needs with firm competencies. "Understanding what customers want and do not want, can result in greater efficiency, reduce waste in management in manufacturing and enhance competitive advantages" (Tajeddini, 2010). In addition, Leng, Liu, Tan and Pang, 2015 and

Prifti and Alimehmeti (2017) state that customers' current and future requirements are prioritised by companies with a strong customer focus (Ziggers and Henseler, 2016). Customer orientation, as theorised by Narver and Slater (1990), is an important dimension of market orientation. Because it will boost the value, satisfaction, and loyalty of your customers (Wang, Zhao and Voss, 2016; Frambach, Fiss and Ingenbleek, 2016; Liu, Chen and Gao, 2019). Customer orientation aims to satisfy customer needs and help firms to acquire and retain their customers (D'Souza et al., 2021). This is because it gives firms superior abilities to understand and satisfy customers, as well as to develop and sustain close relationships with customers and obtain fast feedback from them (Zhou and Li, 2010). Employees at a customer-oriented organisation understand who their customers are and how they should be treated. They are fast to communicate new information with other individuals and departments within the organisation as they learn about their customers' demands, ensuring that the firm can keep up with current needs and anticipate future needs (Grawe et al., 2009; Narver and Slater, 1990). This enables the firm to find prospective new clients as well as possibilities to provide value to them (Grawe et al., 2009).

Because a firm's commitment to providing superior customer value necessitates responding to anticipated changes in customers' needs, wants, and/or preferences for a market offer, innovation becomes an inherent aspect of doing business for firms committed to providing superior customer value (Racela and Thoumrungroje, 2020). Superior customer value may extend beyond product innovations, as customer-focused businesses will incorporate creativity and innovation into their entire business systems (Racela and Thoumrungroje, 2020).

2.4.2 Competitor orientation

Competitor orientation is an organisational culture that stresses the understanding of both present and potential competitors' short-term strengths and weakness and long-term capabilities (Suleiman Awwad and Agi, 2011; Mulyana and Hendar, 2020; D'Souza et al., 2021). The purpose of a competitor orientation is to provide a solid basis of intelligence pertaining to present and potential competitors for executive actions (Sørensen, 2009).

Competitor orientation as part of market orientation is seen as an organisational strategy that ends up creating behaviour of businesses that improves on the products they deliver to customers (Kohil and Jaworski, 1990). The aim of competitor orientation has to do with providing a strong foundation of intelligence regarding current and future competitors for

strategic action. Those competitors of the business are seen as enterprises that are providing a substitute product by serving the same need of customers (Mubarak, 2019). Competitor orientation involves the ability to create value to improve a firm's performance by looking at competitors and trying to anticipate trends and demands (Schulze et al., 2022). Companies tend to perform better when they face very competitive competitors, albeit this depends on their response capacity, as in highly competitive environments, knowing and understanding the competition enables the firm to survive with success, rather than lose customers and consequently market share (Masa'deh et al., 2018; Schulze et al., 2022).

Cheng and Krumwiede (2012) defined competitor orientation as a firm's ability to recognise, understand, and respond to competitors' actions. Firms that adopt a competitor orientation do an in-depth analysis of targeted competitors and future competitors, then use the information gained to equal or outperform competitors' capabilities (Kohil and Jaworski, 1990; Grawe et al., 2009). In parallel with the customer analysis, the analysis of current and potential competitors must include a whole set of technologies capable of meeting the current and expected needs of the target buyers of the seller (Narver and Slater, 1990). Moreover, competitor orientation can facilitate the capability of firms to adapt to the changing environment. Also, it helps firms configure or reconfigure their resources while collecting competition-related information and developing capabilities to cope with the competitive environment (Zhou and Li, 2010).

Firms with a competitor orientation are interested in intelligence about current and potential competitors. The presence or threat of competition may provide impetus for new service offerings and more efficient resource utilisation (Schulze et al., 2022). Firms will seek information about competing firms' resources and offerings in order to gain or maintain a competitive advantage (Grawe et al., 2009).

2.4.3 Inter-functional coordination

The third behavioural component of market orientation cited by Narver and Slater (1990) is inter-functional coordination (1990). Within the realm of marketing strategy, academics argue that all organisations' functions should cooperate and contribute to disseminate the customers and competitors' information in order to create greater value for customers and in turn to develop a sustainable competitive advantage (Yousef et al., 2020). Inter-functional coordination is the coordinated utilisation of organisational resources to create superior value

for target customers through integration of all functions in the organisation (Narver and Slater, 1990; Tajeddini et al., 2017). Whereas Cheng and Krumwiede (2012) and Alhakimi and Mahmoud (2020) defined it as the synchronisation of communication, information dissemination and other resources along with integration and collaboration of different functional units throughout the organisation to generate value for customers.

The coordinated efforts of different departments are important for the process and implementation of organisational change (Tajeddini et al., 2017; Mathafena and Galawe, 2021) allowing the functions to implement the right actions in response to customers' and generate superior value for customers (Narver and Slater, 1990). The key aspects of inter-functional coordination are acquiring and sharing information between departments, strategising, and implementing strategies, and developing business plans (Tajeddini et al., 2017; Cheng and Krumwiede, 2012). As a result, greater information is disseminated, resulting in a growth in sales and superior market share (Yousef et al., 2020). Collaboration and integration among functions are encouraged in order to capitalise on synergies and build capacity to develop customer, market, and competitor orientation principles (Mathafena and Galawe, 2021). The lack of flexibility, open communication, sharing of information and other systemic and structural formations impedes effective inter-functional coordination (Cheng and Krumwiede, 2012). Mathafena and Galawe (2021) emphasised that inter-functional coordination provides organisational settings where employees and management from diverse functions can share ideas, overcome knowledge boundaries, and positively influence the modification of practices and processes in promoting innovation and market orientation.

2.5 Technology orientation

Due to technology advancement and the shortening life cycle of products and services, firms have been forced to enhance their technological expertise in order to compete in their industry (Masa'deh et al., 2018). Similarly, Hakala (2011) has suggested that long-term sustainability and the value of the organisation's customers should be best achieved by technology. Technology orientation, as a strategic orientation, is defined as the inclination of a firm to introduce or use new technologies, product or innovations (Hakala, 2011; Hakala and Kohtamaki, 2011). Moreover, it can be defined as an organisation's openness to new ideas and its inclination to adopt new technology during the development of products (Tsou et al., 2014; Masa'deh et al., 2018; Mandal, 2019). Yousef et al., (2020) have defined technology orientation as a firm's inclination toward application of latest technology for introducing new

products, besides improving existing products and services through encouraging and supporting innovative ideas. Batra et al., (2015) have defined technology orientation as a firm's "tendency to invest in monitoring and adopting technological innovations". Firms that are technology oriented are more likely to differentiate themselves through innovation (Batra et al., 2015; Frambach et al., 2003), invest in enhanced technologies for better decision making, design technologically advanced products and services (Batra et al., 2015), and foster commitment toward R&D (Hang et al., 2001; Halac, 2015). Further, technology-oriented firms develop the insight to predict technological changes that could emerge in their industry. This helps them in exploiting several opportunities that would go unnoticed within technologically weak organisations (Ramírez-Solis, Llonch-Andreu and Malpica-Romero, 2022).

An organisation which is technology driven perhaps goes beyond expectations in growing maximum return through provision of services and products as customers show keen interest in such kind of services and products. In this way, technology-driven application enables a firm to produce quality products which instantly meet customers' demand, and all this facilitates organisational execution (Yousaf, Sahar, Majid, and Rafiq, 2018, and Yousef et al., 2020).

Technology orientation needs to be in line with the mission and vision of the firm. Therefore, according to the strategic direction, top management should decide on whether to develop technology internally or acquire it from the outside; to what extent to invest in R&D; to compete or to cooperate with the rivals; which alternative way is the best for the firm now and for the future (Halac, 2015).

Moreover, a technologically orientated organisation seeks to gain new and advanced technologies to develop new processes, products, and services in order to satisfy customers' changing needs and to gain an advantage over competitors. It is also often present (referred to as innovation orientation) when organisations implement new ideas, products and processes (Al-Ansaari, Bederr and Chen, 2015; Masa'deh et al., 2018; Schulze et al., 2022). Technology orientation aids organisations in adopting and utilising new ideas and technologies earlier than their competitors (Lee, Dedahanov and Rhee, 2015). According to Tsou et al., (2014), technology is a critical method of connecting firms with customers. Firms use technology to improve their ability to collect customer information. Technology orientation advocates that a firm can adopt its technical knowledge to develop new technical solutions and satisfy customer needs (Tsou et al., 2014). Masa'deh et al., (2018) and Freitas et al., (2013) have indicated that

technology-oriented firms expend their energy on investing and refining superior products rather than studying customer needs. This is because customer value and the long-term success of the firm can be created through new innovations, technological solutions, products, services or production processes (Hakala, 2011), thereby making technological orientation a crucial part of strategic orientation.

Technology orientation causes significant achievements and assists in finding out the technological solutions and ultimately firms satisfy the demands of their clients (Yousef et al., 2020; Chakraborty, Das and Nandi., 2019). Technology has become ever more pervasive in all aspects of life, and has become integral to almost everything, including retail, personal communications, and media (e.g. social media), and entertainment (e.g. streaming services) (Schulze et al., 2022). According to Uzkurt et al., (2013) and Pattnaik and Patra (2018), technology is a driver for banks to success.

2.6 Learning orientation

Learning orientation is a set of organisational values that influence an organisation's proclivity to create and apply knowledge, as well as the extent to which proactive learning occurs (Fang, Chang, Ou and Chou, 2014; Jyoti and Dev, 2015). Learning orientation, because of its effect on an organisation's capability to contest old assumptions about the market (Baker and Sinkula, 1999), is one of the most valuable resources for organisations to maintain a competitive advantage (Lee and Tsai, 2005; Tajeddini, 2009). The development of learning, in its various guises of individual, team and organisational, has been recognised by many as of critical importance to our economic prosperity (Hamzah, Othman and Hassan, 2020). Senge (1994) has argued that, as the world becomes more interconnected and business becomes more complex and dynamic, work must become more "learningful".

Learning orientation is defined as the formation of an organisational culture that influences the tendencies for creating and using information for the organisation (Adıgüzel, 2019). This definition shows that learning orientation requires more than some short-term organisational training and development periods. It reflects the idea that the organisations are willing to "step back, observe their situation, get in line with their objectives, take time and have the courage to change when necessary" (Adıgüzel, 2019). It is also defined as the enhancement of new visions that have the possibility to change behaviour (Tajeddini, 2009; Slater and Narver, 1995). Fang et al. (2014) and Hakala (2011) define it as a set of organisational values that

affects the propensity of an organisation to create and use the knowledge and the degree to which proactive learning takes place. Furthermore, it is defined as a wide range of activities related to the creation and use of knowledge that orients the organisation in the direction of learning (Kumar, Jabarzadeh, Jeihouni, and Garza-Reyes, 2020).

Learning orientation is described as a process of information gathering, dissemination of information and shared interpretation that increases individual and organisational efficiency due to its direct impact on results (Jyoti and Dev, 2015). It also influences a firm's ability to challenge the old assumptions and facilitate new techniques and methodologies (Lee and Tsai, 2005; Baker and Sinkula, 1999). When a firm inspires its employees to learn and encourages them to think "outside the box", the firm fosters a culture conducive to generative learning (Slater and Narver, 1995; Baker and Sinkula, 1999; Fang et al., 2014). New knowledge and insights are created when an organisation learns and adapts (Mavondo et al., 2005). This allows the firm to remain sensitive to market changes and identify market opportunities (Fang et al., 2014).

According to the previous research, learning orientation is important in boosting the efficacy of understanding consumer demands, market changes, and competitor actions, as well as the development of new technologies to generate superior products to those of competitors (Fang et al., 2014). It also refers to how well a business can encourage generative learning as a fundamental capability (Jyoti and Dev, 2015). Learning orientation is composed of three dimensions, namely, commitment to learning, shared vision and open-mindedness (Fang et al., 2014; Jyoti and Dev, 2015; Mahmoud et al., 2016; Tajeddini, 2009).

In the marketing and organisational learning literature, value generative learning is a higher order level of learning (Das, 1991; Hamzah et al., 2020) and requires the following organisational capabilities: commitment to learning, open-mindedness, and shared vision (Calantone et al., 2002; Sinkula, et al., 1997), which are discussed in the following subsections.

2.6.1 Commitment to learning

Dixon (1992) asserts that organisations that consistently work on their development by looking for new opportunities have a strong commitment to the learning process. According to the literature, dedication to learning refers to a company's readiness to modify how it conducts business by blending previously acquired knowledge with newly acquired knowledge (Calisir,

Gumussoy and Guzelsoy, 2013; Dukeov, Bergman, Helimann and Nasledov, 2020). Moreover, it refers to an organisation's ability to establish a learning climate, as well as the level of respect and encouragement for learning (Sinkula et al., 1997). Moreover, it is shown by the firms that constantly analyse the effect of their action and continuously learn and reflect based on the obtained knowledge (Dukeov et al., 2020).

Some researchers (Dixon, 1992; Dukeov et al., 2020; Baker and Sinkula, 1999; Fang, Chang et al., 2014) have argued that commitment to learning is a value that encourages an organisation to learn and facilitates the obtaining and the processing of information about the business environment to develop and capture competitive advantages. This means, for example, handling the information on the firm's internal changes, its successes and failures and production and administrative processes, as well as on its customers, competitors, technologies and other dimensions of the external environment (Dukeov et al., 2020). Calantone et al. (2002) have indicated that the more the organisations encourage learning, the more learning will occur, which is linked with a long-term strategy orientation. Short-term investments will yield long-term gains (Tajeddini, 2009 and Jo, 2022). Similarly, learning is viewed as an essential investment for survival in organisations with high level of learning commitment and short-term investment that result in long-term gains and have effect on long-term strategic direction. According to Slater and Narver (1994), if an organisation does not encourage the development of knowledge, employees will have no incentive to pursue learning activities.

Managers in committed organisations expect employees to use firm time to pursue knowledge outside the immediate scope of their work (Calantone et al., 2002; Tajeddini, 2009). Commitment to learning enhances the effectiveness of managers and leaders of innovation (Tajeddini, 2009). Service firms that perceive their environment as hypercompetitive tend to pursue continuous service innovation. This requires them to build commitment to learning in order to keep abreast of environmental changes (Calantone et al., 2002; Tajeddini, 2009). According to Griese and Kleinaltenkamp (2012), a firm exhibits innovation when it continuously uses the learning process to integrate skills at the organisational level.

2.6.2 Shared vision

Shared vision refers to deeply shared goals and missions, which bring organisational members together in pursuing a certain identity and give these members a sense of destiny (Fang et al., 2014). It can speed up the process of organisational learning (Baker and Sinkula, 1999; Fang

et al., 2014) and provide clear direction for learning that is likely to increase organisational strength and improve the quality of learning (Calisir et al., 2013). Calantone et al., (2002) have stressed that without a shared vision, learning by members of an organisation is less likely to be meaningful. In other words, it is difficult to know what to learn even if they are motivated to learn (Tajeddini, 2009).

This is because a shared vision within the organisation should be universally understood and be able to provide an organisation with a sense of purpose and direction so that it can provide employees with common dominant reasoning and result in employees' commitment to goals rather than their compliance (Fang et al., 2014). It should also inspire workers to achieve desired outcomes (Baker and Sinkula, 1999). Baker and Sinkula (1997) have indicated that without a shared vision, individuals are less likely to know what organisational expectations exist, what outcomes to measure, or what theories in use are in operation. In such an ambiguous environment, even if one is motivated to learn, it is difficult to know what to learn.

2.6.3 Open-mindedness

To secure survival, continuous development and a firm's long-term competitive advantage, its management team must be open to new ideas related to potential products and processes, as well as an organisational model (Baker and Sinkula, 2002). Sinkula et al. (1997) have also indicated that open mindedness is considered to be essential in daily activities and accepting new ideas of an organisation (Sinkula et al., 1997). This is expressed as the willingness to evaluate the organisation's operational routine critically and to accept new ideas (Tajeddini, 2009; Calantone et al., 2002) or to critically analyse its experience to generate new knowledge pertaining to the current situation (Sinkula et al., 1997; Jyoti and Dev, 2015).

Vatamanescu et al. (2017) have noted that a firm's capability to innovate is greatly shaped by the internal context of the organisation, which includes open-mindedness. The serendipity and sagacity of the management team that are important for a firm to be innovative and successful in strategy development are based on managers' knowledge and curiosity, as well as on open-mindedness and the ability to investigate new areas (Dukeov et al., 2020). Moreover, an organisation with open-mindedness will voluntarily update its knowledge about customers and mental models about how a firm can compete successfully in the marketplace (Sinkula et al., 1997; Fang et al., 2014). Open-mindedness prompts an organisation to face challenges in the market and to seek better ways of doing things; open-minded organisations will proactively

overcome marketing myopia, listen to their customers, and engage in unlearning (Fand et al., 2014).

The basic assumption is that open mindedness plays a key role in enabling companies to achieve speed and flixibilty in the innovation process (Calantone et al., 2002: Hernandez-Mogollon, Cepeda-Carrion, Cegarra-Navarro and Leal-Millan, 2010). If a firm wants to be able to accept new ideas and come up with the best innovation strategies and solutions, it must also have an open mind (Dukeov et al., 2020).

2.7 Transformational leadership

As the aim of this study is to examine the moderating impact of transformational leadership between market, technology and learning orientations on service innovation, in this section we will discuss the impact of transformational leadership on the other variables. Leadership style is an attitude adopted by leaders to inspire their subordinates for better performance, surpassing their own set contributions (Shahzad et al., 2018). Nusair, Ababneh, and Bae (2012) have reported that there are almost as many definitions of leadership as there are authors and scholars who have attempted to define the concept. Leadership has been defined in terms of individual traits, behaviour, influence over other people, interaction patterns, relationships, occupation of administrative positions, and perception by others regarding legitimacy of influence (Nusair et al., 2012). The leadership style is the norm of behaviour used by someone when attempting to influence the behaviour of others (Pawirosumarto, Sarjana, and Gunawan, 2017). Every leader has a unique approach to developing, stimulating, and directing the potential of their employees. The reason for the variation is that their leadership styles are also distinct from one another (Pawirosumarto et al., 2017).

In leadership style, there are different characteristics, such as autocratic, bureaucratic, laissez-faire, charismatic, democratic, participative, situational, transformational leadership and transactional leadership (Mosadegh Rad and Yarmohammadian, 2006; Zheng, Wu, Xie and Li, 2019; García-Morales et al., 2012). However, transformational and transactional leadership are the most used styles (Chio et al., 2016; Siangchokyoo, Klinger and Campion, 2020; Alrowwad, Abualoush and Masa'dek, 2020). It has been 40 years since Burns (1978) published the seminal work introducing the concepts of transactional leadership and transformational leadership. Transactional leadership, also known as managerial leadership, focuses on the roles of supervision, organisation, and group performance. Transactional leadership is a style of

leadership in which the leader encourages his/her followers' compliance through both rewards and punishments (Odumeru and Ogbonna, 2013; Birasnav, 2014; Siangchokyoo et al., 2020). Leaders who use the transactional approach, as opposed to transformational leadership, do not seek to change the future; rather, they seek to maintain the status quo. These leaders scrutinise their followers' work to identify flaws and deviations. This type of leadership is useful in crisis and emergency situations, as well as when projects must be completed in a specific manner (Odumeru and Ogbonna, 2013).

Transformational leadership theory has been the most supported leadership theory over the past two decades (Suifan et al., 2018; Jyoti and Dev, 2015), because it articulates a compelling vision, offers clear objectives and provides followers with the support and stimulation needed to carry out the work (Bhandarker and Raj, 2015). Leaders with transformational style are able to make their followers perform towards the vision of the organisation, which, in turn, gives clearer imagination about the desired performance and the goals to be achieved (Al-edenat, 2018). This vision acts as engine that makes the employees think of how this will be done in a perfect and new way (Al-edenat, 2018). Transformational leadership style was first introduced by Burns (1978). Bass (1985) further developed the theory by defining transformational leadership as the ability of leaders to motivate people to achieve performance beyond expectations by transforming people's attitudes, beliefs, and values. (Raj and Srivastava, 2016). Transformational leadership, according to Bhandarker and Raj (2015), is more positive and ultimately more effective than transactional in motivating followers to achieve higher performance.

Transformative leaders, according to Burns (1978), are those who can influence their followers by increasing conventional goals and assisting them in increasing their self-confidence at work. Zheng et al. (2019) and Megheirkouni (2017) have defined transformational leadership as charismatic, visionary, and inspirational leadership that impact employees to extend their targets and perform beyond the expectations set in the general work. Transformation leadership involves creating a vision and promoting an organisation's sense of belonging (Suifan et al., 2018). It also deals with how leaders creatively envision future scenarios for their organisations and help workers boost their self-confidence by recognising their potential, communicating an attainable goal and vision, defining needs, and working together to meet those needs (Jyoti and Dev, 2015; García-Morales et al., 2012).

According to Bass (1999), Shahzad et al. (2018), Amankwaa, Gyensare and Susomrith (2019), and Nusair et al. (2012), transformational leadership has four dimensions: Idealised influence, intellectual stimulation, inspirational motivation, and individualised consideration. A brief description of each dimension is presented next. Idealised influence relates to the capacity of the leaders to act as role models, thereby creating in followers a sense of admiration, respect, and trust (Sattayaraksa and Boon-itt, 2016). Such leaders display idealised influence, something closely related to charisma (Nusair et al., 2012). Intellectual stimulation is challenging old assumptions, beliefs and traditions and encouraging new ways of thinking (Amankwaa et al., 2019). In addition, encouraging followers to question their own values, assumptions and beliefs and even those of their leaders (Jyoti and Dev, 2015). Transformational leadership applies intellectual stimulations and fosters innovation and creativity by reframing new problems and approaching old situations in new and novel ways (Nusair et al., 2012). Individualised consideration stands for leaders' behaviour that pays special attention to everyone's need for achievement and growth (Bass and Avolio, 1999; Nusair et al., 2012). This refers to treating followers as individuals and not just as members of a group. Leaders will satisfy their followers by advising, supporting, and paying attention to their individual needs, and motivate them to develop themselves (Jyoti and Dev, 2015). Inspirational motivation consists of leaders giving meaning and challenge to the work of followers and using inspiring messages to stimulate emotion. (Suifan et al., 2018). It is defined as the capacity of a leader to act as a model for subordinates. Also, the ways leaders use to inspire their followers to achieve both personal and organisational goals (Zheng et al., 2019: Amankwaa et al., 2019).

2.8 Summary of this chapter

This chapter has reviewed the previous studies about service innovation, firm performance, market orientation, technology orientation and learning orientation, as well as transformational leadership. In addition, the dimension of market orientation culture (customer orientation, competitior orientation and inter-functional orientation). Then, different dimensions of learning orientation (commitment to learning, shared vision and opem-mindedness). In addition to the dimensions above, this study measures the financial performance of banks by ROA, ROE, ROI and the performance in general, which are the most common measures in the literature, while non-financial performance by image brand, loyalty and reputation. The other chapters of this thesis will benefit from this literature review, specifically Chapter 3 that focuses on the relationship between the variables.

3 Theoretical framework and hypotheses development

3.1 Introduction

In the previous chapter, the shortcomings of the existing literature on market orientation, technology orientation, learning orientation, transformational leadership, service innovation and firm performance were identified. This chapter aims to address these limitations by developing a theoretical model that brings to light the full potential of the impact of market, technology, learning, transformational leadership on service innovation and firm performance. The remainder of this chapter is organised as follows. In the next section, the constructs forming the theoretical model developed in this study are identified and explicitly reported. In the third section, the core theories guiding the development of the theoretical model are presented. Section four focuses on describing and explaining the theoretical model, while section five articulates the hypotheses linking together the constructs of the theoretical model. The last section of this chapter provides a summary of information presented in this chapter.

3.2 The theoretical foundation of the research

3.2.1 Contingency theory

The contingency theory of organisational structure presently provides a major framework for the study of organisational design (Donaldson, 2006; Hus, Liu, Tsou and Chen, 2019). It holds that the most effective organisational structural design is where the structure fits the contingencies (Donaldson, 2006). Contingency theory (CT) has dominated the study of organisational design and performance over the last 20 years (Drazin and Van de Ven, 1985). Different approaches to identifying "fit" have been introduced to clear up the uncertainty around the operationalisation of fit within the CT (Venkatraman, 1989; Drazin and Van de Ven, 1985; Otley, 2016). CT operates under the premise that no organisational, management, or operational system can be equally applicable and/or effective in all contexts and

environments (Drazin and Van de Ven, 1985; Jayaram, Ahire and Dreyfus, 2010). Various approaches to define "fit" have been suggested to clarify the confusion concerning the operation of fit within CT (Venkatraman, 1989; Drazin and Van de Ven, 1985; Zhang, Linderman and Schroeder, 2012). Drazin and Van de Ven (1985) have suggested three fit approaches: the selection approach, the interaction approach, and the system approach, whereas Venkatraman (1989) and Otley (2016) emphasised the CT perspective on moderation and mediation. The following are detailed explanations for each of these different approaches.

3.2.1.1 The selection approach

The selection approach considers fit to be a relationship or congruence between organisational context (e.g. technology, size, or environment) and organisational structure (e.g. formalisation, complexity), with no regard for the potential impact of that congruence on firm performance (Drazin and Van de Ven, 1985). The natural and managerial perspectives have been used to justify this lack of attention to the impact of context-structure fit on performance (Drazin and Van de Ven, 1985).

According to the natural perspective, only high-performing organisations survive, because of their continuous and gradual adaptation or fit to the environment (Drazin and Van de Ven, 1985). Given this viewpoint, it is thought sufficient to test only the relationship between context and structure, without explicitly including performance. The managerial perspective extends beyond the natural perspective by considering organisational design at both the macro- and micro-levels (Drazin and Van de Ven, 1985). This viewpoint assumes that constraints are imposed by an organisation's macro levels on its micro levels, preventing the latter from fully adopting the structural design most appropriate for their specific conditions. As a result, all structural variables constrained by macro levels can be examined for their fit with context using the selection approach, whereas structural variables that are not constrained can interact with context to predict variation in performance and thus must be examined using the interaction approach (Drazin and Van de Ven, 1985).

3.2.1.2 The interaction approach

In contrast to the above-mentioned selecting method, "the interpretation of fit is that it is an interaction effect of the context and structure of an organisation on performance" (Drazin and Van de Ven, 1985, p.517). The emphasis here is on explaining variations in organisational performance resulting from the interaction of organisational structure and context, rather than

on comprehending the congruence between context and structure as in the selection approach (Drazin and Van de Ven, 1985). Although inconsistent findings have been produced about the multiplicative term produced to represent the interaction in the regression equations, the interaction approach as a technique of operationalising fit is extensively diffused in the academic literature (Luft and Shields, 2003; Drazin and Van de Ven, 1985).

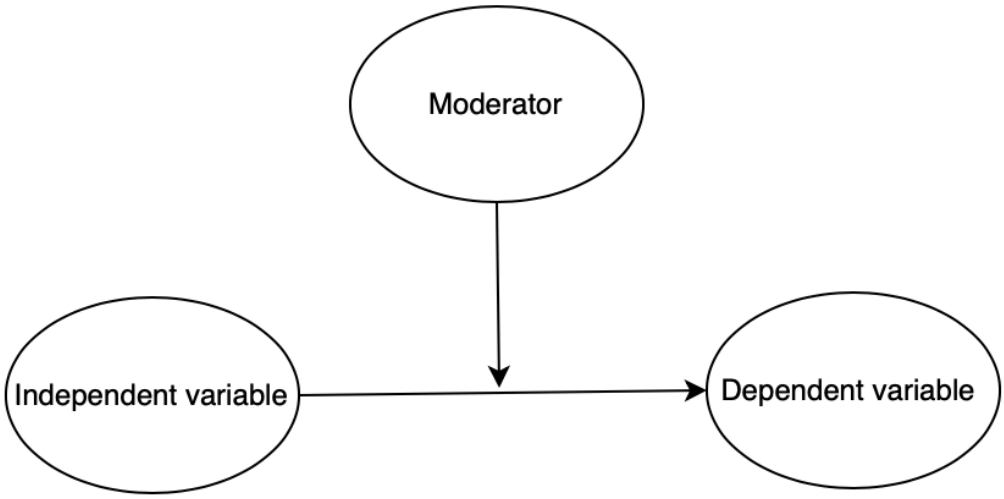
3.2.1.3 The system approach

The system approach criticises the previous two approaches because they take a reductionist approach, assuming that an organisation can be decomposed into several elements that can be investigated independently (Drazin and Van de Ven, 1985). Studies that use the selection and interaction perspective of fit tend to concentrate on how single contextual factors influence single structural traits, as well as how these pairs of context and structure elements interact to explain performance (Drazin and Van de Ven, 1985). The findings of each examination are then combined to form conclusions about the entire organisational system (Drazin and Van de Ven, 1985). To avoid the reductionism problem, the system approach advocates for a multivariate analysis that addresses the fit between several contingent, structural, and performance variables at the same time (Miller, 1981).

3.2.1.4 The moderation perspective

Within CT, the moderation perspective suggests that a link between one independent variable and one dependent variable is dependent on the level of a third variable known as the "moderator" (Frazier et al., 2004; Venkatraman, 1989). This type of interaction is depicted in Figure 3-1. A moderator, on the other hand, can moderate either the shape or strength of the presumed link, and identifying the type of moderation is crucial in determining the right statistical analysis required to detect it (Frazier et al., 2004; Venkatraman, 1989). Depending on the theoretical argument, a specific moderation form, coupled with the proper statistical analysis, can be depended on to evaluate it.

Figure 3- 1: The moderation perspective



As the description above shows, the viewpoints of moderation constitute one distinct theoretical conception. As a result, depending on the conceptual argument of the research, a single variable can be either a moderator or a mediator, but the same variable can be conceptualised as a moderator in one study and as a mediator in another (Frazier et al., 2004). In this thesis, we seek to examine the impact of transformational leadership as a moderating impact between market orientation, technology orientation, learning orientation and service innovation.

3.3 Theoretical model

The aim of the study is to examine the impact of market orientation, technology orientation, learning orientation on service innovation and firm performance. Moreover, to explore the impact of transformational leadership as a moderating impact between market,, technology, learning orientations and service innovation. The theoretical model developed in this thesis makes use of the one well known theory discussed above, namely CT. The proposed model

assumes a direct positive impact of market orientation, technology orientation and learning orientation on service innovation and a direct positive impact of service innovation on firm performance.

More specifically, by adopting the mediation perspective, the model suggests a positive impact of transformational leadership as a moderator impact between market orientation, technology orientation, learning orientation and service innovation. Additionally, three contextual variables are included in the recommended model as control variables, given their projected direct effect on firm performance, in order to provide solid findings in connection with the impact of service innovation on firm performance. These variables include the size of the firm, its age, and the type of bank. This reasoning is shown in Figure 3-2, which illustrates the theoretical model that will be examined in this research study.

3.4 Hypothesis development

Based on the theoretical model presented in Figure 3-2, several hypotheses were developed and then empirically tested to examine the impact of market, technology and learning orientations and transformational leadership on service innovation and financial performance and non-financial performance of banks in Jordan. The development of research hypotheses (H1- H8) is explained below.

3.4.1 Market orientation and service innovation

The concept of market orientation was developed by Narver and Slater (1990) and Kohli and Jaworski (1990). It is one of the most significant methods for strategic management, as well as the core of marketing literature (Prifti and Alimehmeti, 2017). Market orientation refers to a firm's superior ability to clarify and satisfy its customers (Day, 1994; Atuahene-Gima, 1996; Yeh, 2016; Cantaleano, Rodrigues and Martins, 2018). According to Mahmoud et al. (2016), market orientation is defined as a customer-driven technique that involves, among other things, identifying unmet consumer demands, aligning these with firm skills, and then getting input from customers on the acceptability of these new offers. A growing body of literature has investigated the advantages of market orientation for a firm (see Jaworski and Kohli, 1993; Mohamoud et al., 2016; Sahi, Gupta and Lonial, 2018). It has been shown to improve firm performance and innovation in a variety of organisational and industrial contexts (Pattanayak, Koilakuntla and Punyatoya, 2017; Sendaro and Baharun, 2019).

Market orientation has been studied primarily as a determinant of innovation (Cheng and Krumwiede, 2012; Li-Sheng Chu, Wen-Hong Chiu and Hui-Ru Chi, 2015; Kolbe, Frasquet, and Calderon, 2021). Market orientation impacts the capability of innovation through an understanding of the customer, increases production efficiencies and improves sales and profitability (Ho, Nguyen, Adhikari, Miles and Bonney, 2018; Bamfo and Kraa, 2019). Service innovation refers to a firm's receptivity and inclination to adopt novel ideas that lead to developing and launching new products (Hurley and Hult, 1998; Yeh, 2016) and is a primary contributor to organisational success (Hult et al., 2004; Yeh, 2016).

A significant number of studies have indicated that a market-oriented firm generates superior service innovation (Chenge and Krumwiede, 2012; Kocak et al., 2017; Serafim and Verissimo, 2021). Innovation success depends on the firm's relationship with customers in service industries such as banking (Atuahene-Gima, 1996). Market-oriented firms can keep existing customers satisfied and loyal, attract new customers, accomplish the desired level of growth and market share and, as a result, achieve desired levels of innovation and firm performance (Chenge and Krumwiede, 2012). According to Baker and Sinkula (2005) and Yeh, (2015), firms with a strong market orientation can obtain, process and store market information that enables them to discover and respond to customer needs, thereby leading to timely new service introductions that offer unique benefits and are superior in quality to alternatives. Moreover, to produce successful innovations, service firms have a need for greater degree of market orientation (Atuahene-Gima, 1996).

Many studies have examined the impact of market orientation on innovation (see Barnabas and Mekoth, 2010; Suleiman Awwad and Mohammad Agti, 2011; Ahmed Zebal and Saber, 2014; Pattanayak et al., 2017; Sendaro and Baharun, 2019; Serafim and Verissimo, 2021). Newman, Prajogo and Atherton (2016) have examined the effects of market orientation on exploratory and exploitative innovation, and the moderating effects of family ownership on these relationships from 228 firms in the Australian service sector. Their findings highlight the need for managers to build a strong market orientation in order to promote innovation. Ho et al. (2018) have examined the relationship between market orientation and innovation in an agricultural value chain in the emerging economy of Vietnam. Customer orientation and inter-functional coordination are positively related to innovation. Moreover, Kocak et al. (2017) examined the effects of market orientation on both innovation and firm performance within

the context of entrepreneurial firms in Turkey, another emerging economy. The results indicated that market orientation leads to radical innovation.

Mahmoud et al., (2016) have examined the relationship between market orientation (behaviour), learning orientation and innovation; and assessed the roles of innovation, market orientation and learning orientation in firms' business performance, using the Ghanaian banking domain as a study context. The results demonstrate that market orientation has significant association with innovation. Furthermore, Mahmoud et al., (2016) have pointed out that banks should develop market orientation culture to understand the needs of customers and competitive situations and improve their performance (Sendaro and Baharun, 2019).

However, Serafim and Verissimo (2021) have investigated the impacts of customer orientation, competitor orientation, learning orientation, technology orientation, entrepreneurial orientation on hotel innovation and performance. Data from 69 hotels in four Angolan provinces were analysed using (PLS) approach and multi group analysis. The results indicated that technology, customer orientation and competitor orientation have negative and non-significant impact on innovation, while learning orientation and entrepreneurial orientation have a positive impact on innovation.

Moreover, Bamfo and Kraa (2019) have assessed the impact of market orientation on performance of small and medium enterprises (SMEs) and the mediating role of innovation. The study was conducted on a total of 500 SMEs. The findings indicated that innovation partially mediates between customer orientation and performance. Innovation fully mediates between customer orientation and performance, whereas innovation has no mediation role between competitor orientation and performance. Alhakimi and Mohmoud (2020) have investigated the impact of market orientation on small and medium enterprises' (SMEs) innovativeness in Yemen. The results indicated that customer orientation and supplier orientation have a significant impact on SEM innovativeness, whereas the other two dimensions – competitor and inter-functional coordination – do not have a significant impact on SEM innovativeness.
Therefore, this thesis proposes the following hypothesis:

H1: **Market orientation in banking industry positively influences service innovation**

3.4.2 Technology orientation and service innovation

Technology orientation is defined as an organisation's openness to new ideas and willingness to adopt new technology during product development (Masa'deh et al., 2018; Ramírez-Solis, Llonch-Andreu and Malpica-Romero, 2022). Kocak et al., (2017) and Tsou et al. (2014) emphasised that strong technology orientation is a starting point in innovative orientations, because of their strong commitment to R&D and the application of the latest technologies. Furthermore, Tsou et al., (2014) and Masa'deh et al., (2018) have emphasised that technology-oriented organisations are proactive in acquiring new technologies and applying the latest technology to develop their services.

The driving force behind the commercial success of new products in such markets is the technological and production proficiency of firms (Adams, Freitas and Fontana, 2019). Firms with a technology orientation seek to acquire technological knowledge and use it in the development of new products or processes. Firms' technical skills, R&D resources and technological base can be central in bringing innovation and better-designed products into the market (Tsou et al., 2014). Therefore, such technology-oriented firms are proactive in acquiring new technologies and applying the latest technologies to develop new services (Tsou et al., 2014; Kocak et al., 2017).

Many studies have studied the impact of technology orientation on innovation (e.g. Leng, Liu, Tan and Pang, 2015; Adams et al., 2019). For example, Leng et al., (2015) have developed a concept of an alignment between market and technology orientations (MTs) and investigated the differences in new product innovation activities and performance among four groups of high-tech firms. Koca et al., (2017) have examined the effect of market, technology, and entrepreneurial orientation on both innovation and firm performance in 818 small and medium enterprises in Turkey. The results indicated that technology orientation is radical innovation. Moreover, Adams et al., (2019) explored the impact of three types of strategic orientations: customer, technology and combined customer/technology orientation. The results indicated that technology orientation is boosting innovation in organisations. Moreover, Ramírez-Solis et al., (2022) analysed the role of relational capital and technology orientation in innovation to appreciate its final impact on firm performance. The study found a positive relationship between them in a sample of Greek SMEs.

Moreover, Joensuu-Salo, Kangas and Mäkipelkola (2021) have examined the effect of market orientation and technology orientation on service innovation capability in SMEs operating in the field of social and health care. In addition, this study examined the obstacles to using digitalisation and new technologies in service innovations. Mixed methods design was applied, so both quantitative and qualitative data were used. The results from the quantitative part of this study show that both technology orientation and market orientation have a positive and statistically significant effect on service innovation capability in SMEs operating in the field of social and health care. On the other hand, Ramírez-Solis, Llonch-Andreu and Malpica-Romero (2022) have examined the relationship between the firm's relational capital and fundamental strategic orientations that a firm can adopt and how these different orientations have affected innovation and organisational performance in 360 Mexican SMEs. The results revealed a nonsignificant relationship between technology orientation and innovation.

Therefore, this thesis proposes the following hypothesis:

H2: **Technology orientation in banking industry positively influences service innovation**

3.4.3 Learning orientation and service innovation

The action of creating and applying knowledge to improve competitive advantage is referred to as learning orientation (Mahmoud et al., 2016). Learning takes place primarily as a result of organisational engagement with and observation of the environment (Calantone et al., 2002). This includes gathering and disseminating information about customer demands, market changes, and rival actions, as well as developing new technologies to provide improved products and services (Hurley and Hult, 1998; Calantone et al., 2002; Mahmoud et al., 2016). Moreover, organisational learning is associated with the development of new knowledge, which is crucial in determining a firm’s innovation and performance level (Hurley and Hult,1998).

Learning orientation has been considered vital in service organisations (Awasthy and Gupta, 2011). Scholars have pointed out that learning orientation and innovation are highly linked (Calantone et al., 2002; Hurley and Hult, 1998; Raj and Sirvastava, 2016). Calantone et al., (2002) argue that the higher the extent of learning orientation, the stronger the influence on innovation. Similarly, Ghasemzadeh et al., (2019) have pointed out that the acquisition of

knowledge and incorporation of existing new knowledge via organisational learning improve service innovation.

Many studies have studied the impact of learning orientation on innovation (Jiménez-Jimenez et al., 2008; Jiménez-Jiménez and Sanz-Valle, 2011; Calisir et al., 2013; Ratten, 2016; Ghasemzadeh et al., 2019; Adiguzel, 2019; Milbratz et al., 2020). For example. Milbratz et al. (2020) have examined the influence of organisational learning and service innovation on organisational performance in Brazilian architectural KIBS. The results indicated that organisational learning is significantly linked to service innovation and so is service innovation to organisational performance.

Kumar et al., (2020) have explored the effect of operations strategy (cost, quality and delivery) and supply chain integration on innovation performance under the influence of learning orientation in UK manufacturing firms. The findings indicated that learning orientation does not have a direct impact on innovation performance. Furthermore, Ramírez-Solis et al., (2022) have examined the relationship between the firm's relational capital and fundamental strategic orientations that a firm can adopt and how these different orientations affect innovation and organisational performance in 360 Mexican SMEs. The results revealed a negative relationship between learning orientation and innovation. However, few studies have studied these relationships in banking industry.
Therefore, this thesis proposes the following hypothesis:

H3: **Learning orientation in banking industry positively influences service innovation.**

3.4.4 Transformational leadership: moderating effect

The influence of leadership and different leadership styles on innovation has been in focus in more recent times (Knezović and Drkić, 2021; Sattayaraksa and Boon-itt, 2016). Regarding perception of the effects of transformational leadership on the relationship between market orientation, technology orientation and learning orientation on service innovation, Bass (2000) defines transformation leadership as the kind of leadership that is promoted by creating a vision that is given meaning and motivation. According to Bass, Avolio, Jung, and Berson (2003), transformational leadership is more effective because it empowers employees by transforming them into individuals and teams focused on service, quality, profitability, and high return. Thus,

transformational leadership's proactive behaviour should have a significant impact on market orientation, technology orientation, learning orientation, and service innovation.

Transformational leadership in the banking industry enhances the motivational level of employees by demonstrating confidence, energy, and enthusiasm (Bhandarker and Raj, 2015). Organisational literature has identified the importance of transformational leadership for learning orientation (García-Morales et al., 2012; Jaiswal and Dhar, 2015; Imran, Ilyas, Aslam and Ur-Rahman, 2016; Liao et al., 2017); market orientation (Menguc, Auh and Shih, 2007); technology orientation (Yang and Yang, 2018); and service innovation (Afriyie, Du, and Ibn Musah, 2019; Raj and Srivastava, 2016).

Without appropriate leadership, creating a market orientation is simply not possible, given the influence that senior management leadership and, in particular, transformational leadership have on market orientation. The influence of top management on strategy formation, strategy implementation, and culture cultivation therefore cannot be overemphasised. Marketing literature underscores the significance of the role of senior management (Menguc et al., 2007; Dahleez and Abdelfattah, 2021). For example, Narver et al., (1998) have claimed that top management plays a critical leadership role in changing a culture in general, and in creating a market orientation in particular. Moreover, Menguc et al., (2007) have indicated that the way to build market orientation is to either nurture or hire a transformational leader.

Transformational leadership is a kind of leadership that is promoted by creating a vision that gives meaning and motivation (Amankwa et al., 2019). It is defined as a process in which leaders are available and their employees' attention is raised (Afriyie et al., 2019). Afriyie et al. (2019) have suggested that transformational leadership is more effective because transformational leaders empower employees by turning them into individuals and teams with strong commitment, focused on service, quality, profitability, and high returns. Thus, the practice and behaviour of transformational leadership should have a significant impact on innovation (Rai and Srivastava, 2016).

The influence of leadership and different leadership styles on innovation has been in focus in more recent times (Knezović and Drkić, 2021). Along past years and by scholars in different contexts and industries, a huge number of inferences have been obtained regarding the effects of specific styles of leadership on innovation (Prasad and Junni, 2016; Al-edenat, 2018).

Leaders with transformational leadership style are able to make the followers perform towards the vision of the organisation, which, in turn, gives clearer imagination about the desired performance and the goals to be achieved. This vision acts as an engine that makes the employees think of how this will be done in a perfect and new way. This also enhances the opportunity for more innovation actions (Prasad and Junni, 2016). Transformational leaders are seeking that kind of superior performance which is beyond the expectations (Bai, Lin, and Li, 2016). This, in turn, results in enhancing employees' capabilities towards critical thinking and generating new ideas while performing, which may bring about innovation services (Mittal and Dhar, 2015; Prasad and Junni, 2016).

According to Tayal et al., (2018), bank innovation will be created when employees are motivated by leaders to communicate openly and thereby share their thoughts among themselves. Organisations need effective leadership for improvement of organisational learning in organisations (Gong, Huang and Farh, 2009). Imran et al., (2016) and Awasthy and Gupta (2011) have indicated the importance of transformational leadership to foster learning orientation in the banking industry. Because transformational leaders can impact learning orientation by being role models, showing IC (individual consideration), promoting IS (intellectual stimulation), providing IM (inspirational motivation), and creating II (idealised influence) (Sattayaraksa and Boon-itt, 2016).

As Yang and Yang (2018) have indicated, over the past decade, transformational leadership has attracted widespread attention and has been found to have a strong effect on R&D. Moreover, research shows that transformational leadership facilitates firms' technological innovation. If a firm is technology oriented, it is easier for subordinates under the influence of a transformational leader to apply advanced technologies or methods and successfully implement the related activities (Chen et al., 2014). Rather, they are more willing and confident about asking employees to view sophisticated technologies and methods as tools to apply during the product development process, by means such as engaging in innovation (Chen et al., 2014). Transformational leadership boosts employees' innovation behaviour by providing empowerment, resources support, task challenges and rewards. It therefore stimulates employee intellectual capability development to perform in creative ways, thereby enhancing the organisation of overall service innovation (Liu and Lee, 2019).

Many scholars have examined transformational leadership as a moderating impact between different variables (see Jansen, George, Van Den Bosch, and Volberda, 2008; Engelen et al., 2015; Reuveni and Vashdi, 2015; Durmusoglu et al. 2018; Afriyie et al., 2019; Ullah et al., 2021; Wang, Hug and Tian, 2021; Ali Ababneh, Awwad, and Abu-Haija, 2021; Asad et al., 2022). For example, Afriyie et al. (2019) have investigated the extent to which transformational leadership influences the effect of innovation on marketing performance and how such an effect could be managed for SME development. Engelen et al., (2015) have used insights from the resource-based view and upper echelons perspective to introduce top management's transformational leadership behaviours as moderators in the EO-performance relationship. Asad et al., (2022) have also examined the moderating role of transformational leadership for gaining safety performance through safety culture and safety climate. Studies have examined the direct impact of transformational leadership on learning orientation, market orientation and technology orientation (Menguc et al., 2007). However, few studies have focused on the moderating impact of transformational leadership between market orientation, learning orientation and technology orientation on service innovation in banking industry. Thus, we propose the following hypotheses:

H4: **Transformational leadership in banking industry moderates the relationship between market orientation and service innovation.**

H5: **Transformational leadership in banking industry moderates the relationship between technology orientation and service innovation.**

H6: **Transformational leadership in banking industry moderates the relationship between learning orientation and service innovation.**

3.4.5 Service innovation and firm performance

As a crucial aspect of firm evolution, innovation is regarded as a critical issue for firm growth and long-term progress (Al Naqbia et al., 2020). Innovation can be regarded as a valuable and effective tool for any firm seeking to achieve sustainable development, maintain a competitive advantage, and gain access to new markets (Al Naqbia et al., 2020). The relationship between service innovation and firm performance has been widely researched (Tsai and Wang, 2017; Berraies and Hamouda, 2018; Anning-Dorson, 2018; Taghizadeh et al., 2019; Al Naqbia et al., 2020). According to some researchers, concentrating excessively on one particular innovation type does not improve business performance (Damanpur et al., 2009; Lim, Preis, Lee, Mangematin, and Kim, 2020). However, other academics concur that service innovation is

crucial for enhancing firm performance (Feng et al., 2020). Any firm can use innovation as a valuable and effective tool to achieve sustainable development, maintain a competitive advantage, and enter new markets (Al Naqbi et al., 2020).

Service innovation adds value to the business, leading to competitive advantages (Fikri, Ratnasari, Ahmi, and Kirana, 2022). Additionally, according to the researchers, the capacity to provide service innovation results in the creation of new market niches that can be utilised by the business. This allows the business to draw in more clients, which boosts market share and firm performance. Developing as an essential aspect of firm evolution, innovation is considered as the significant issue for firm growth, and long-standing progress. According to Damanpour (1991), Atalay, Anafarta and Sarvan (2013) and Damanpour, Sanchez-Henriques and Chiu (2018), the source of competitive advantage of firms depends on their ability to innovate. Customers are always looking for new services that meet their peculiar needs (Asaah et al., 2019). Tsai and Wang (2017) have found that service firms with more innovation service tend to have higher performance that leads to higher profitability and growth. Similarly, Uzkuret et al., (2013) and Gunday et al., (2011) have suggested that innovation plays a critical role in facilitating superior firm performance in service firms.

Furthermore, most extant literature has taken a general view that service innovation is beneficial to performance of the service-orientated firms, but few studies have examined under what conditions innovation service is driven to be more or less likely to facilitate the performance (Tsai and Wang, 2017; Beynon et al., 2020). Researchers have posited that the success of a service innovation depends on contingencies factors in service-oriented firms (Benner and Tusham, 2003; Gupta, Smith and Shalley, 2006; Tsai and Wang, 2017). In the case of banks, Oliveira and von Hippel (2011) and Feng et al., (2020) have mentioned that banks can improve the competitiveness of their service products through interaction with customers.

In the literature, scholars have examined the impact of service innovation on firm performance and discussed this relationship from different perspectives and situations (Chen et al., 2009; Jimenez and Sanz-Valle, 2011 and Gunday et al., 2011; Lin, 2013; Wang, 2017; Tajeddini, Altinay and Ratten, 2017; Milbratz et al., 2020; D'Souza et al., 2021). For example, Taghizadeh et al., (2019) have examined the influence of four organisational culture traits: consistency, cooperativeness, effectiveness, and innovativeness, on radical and incremental

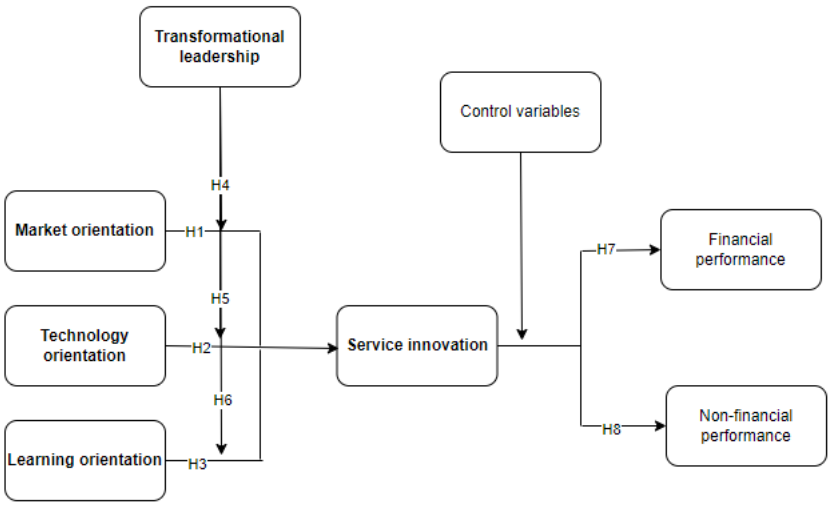
types of service innovation, which led to new service market performance in the banking sector in Bangladesh. Moreover, Berraies and Hamouda (2018) have examined the effect of customer empowerment on financial performance and the role of innovation and customer satisfaction as mediating variables in this relationship in commercial banks in Tunisia. Feng et al., (2020) have provided a quantitative review on the service innovation-performance relationship based on research findings reported in the extant literature. The results found that service innovation has a significant positive impact on firm performance. Practical evidence on the effect of innovation on firm performance is plentiful, as most studies show a positive relationship between innovation and firm performance (Feng et al., 2020; Berraies and Hamouda, 2018). As a result, given that many studies show a positive relationship between innovation and firm performance (Al Naqbia et al., 2020), banks should encourage innovation in order to achieve better performance.

Therefore, we propose the following hypotheses:

H7: **Service innovation in banking industry positively influences financial performance.**

H8: **Service innovation in banking industry positively influences non-financial performance.**

Figure 3- 2: Theoretical framework



3.5 Summary of chapter three

To summarise, the proposed theoretical framework of the study has been developed as shown in Figure 3-2. The core theory (i.e. CT) guiding and supporting the developed model of this

study has been discussed and the way and importance of its use in the current study has been explained and justified. The arrows show that market orientation has an impact on learning orientation which, in turn, influences service innovation, which then affects firm performance (Mahmoud et al., 2016; Uzkurt et al., 2013; Tajeddini, Altinay and Ratten, 2017). However, the relationship of technology orientation with service innovation has not been clarified by research (Adams et al., 2019). In addition, there is no clarity on the moderating effect transformational leadership has on the relationship between learning orientation and service innovation.

Moreover, the thesis is answering these three research questions below by testing eight hypothesis in Table 3-1 below. Hypothesis H7 and H8 are answering question (1). Hypothesis H1,H2, and H3 are answring question (1A). Finally, hypothesis H4, H5, and H6 are answring question (1B).

Q (1) What is the impact of service innovation on firm performance in the banking sector of Jordan?

Q (1A) What are the impacts of market, technology and learning orientations collectively as three key strategic orientations on service innovation and firm performance?

Q (1B) What is the moderating impact of transformational leadership between market, technology and learning orientations and service innovation and in turn on improving firm performance?

Table 3- 1:Summary of the research hypotheses

NO.	Hypotheses	Expected result
H1	Market orientation in banking industry positively influences service innovation.	+
H2	Technology orientation in banking industry positively influences service innovation.	+
H3	Learning orientation in banking industry positively influences service innovation.	+
H4	Transformational leadership in banking industry moderates the relationship between market orientation and service innovation.	+
H5	Transformational leadership in banking industry moderates the relationship between technology orientation and service innovation.	+
H6	Transformational leadership in banking industry moderates the relationship between learning orientation and service innovation.	+
H7	Service innovation in banking industry positively influences financial performance.	+
H8	Service innovation in banking industry positively influences non-financial performance.	+

4 Methodology

4.1 Introduction

After presenting the conceptual framework and associated hypotheses in chapter 3, this chapter provides the basis for empirical analysis by identifying the appropriate methodology to examine the impact of market, technology and learning orientations on service innovation and firm performance, also examine the moderating impact of transformational leadership between market, technology, learning orientation and service innovation. The identification of the appropriate methodology requires a good understanding of the different research paradigms, approaches, strategies and methods available for researchers to choose from, which will be discussed in this chapter.

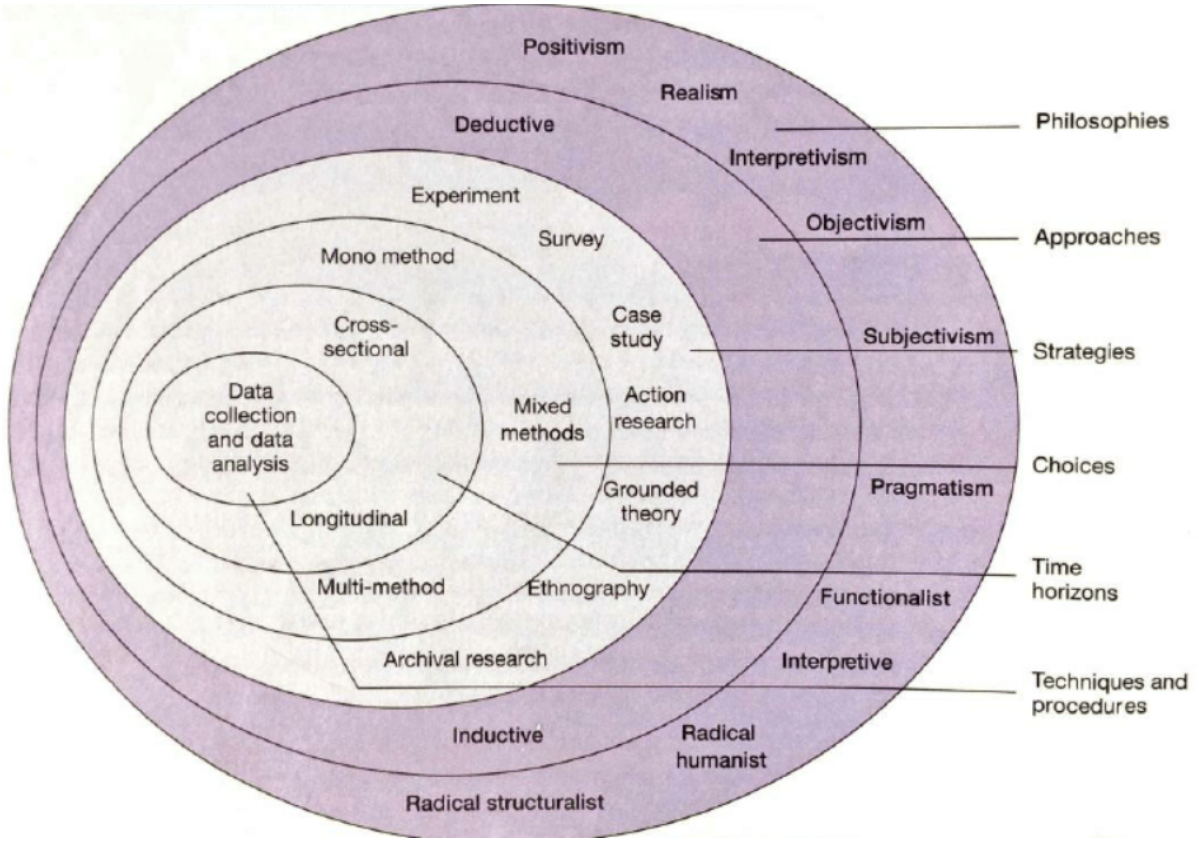
The chapter is divided into 13 sections. Sections 2, 3 and 4 respectively contain a brief but informative review of research paradigms, approaches and strategies. Section 5 presents the research design methods. Section 6 discuses the techniques used to identify the sample. In sections 7,8, 9 and 10, the stages of designing the questionnaire instrument, as well as the measures of the variables used and the different data collection methods, are discussed in detail. Sections 11 and 12 present the data analysis approach and ethical considerations. Finally, section 13 summarises the content of the chapter.

4.2 Research philosophy

Before developing the proposed research methodology, the researcher must first develop a clear understanding of their own philosophical position. The assumptions and beliefs about the development of knowledge and everything in it have been defined as philosophy (Saunders, Lewis, and Thornhill, 2016). The choice of the philosophical position and methodological

strategy for the study relies on the nature of the research problem and is framed by it (Finn, Elliott-White and Walton, 2000). Saunders et al., (2016) have emphasised that a researcher's most significant ability is to consider in depth their decisions on research philosophies, which are classified into positivism, critical realism, interpretivism, postmodernism and pragmatism. Table 4-1 summarises the assumptions of the two major paradigms as presented by Collis and Hussy (2014, pp. 46,47). Table 4-2 summarises the features of the two major paradigms, as presented by Collis and Hussy (2014, p.50).

Figure 4- 1: Research onion



Saunders et al. (2019)

Table 4- 2:The assumptions of the positivism and interpretivism paradigms

Philosophical Assumption	Positivism	Interpretivism
Ontological Assumption (The nature of reality)	Reality is objective and singular, regardless of the researcher stance	Reality is subjective and multiple, as observed by participants

Epistemological Assumption (What constitutes valid knowledge)	Researcher is independent of what is being researched	Researcher interacts with that being researched
Axiological Assumption (The role of values)	Research is value-free and unbiased	Research is value-laden and biases are present
Rhetorical Assumption (The language of research)	The writing is formal with passive voice and use of accepted quantitative words.	The writing is informal with personal voice and accepted qualitative words.
Methodological Assumption (The process of research)	Process is deductive.	Process is inductive.
	Study of cause and effect with a static design (categories are isolated beforehand). Research is context free. Generalisations lead to prediction, explanation and understanding.	Study of mutual contemporaneous shaping of factors with an emerging design (categories are identified during the process). Research is context bound. Patterns and/or theories are developed for understanding.
	Findings are reliable and precise through validity and reliability	Findings are reliable and precise through verification.

Adopted from: Collis and Hussy (2014)

Academic studies are frequently underpinned by the philosophical paradigms of interpretivism and positivism. Objectivism is the epistemology of positivism, whereas subjectivism is the epistemology of interpretivism. According to Objectivism, the social reality that we study is external to us and others (Saunders, Lewis, and Thornhill, 2019). In any study, ontology is considered as the starting point of any research. Ontology is the study of being, that is, it embodies an understanding about the assumptions of the nature of reality. Epistemology is the next step and is defined as how and what researchers can know about the reality (Knowledge) of the case and what types of knowledge are legitimate and adequate (Saunders et al., 2019; Gray, 2013).

Interpretivism believes that "natural reality (and the laws of science) and social reality are different" and they need to be studied differently. Subjectivism is the epistemology of interpretivism and believes that meaning comes from personal beliefs. Hence, subjectivism is connected to interpretivism (Gray, 2013, p.23; Saunders et al., 2019). While positivism is often about what can be seen, smelt and touched, and so on. It deals with natural science and involves working with an observable social reality to create law-like *generalisations*. Objectivism is

about objective reality and attempts to test or discover the truth. Objectivism is correlated to positivism (Johnson and Duberley, 2000; Gray, 2005).

Table 4-2 summarises the features of the two major paradigms, as presented by Collis and Hussy (2014, p.50).

Table 4- 3:The main features of the positivism and interpretivism paradigms

Positivistic paradigm	Interpretivist paradigm
Most likely to produce quantitative data	Most likely to produce qualitative data
Employs large samples	Employs small samples
Focuses on hypotheses testing	Focuses on hypotheses and theory generation
Data is highly specific and precise	Data is rich and subjective
The location is artificial	The location is natural
Data reliability is high	Data reliability is low
Validity is low	Validity is high
Generalises to population from sample	Generalises from one setting to another

Adopted from: Collis and Hussy (2014)

4.2.1 Rationale for adopting the positivist paradigm

This thesis adopts positivism as its corresponding research paradigm, and its ontology and epistemology are objective from a philosophical point of view. Positivism is useful for understanding links between variables so that explanatory and predictive information can be provided. Individual examples of the phenomena are subsumed under broad general principles, or causal processes that support antecedent consequential pairs are identified (Crotty, 1998; Howell, 2015). In general, positivist academics believe that knowledge is formed solely by objective observation of the empirical world, which deals with statistics, numbers, and quantitative approaches. They also frequently seek causal relationships between events and assert that science's job is to foresee and manage such social or natural occurrences (Tacq, 2011). Positivist ontology has a more focused theoretical underpinning, easier data collecting (even for massive collections of data), and a more straightforward way of aggregating and comparing data.

Accordingly, this study adopts an objective ontology, as it aim to contuct an empirical study on the relationship between market orientation, technology orientation, learning orientation, treanformational leadership and service innovation and firm performance among banking sector in Jordan.

The positivist epistemology is used because this research seeks to investigate cause-effect relationships (Saunders et al., 2019). Furthermore, Positivist epistemology, also known as objectivist epistemology, use senses such as what can be seen, heard, or smelled to gather objective data for testing theories. Researchers that hold positivist epistemological viewpoints believe that objects or social ideas such as organisations are autonomous of individuals (Mukhles, 2020). Furthermore, they employ statistics and numbers to identify facts and quantify things such as performance and quality, and they believe that studies conducted without such a framework may be biassed and unscientific (Mukhles, 2020). According to the debate above, this thesis employs objective epistemology in attempting to determine whether or not service innovation has an impact on business performance. **Therefore, this thesis assumes that concepts such as market orientation, technology orientation, learning orientation, transformational leadership and service innovation on firm performance can be studied objectively.**

4.3 Research approach (Deductive versus inductive approach)

After agreeing on the research paradigm to be used, the researcher must then make a crucial decision on the research approach to be used (Saunders et al., 2019). A research approach is about the place and role of theory in research, and there are two major contrasting approaches for theory development: deductive method and inductive approaches are the two most popular analysis methods used by researchers (Bryman, 2012).

4.3.1 The deductive approach

In deductive research, the researcher begins by gathering information about a particular phenomenon in order to establish research theories that will be tested empirically in the next step of the project (Bryman, 2012; Saunders et al., 2019). Six steps are normally subsumed in the deductive approach: (1) theory, (2) hypothesis, (3) data collection, (4) findings, (5) hypotheses confirmed or rejected, and (6) revision of theory. The process is depicted in Figure 4-1 below.

Figure 4- 2:The six stages of the deductive approach

Adopted from: Bryman (2012)

When using the positivism model, a researcher will typically develop a hypothesis and assumptions based on the existing literature, which will then be tested using appropriate statistical tests.

4.3.2 The inductive approach

Unlike the previously described deductive method, an inductive researcher begins with actual observations of a specific phenomenon and then uses the findings to generate theory (Bryman, 2012). The inductive approach progresses from the specific to the general; in other words, it proceeds as follows: observations/findings theory (Saunders et al., 2019). See Table 4-3 for more information.

Table 4- 4:The main differences between the deductive and inductive approaches

Deductive approach	Inductive approach
Scientific principles	Gaining understanding of the meanings human attach to events
Moving from theory to data	A close understanding of the research context
The need to explain causal relationships between variables	The collection of qualitative data
The collection of quantitative data	A more flexible structure to permit changes of research emphasis as the research progresses
The application of controls to ensure validity of data	A realisation the researcher is part of the research process

The operationalisation of concepts to ensure clarity of definitions	Less concern with the need to generalise
A highly structured approach	
Researcher independence of what is being researched	
The necessity to select samples of sufficient size in order to generalise conclusions	

Adopted from: Saunders et al. (2019)

4.3.3 Rationale for adopting the deductive approach

Collis and Hussy (2009) emphasise the importance of using a research approach that promotes the achievement of the research goal and objectives. Based on established literature, this thesis develops a theoretical model with associated hypotheses with the aim of measuring and empirically verifying their validity. Consequently, given the focus of the current research is to examine the impact of market, technology and learning orientations on service innovation and firm performance, these measures will be applied also to examine the moderating impact of transformational leadership between the orientations and service innovation.

The deductive approach that emphasises measurement and empirical analysis of theories and relationships between variables seems more relevant than the inductive approach (Bryman, 2012; Saunders et al., 2019). Furthermore, this approach encourages the use of large samples to improve generalisation of results and understand how the theories about market, technology, learning orientations, transformational leadership, service innovation and firm perfomance work in the sector of banking sector in Jordan (Saunders et al., 2019), which is another reason for its use in this study.

4.4 Research strategy

In terms of strategy, it is a plan of achieving goals. It is defined as a "plan of how a researcher will go about answering the research question" (Saunders et al., 2016, p.177).

The selection of research methodology and methods of data collection is often inspired by the philosophical position of the research (Crotty, 1998). Collis and Hussy (2014) and Saunders et al. (2019) classify the different research strategies in terms of their relevance to the two main paradigms discussed in subsection 4.2, as presented in Table 4-4.

Table 4- 5: Research strategies under the two main research paradigms

Positivism	Interpretivism
Cross-sectional studies	Action research
Experimental studies	Case studies
Longitudinal studies	Ethnography
Surveys	Feminist perspective
	Grounded theory
	Hermeneutics
	Participative inquiry

Adopted from: Collis and Hussy (2014)

Given the positivism paradigm's adoption in this study, the research strategies mentioned in the first column of the above table (Cross-sectional studies, Experimental studies, Longitudinal studies and Surveys) would be emphasised. This would start with removing research methodologies thought to be irrelevant given the context and nature of the current study.

Experimental studies entail "a methodology used to investigate the relationship between variables, where the independent variable is deliberately manipulated to observe the effect on the dependent variable" (Collis and Hussy, 2009, p.60; Saunders et al., 2019). This type of research can be carried out in a laboratory or in the field in a methodical manner (Collis and Hussy, 2009). Experimental methodology, on the other hand, can be argued to be irrelevant to this research for a variety of reasons. First, this methodology is more appropriate for use in an interpretivist study, which is not the case of this study. Second, the unit of analysis in this research is the firm, which is difficult to be influenced (Collis and Hussy, 2009).

Longitudinal studies entail "a methodology used to investigate variables or a group of subjects over a long period of time" (Collis and Hussy, 2009, p. 64). This allows for the detection of any changes or developments in the relationships or behaviours under investigation (Bell and Bryman, 2007; Saunders et al., 2019). However, this method is time and resource intensive (Collis and Hussy, 2009).

Cross-sectional studies entail gathering a body of quantitative or quantifiable data on multiple cases (usually quite a few) at a single point in time and in relation to two or more variables, which is then analysed to detect patterns of associations (Collis and Hussy, 2009).

Survey strategy is chosen as appropriate for addressing the research problem and questions of this thesis. As defined by Collis and Hussy (2009, p.62), survey study "is a methodology designed to collect primary or secondary data from a sample, with a view to generalizing the results to a population". The survey strategy is usually related to a deductive research approach, and is the most popular and traditional strategy employed in business and management research (Saunderes et al., 2016). It helps the researcher to collect relevant data that relate to the topic. It enables the researcher to analyse the collected data in a numerical system to produce the research result. Surveys carried out based on the deductive approach are mainly concerned with the existing theories and using these to test the hypotheses of the study.

The survey strategy is associated with positivist methodology and can be used to determine whether a relationship exists between two or more variables (Collis and Hussy, 2009). To conduct this type of survey, it was necessary to develop a theoretical framework from relevant literature relevant to the case of this study in order to identify the dependent and independent variables in the relationships (Collis and Hussy, 2009; Sunders et al., 2009). As the case of this thesis is to examine the impact of market, technology and learning orientations on service innovation and firm performance, and the impact of transformational leadership as a moderating impact between market, technology and learning orientations and service innovation.

4.5 Brief overview of research methodology

To answer the question raised by any study, an appropriate methodology must be selected and suitable tools for data collections (and analysis) have to be chosen. There are two main approaches which inform the gathering of data in any research; namely the quantitative approach and the qualitative approach. Many researchers believe it is helpful to classify and distinguish the differences between qualitative and quantitative research. Bryman and Bell (2003) have stated that quantitative research is a research strategy that emphasises quantification in the collecting and analysing of data, while qualitative research stresses words rather than quantification. Hence, qualitative and quantitative research are different in some aspects as discussed below.

4.5.1 Quantitative approach

A quantitative research approach is generally located in the positivist social sciences paradigm, which mainly reflects the scientific method of social sciences (Creswell, 2016). The positivist

paradigm espouses a deductive approach to the research process. It thus begins with theories and hypotheses on a particular phenomenon, collects data from the real-world site and subsequently analyses the data statistically to reject or support the initial hypotheses (Bryman, 2012). Researchers who implement a deductive approach draw on theory to direct the design of the study and the subsequent explanation of their results. The aim is to verify or test a proposed theory, rather than to construct one.

Therefore, it can be seen that the identified theory proposes a framework for the whole study, also serving as an organising model for the research hypotheses and for the whole data collection process. The whole research procedure is subjectively constructed, and the results are regularly representative of the population being studied. Moreover, quantitaitve reseach deals with those studies that are concened with the collection of numbers, proportions, statistics, and numeric forms (Picard, 2000). Generally, it tends to focus on large-scale sample data and often presents the gathering of 'facts'.

4.5.2 Qualitative approach

The qualitative approach is generally located in the interpretive paradigm. A qualitative approach tends to derive from recognition of the importance of the experiential life of human beings (Bryman, 2012). A qualitative approach offers possibilities that can lead to the discovery of the deeper understanding of meaning. Easterby-Smith, Thorpe and Jackson (2008) have described the task of the qualitative researcher as being to capture what people do and say, how they understand the complexity of their world, and to interpret events from the views of the participants. A qualitative approach collects data as text-based units, which represent the context attributes and social reality of the studied phenomenon (Creswell, 2016).

Researchers employing a qualitative approach use data collection methods such as in-depth interviews, observation and/or focus groups (Creswell, 2016). The qualitative approach is subjective, since it relies on the discourses and texts of participants and entails small numbers of participants being involved in the process (Bryman, 2012). Due to the small number of participants, the qualitative approach does not presume to represent the wider poplation. As such, qualitative studies are not assumed suitable for generalisation, but rather adopt a more descriptive and narrative style aimed at a better understanding of research questions at hand (Bryman, 2012). Perhaps one of the major disadvanteges of qualitative research is that it is

time consuming. The researcher has to spend a large amount of time in the research setting in order to properly examine the identified subjects (Creswell, 2016).

The next section presents the researcher's justification for using quantitative method

4.5.3 Rationale for adopting quantitative research

Quantitative analysis describes an approach to testing objective theories by analysing the relationships between variables, which in the current study include market orientation and technology orientation and service innovation, and their impact on firm performance (Creswell, 2016). Quantitative research can be interpreted as a methodology that underlines quantification in data collection and analysis (Bryman, 2012) and has the following characteristics:

- Entails a deductive approach to the relationship between theory and research, in which the emphasis is placed on the hypothesis testing
- Includes the practices and norms of the natural scientific model and positivism
- Embodies a view of social reality as an external force (Bryman, 2016)

Quantitative research is fundamentally linked with survey and experimental research strategies (Creswell, 2016). By analysing a population sample, a survey approach offers a quantitative or numerical overview of population trends, behaviours or opinions. While the objective of "an experimental design is to test the impact of treatment (or intervention) on an outcome" (Creswell, 2016, 156). The data for this study would be collected through a survey of banks in Jordan to examine the relationships between market orientation, technology orientation, learning orientation, transformational leadership, service innovation and firm performance.

4.6 Questionnaire development

If a questionnaire instrument is to yield a satisfactory response rate as well as reliable and valid information, it must be carefully designed (Collis and Hussy, 2009). This is because data can, in most cases, be collected from respondents only once (Bryman and Bell, 2007). There are a few key suggestions for creating a more user-friendly questionnaire that allows for a high response rate as well as accurate and relevant data. Creating an appealing questionnaire layout, keeping the questionnaire as short as possible, providing clear instructions for answering the questionnaire, combining the questionnaire with a covering letter personally addressed to each respondent, and providing a pre-stamped return envelope are some of these recommendations (Bryman, 2012).

As a result, special consideration was given in this study to the questionnaire design process in light of the above recommendations in order to produce as user-friendly a questionnaire as possible, allowing for the collection of sufficient, reliable, and valid data for conducting a rigorous empirical analysis. The final version of the questionnaire in this study consisted of two sections: the first section contained 5 questions that focused on demographic information, while the second section contained 45 questions focusing on study variables. The survey consisted of 4 one-sided A4 pages, which corresponds to the acceptable range of between 4 and 8 A4 pages in length provided by Saunders et al., (2019). See appendices 9.4 and 9.5 for Arabic and English versions.

4.7 Research population

A population is "the universe of units from which the sample is to be selected " (Bryman, 2012, P.187). The term "unit" is used because the research may want to draw a sample from a universe of nations, cities, regions, firms, etc, rather than just people. The research population of this study includes first, second and third line managers of all banks operating in Jordan that are listed and licensed at the Association of Banks (Jordan). In total, there are 24 banks: 8 international banks, 1 of which is an Islamic bank, and 16 Jordanian national banks, 3 of which are Islamic banks. This study was conducted in the headquarters and branches of the banking organisations operating in Jordan from which the study sample was selected (Central Banks of Jordan, 2021). The studied banks are the Arab Bank, Housing Bank for Trade & Finance, Jordan Kuwait Bank, Cairo Bank of Jordan, Capital Bank of Jordan, Bank al Etihad, Bank of Jordan, Arab Banking Corporation, Arab Jordan Investment Bank, Islamic International Arab Bank, Jordan Islamic Bank, Safwa Islamic Bank, Standard Chartered, Egyption Arab Land Bank, Citibank, Rafidain Bank, BLOM Bank, Bank Audi, Al-Rajhi Bank, Societe Generale de Banques, INVESTBANK, Jordan Commercial Bank, Jordan Kuwait Bank and National Bank of Kuwait. According to the Association of Banks of Jordan, (2018), there are 21262 employees in the banking sector in Jordan, with 683 non-Islamic branches and 164 Islamic branches.

4.8 Research sampling techniques

Identifying a population sample is essential for almost all quantitative studies (Collis and Hussy, 2009). A sample is a subset of the population chosen for investigation (Bryman, 2012). A representative sample must be identified and used in the empirical study, with the findings generalised to the entire population from which the sample was drawn (Bryman, 2012). There

are two types of sampling techniques: Denscombe (2017) defines two types of sampling: probability or representative sampling and non-probability sampling.

Probability sampling “relies on the use of random selection from the research population" (Denscombe, 2017, p.34). Probability sampling enables the use of statistical significance tests, which allow inferences about the population from which the sample was drawn (Collis and Hussy, 2009). There are several methods for ensuring that probability sampling is followed, including simple random, stratified random, systematic, and multi-stage cluster (Bryman, 2012).

In contrast to probability sampling, non-probability sampling “involves an element of discretion or choice on the part of the researcher at some point in the selection process and it is used when researchers find it difficult or undesirable to rely on random selection of the sample” (Denscombe, 2017, p.34). In fact, this implies that some units in the population are more likely than others to be selected. As a result, using non-probability samples produces results that are less generalisable to the population than using probability samples. As with probability sampling, different methods can be used to identify a non-probability sample, such as convenience sampling, snowball sampling and quota sampling (Bryman, 2012).

Taking into account the objective of carrying out statistically significant tests and making inferences about the population in this study, the probability sampling technique was employed. Compared to non-probability sampling, probability sampling techniques are the most often linked with survey research strategies (Saunders et al., 2016). The reason behind using this technique is that the best way to get a representative sample was to ensure that the researcher would have absolutely no influence on the selection of bank managers for inclusion in the sample and that selection from among the managers of Islamic and non-Islamic banks would be completely random (Denscombe, 2017). To be more specific, random sampling was selected (Saunders et al., 2016). The researcher distributed the questionnaries to HR of headquarters of banks in Jordan and asked them to hand them out to branch managers randomly.

4.8.1 Back translation

The researcher also had to deal with the language barrier. Because the scale items were originally written in English and the managers of this study speak Arabic, the survey items were translated into Arabic. In addition, an Arabic professional fluent in English was asked to translate the Arabic version back into English to ensure that the translation was accurate and did not lose meaning. Since the researcher is fluent in Arabic, there would be no difficulty in communicating with the managers of Islamic and non-Islamic banks in Jordan, where the researcher would collect the data for this study. The full and final versions of the Arabic and English questionnaires are presented in Appendices 6 and 7.

4.8.2 Questions type and format

It is critical to ensure that the participants' responses are measurable and valid. A questionnaire's questions can be closed or open (Bryman, 2012). The seven-point rating format has been used for all rating questions, giving participants more options for expressing their opinion on the aspect presented in each question. A Likert scale ranging from ‘Strongly disagree’ to ‘Strongly agree’ was used in the questionnaire to ensure that all individual responses would be measurable.

One of the main advantages of the Likert scale approach, according to Joshi, Kale, Chandel, and Pal (2015), is that it allows for opinion rating rather than a simple yes or no answer. Researchers can thus obtain quantitative data by employing this scaling approach, which is highly organised and easily analysed graphically and statistically (Joshi et al., 2015). However, the integrity and reliability of all scaling measurement methods, including the Likert scale, may be jeopardised because participants may provide deceptive responses to express either positive or negative representations (Saunders et al., 2016). However, by making the questionnaire completely anonymous, it is possible to reduce social pressure and reduce the bias of social desirability (Saunders et al., 2019), as well as promote more accurate and reflective responses from individuals.

4.8.3 Pilot study

A pilot test or field pre-test of the instrument is considered necessary so that researchers can assess how the questionnaire works under realistic conditions and to draw the attention of researchers to important issues that can lead to project failure (Baker, 1994).

According to Bryman (2016), pilot study tests are useful for several reasons. Firstly, serious wastage will be avoided if there are deficiencies that were not anticipated before the pilot test. Secondly, they ensure not only that individual questions work but also that the questionnaire as a whole is suitable for its intended purpose. Thirdly, they can be very helpful in the case of self-administered instruments, since there will be no interviewer to clarify any confusion. Fourthly, they provide an excellent opportunity for feedback on whether certain things should be included, omitted, or changed to enhance the flow, quality, and comprehension of the questions (Bryman, 2016).

Pilot studies can be based on both quantitative and qualitative methods and more than one pilot study might be carried out in the case of large-scale studies before conducting the main survey. The first step of a pilot might be using in-depth interviews to establish the issues to be addressed in the main project (Tashakkori and Teddlie, 1998).

According to Bryman (2012), it is desirable to identify a small group of participants that resemble those in the population from which a sample for the entire study is drawn in order to achieve the expected benefits of the pilot study. As a result, before conducting the main data collection, a three-month pilot study was conducted between June and August 2020 in banks of Jordan, by conducting interviews to test the questionnaire. The participants in the pilot study were seven executives from Islamic and Non-Islamic banks who were selected by convenience and snowball techniques. Due to the Covid 19 impacts, all interviews were conducted via phone with the executives. These executives were knowledgeable about the study constructs due to their positions at their respective banks. This pilot was undertaken to ensure that there was no ambiguity in the survey instrument. As the result of the pre-test, some slight changes were made to the text in the final questionnaire.

4.8.4 Questionnaire administration

After making changes to the questionnaire instrument in response to feedback from the pilot study, it was ready to be administered to the entire sample in order to collect data for the key empirical review. For distribution to the 24 targeted Jordanian banks (4 Islamic banks and 20 Non-Islamic banks), 500 questionnaires were printed out. Distribution of the questionnaires started on the 18th of October 2020 and administration lasted for six months.

The questionnaire was addressed personally to human resources and branch managers. It was believed that people holding such positions would be able to provide valid and comprehensive

responses to the questionnaire due to their knowledge. Respondents were advised to share questions with knowledgeable persons in their bank if they felt that would enhance the accuracy and validity of information provided. In the majority of cases, the targeted person completed the questionnaire. A follow up reminder was given to all non-respondent banks almost every week after sending the questionnaire. Moreover, telephone calls were made to encourage non-respondent banks to participate.

A total of 500 surveys were distributed via convenient, snowball and random sampling to the first, second, and third line bank managers at the headquarters and branches in Jordan and 290 of them were returned, 197 from Non-Islamic banks and 93 from Islamic banks, giving a net response rate of 65 per cent. Of the 290 returned questionnaires, 91 were not useable due to the amount of missing data, leaving a final sample of 199 questionnaires. Similar response rates have been reported by several other studies, such as Tayal et al., (2018), Lin et al., (2008), Fang et al. (2014) and Asaah et al. (2019). The number of responses was considered sufficiently high for statistical reliability and generalisability (Stevens, 2002). Table 4-5 provides information on our sample distribution which indicates coverage of a wide range of banks in Jordan. This provides initial evidence on the credibility of data collected in this study.

Table 4- 6:The sample distribution

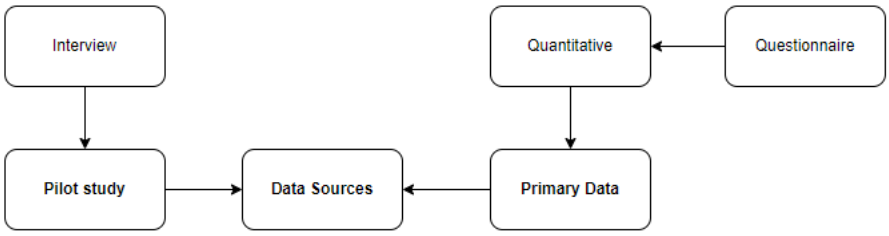
	Type of Bank	Banks	Number of respondents
1	Com	The Arab Bank	17
2	Com	Bank of Jordan	26
3	Com	Cairo Amman Bank	15
4	Com	Housing Bank for Trade & Finance	26
5	Com	Egyptian Arab Land Bank	6
6	Com	Jordan Commercial Bank	7
7	Com	Audi Bank	4
8	Com	Bank al Etihad	18
9	Com	Arab Banking Corporation	8
10	Com	Ahli Bank	17
11	Com	BLOM Bank	9
12	Com	Capital Bank of Jordan	8
13	Com	National Bank of Kuwait	2
14	Com	Jordan Kuwait Bank	14
15	Com	INVESTBANK	9
16	Com	Arab Jordan Investment Bank	3
17	Com	Société Générale de Banques	5
18	Com	ABC Bank	1
19	Com	Rafidain Bank	1
20	IS	Islamic International Arab Bank	38

21	IS	Jordan Islamic Bank	23
22	IS	Safwa Islamic Bank	18
23	IS	Al-Rajhi Bank	14
		Total	290

4.9 Data collection techniques

The choice of methods for collecting the required information is the last step in the preparation of the study and relies on the research philosophy perspective. The philosophy, approach and methodology of this research, illustrated in Figure 4-2, are discussed in the following sections.

Figure 4- 3: Data Sources



Given the choice of survey research approach, various data collection methods could have been used to collect the data needed for this study. Interviews and questionnaires are examples of such approaches. Determining the most appropriate and efficient method is always dependent on the advantages and disadvantages of each method and the aim and objectives of the research. This research aimed at conducting a large-scale empirical examination of a theoretical model highlighting the impact of service innovation on firm performance and the effect of market, technology and learning orientations on service innovation in banks of Jordan to provide generalisable results which would overcome limitations of the previous literature. The two data collection methods and the relevancy of each method to this research are briefly reviewed below.

4.9.1 Interview method

The interview method can have different forms, such as unstructured, semi-structured and structured interview. The first two forms are mostly used to probe deeply into a phenomenon and build theory, so they are more relevant to the inductive approach not adopted in this study

(Collis and Hussy, 2009). Moreover, these methods are very time consuming and expensive (Saunders et al., 2009). In contrast, the structured interview in which questions are pre-developed and closed is suggested for the deductive approach adopted in this study (Collis and Hussy, 2009). Therefore, this method could have been used to obtain the necessary data for this research. However, because of the intention to survey a large number of banks, this method seemed very costly in terms of both time and financial resources (Saunders et al., 2009). Furthermore, this method may not have been convenient to participants with a daily busy schedule, in addition to the possible interviewer bias just explained (Collis and Hussy, 2009).

4.9.2 Questionnaire method

According to Collis and Hussy (2009), questionnaires are a common method for collecting data in business research, and there is more than one method for distributing questionnaires to sample participants, including by post, online, telephone, drop off or face-to-face (Saunders et al., 2016).

The questionnaire can be provided to the participants at any time and place that is convenient to them by using the face-to-face method (Saunders et al., 2019). However, when the goal is to survey a large and widely geographically distributed sample, as in the case of this study, this strategy becomes prohibitively expensive and time consuming (Collis and Hussy, 2009). As a result, this strategy was not used in this study.

The telephone method of sending questionnaires has the benefit of allowing a large sample to be surveyed at a cheap cost (Saunders et al., 2019). The telephone approach, like the interview method, brings the issue of personal contact with its potential bias and may limit the sample to individuals who agree to reply in this manner (Collis and Hussy, 2009). As a result, this strategy was not used in this study.

The online method was considered more appealing because it saves money, expedites the distribution of questionnaires, and allows for a big sample size (Saunders et al., 2019). A questionnaire can be created and disseminated through email to a large number of designated participants. This strategy, however, necessitates the availability of the targeted participants' email addresses. When such email addresses are not available, like in this study's situation, such a strategy cannot be used.

The survey technique chosen for this study is usually linked to a deductive approach (Creswell, 2014). The adoption of the survey strategy would give the researcher close control over the process. It would enable findings to be generated that are representative of the population of Islamic and non-Islamic banks at a lower cost (Saunders et al., 2016).

Self-administered questionnaire has been used as the primary source of quantitative data in this research. Self-administered questionnaires allow a large amount of data to be collected from a large population, in this case bank managers, and can also improve the validity and reliability of research (Denscombe, 2017). Furthermore, this approach is well-known, time and resource efficient, and more convenient for participants since they can choose when to complete the questionnaire.

The self-administered questionnaires were delivered and collected personally. This fulfilled the strong Arab cultural preference for any kind of business transaction to be based on personal contact (Rowland, Hall and Altarawneh, 2017). Moreover, personally delivered and collected questionnaires have significantly higher response rates (Rowland et al., 2017). Therefore, the questionnaires, each with a formal university letter head, were delivered in person to the employees at the headquarters of the studied banks. Due to Covid 19 the researcher had to fill in a risk assessment form to be able to collect data from banks in Jordan. The researcher distributed the questionnaires to HR at the headquarters of each bank and asked them to send these out to bank managers.

4.10 Variables measurement

One of the most critical and influential decisions researchers need to make is how to measure research variables. This is because the reliability and validity of the data collected are directly affected, as are the results achieved. The available literature for existing measures of the variables used in this analysis was extensively searched in order to implement or modify those measures in line with the research goal and objectives.

4.10.1 Market orientation

Most studies on market orientation either adopted MARKOR (the criteria proposed by Kohil et al. (1993)) or MKTOR (the criteria postulated by Narver and Slater, 1990) measurement scale, or both. In this study, to measure market orientation, we used the MKTOR scale of

Narver and Slater (1990) because of its emphasis on behavioural components of customer orientation, competitor orientation and interfunctional coordination. This scale was found to be consistent with other market orientation scales (those developed by Deshpandé and Farley, 1998; Han, Kim and Sirvastava, 1998; Tajeddini et al., 2010).

Table 4- 7: market orientation scale

Market Orientation
Customer Orientation
Our bank measures customer satisfaction on a regular basis.
Our bank has regular measures for improving customer service.
Our bank exists primarily to serve customers.
Our bank's practices and procedures consistently focus on delivering customer satisfaction.
Competitor Orientation
Our bank is more competent as compared to other banks.
Our bank targets customers where it has an opportunity for competitive advantage.
Our bank managers regularly evaluate competitors' strengths.
Our bank rapidly responds to competitive actions that threaten us.
Interfunctional Coordination
All of our bank functions are responsive to each other's needs.
Our bank managers understand how employees can contribute to value of customers.
Our bank managers from every function regularly review the bank's current customers.
All of Our bank functions are integrated into serving the needs of our customer markets.

4.10.2 Technology orientation

The five items to measure technology orientation were then modified in the context of banks (from Zhou, Yim and Tsu, 2005; Masa'deh et al., 2018; Kocak et al., 2017).

Table 4- 8: technology orientation scale

Technology Orientation
R&D activities are very important in our bank.
Advanced technologies and methods are constantly used to develop new services in our bank.
New technologies are integrated into our bank rapidly.
Our bank intends to develop new technologies in order to respond to the changing expectations of customers.
Our bank is very active in developing new technologies.

4.10.3 Learning orientation

The study identified its items for measuring the LO dimensions for commitment to learning, open mindedness and shared vision courtesy of Calantone et al., (2002), Sinkula et al., (1997), Baker and Sinkula (1999) and Mahmoud et al., (2016) who also tested the scales. Calantone et al., (2002) have proposed different indicators of learning orientation, namely commitment to learning, shared vision and open-mindedness. This scale is the most used scale to measure learning orientation.

Table 4- 9: learning orientation scale

Learning Orientation
Commitment to Learning
The basic values of our bank include learning as an essential key to improvement.
The sense around here is that employee learning is an investment, not an expense.
Learning in our bank is seen as a key commodity necessary to guarantee organisational survival.
Our bank managers basically agree that bank's ability to learn is the key to its competitive advantage.
Shared Vision
All employees are committed to the goals of our bank.
There is a commonality of purpose in our bank.
There is total agreement on our bank's vision across all levels, functions, and divisions.
As a manager, I make sure that employees view themselves as partners in charting the direction of the bank.
Open-Mindedness
Our bank continually reviews the quality of decisions and activities taken over time.
Employees in our bank realise that the very way they perceive the marketplace must be continually questioned.
Our bank is not afraid to critically reflect on the shared assumptions we have made about our customers.

4.10.4 Service innovation

Service innovation is measured via a five-item scale. This scale is adapted and modified from earlier studies (Grawe et al., 2009; Thakur and Hale, 2013; Chen et al., 2010; Tsai and Wang, 2017). These items capture a service-oriented firm's capability to use innovation activities related to improving the existing service, developing new services and extending existing service efforts.

Table 4- 10: service innovation scale

Service Innovation
Innovation is readily accepted in program/project management.
Innovation in our bank is encouraged.
Our bank managers give special emphasis to service innovation.

Our bank constantly seeks new ways to provide better services to customers.
Our bank is able to change/modify our current service approaches to meet special requirements from customers.

4.10.5 Transformational leadership

Treansformational leadership is measured on the five-item scale developed and tested by Carless, Wearing and Mann (2000) and Imran et al., (2016). The scale has five items. The scale was dubbed the global transformative leadership scale because the items were intended to represent a global measure of transformative leadership. Additionally, a brief, reliable, and valid scale would have significant utility value if a broad measure of transformational leadership were required for research or applied purposes (Wearing and Mann, 2000).

Table 4- 11: transformational leadership scale

Transformational leadership
Our bank managers communicate a clear and positive vision of the future.
Our bank managers treat staff as individuals, support and encourage their development.
Our bank managers foster trust, involvement and cooperation among team members.
Our bank managers encourage thinking about problems innovatively and questioning assumptions.
Our bank managers instil pride and respect in others and inspire employees by being highly competent.

4.10.6 Firm performance

Firm performance has been measured by using several different perspectives in the literature – financial and non-financial, business unit performance, or organisational performance; subjective (judgmental) and objective. In this study firm performance is measured using financial and non-financial performance, more specifically by using seven items adopted from several studies (Mahmoud et al., 2016; Uzkurt et al., 2013; Jiménez-Jimenez et al., 2008; Damanpour and Gopalakrishnan, 2001; Barraies and Hamouda, 2018; Chen et al., 2009).

Managers were asked to provide their perception about the performance of their bank during the last three years compared to competitors in terms of return on asset (ROA), return on investment (ROI), return on equity (ROE), overall bank performance, (Subjective) customer loyalty, perceived image and reputation (objective). Performance is measured using these items because these are commonly accepted among key performance measures in the banking industry (Uzkurt et al., 2013). The definitions of these three financial performance meaures are provided below:

1. Return on Asset: current year new income divided by the book value of total assets

2. Return on Equity: current year net income divided by the book value of total equity.
3. Return on Investment: Current profit earned on an investment divided by the cost of that investment.

Table 4- 12: firm performance scale

Firm performance
Financial performance
Return on assets (ROA).
Return on equity (ROE).
Return on investment (ROI).
Overall of the bank's performance.
Non-financial performance
Our bank has a good reputation.
Our bank has loyalty from existing customers.
Our bank has a good image.

4.10.7 Control Variables

Organisations of different age, size, and type demonstrate different behaviours (Divisekera and Nguyen, 2018), and managers with different experience towards innovation can show different attitudes towards change, in turn, influencing service innovation and firm performance. Based on reviewing the previous studies, academic qualifications, position held, number of years in position, age, number of employees at their banks were used as control variables in the analysis of this study (Mahmoud et al., 2016) to avoid non-causal relationships between service innovation and firm performance.

Below, a brief definition of each of the firms' specific control variables is provided.

- Firm's age: The age of the bank is simply defined as the number of years that the bank has been operating since its establishment,
- Firm's size: The corresponding number of employees of the bank is considered as the bank's size in this thesis.
- Firm's type: Banks in Jordan are divided into two types, Islamic banks and non-Islamic banks.
- Participant's academic qualifications:
- Participant's number of years in position:

Table 4- 13: general background scale

General Background
Q1- What is your level of education?
□ Diploma □ Graduate degree □ Post graduate degree
□ Doctoral degree □ Prefer not to say
Q2- Position held in the bank?
□ CEO □ CFO □ Chief manager □ Branch manager
□ Associate manager □ Senior manager □ Manager □ Director of the department
Q3- Number of years in position?
□ 1-5 □ 6-10 □ 11-15 □ 16-20 □ 20- or above
□ Prefer not to say
Q4- Age of your bank?
□ 5-10 □ 11-15 □ 16-20 □ 21-25 □ 25- or above
Q5- Number of employees in your branch/headquarters?
□ Less than 10 □ 10-20 □ 21-30 □ 31-40 □ 40- or above

4.11 Data analysis

This section describes the processs of analysing the multiple data gathered by the study. The main aim of the quantitative analsysis performed in the study was to examine the impact of market orientation, technology orientation, learning orientation on service innovation and firm performance, also to examine the moderation impact of transformational leadership between market, technology, learning orientation and service innovation.

This study uses a quantitative methodology to investigate the causal relationships between variables (Creswell, 2014). Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) are used to determine the underlying structure in a data matrix (Hair et al., 2010). Exploratory Factor Analysis is used to discover a set of variables that underpin the common factors in the data based on the correlations among variables in each factor, whereas Confirmatory Factor Analysis is used to test a hypothesis of common factors and how they are related (Hair et al., 2010). Quantitative data from the surveys were processed in the Statistical Package for Social Sciences (SPSS) version 26 and AMOS software packages.

Descriptive analysis is the process of transforming raw data into a form that can be understood and interpreted by organising, modifying, and rearranging data to create descriptive information (Zikmund, 2002), Sample variables are described and compared using primary

data in the descriptive analysis for this study (Saunders et al., 2019). In the next chapter, the aim is to give a clear view of raw data with the description of the mean and median and standard deviation. In addition, the descriptive statistical assessment employed another two tests: standardised skewness and the standardised kurtosis.

Probability sampling technique was used to manage the data, and the quantitative data from the surveys were processed in the Statistical Package for Social Sciences (SPSS) version 26 and AMOS software packages. The 199 satisfactorily completed questionnaires were given numbers from 1 to 104 for Non-Islamic and 105 to 199 for Islamic banks.

4.12 Ethical considerations

O'Leary (2010) made the point that when conducting any kind of research, ethical issues must be addressed and cannot be disregarded. Ethics needed careful consideration due to the high level of human involvement in both the self-administered questionnaires and the pilot study (Robson, 2002). All study phases, including strategy development, data collection, data analysis, and report writing, should take research ethics into account. According to Robson (2002), the researcher must make sure that this is done in an ethical and responsible manner.

The researcher included a cover letter with the questionnaire during the questionnaire administration process to explain the study's purpose and reassure the participants that their answers would be kept anonymous and private. All of the participant's questions would be forwarded by the researcher to the Jordanian bank headquarters. The researcher would make every effort to treat the data impartially, not pick and choose which data to report, or exaggerate the statistical precision of the data.

Before the pilot study interview process began, the researcher sent a consent form alongside a participant information sheet (See appendices 9.1 and 9.2). During interviews, the researcher would explain the study aim again. After that, the researcher would remind the participants of their right to withdraw from the process at any time if they so wished. The researcher would be meticulous not to reveal their identities in any way in the process. In order to avoid misunderstanding and misinterpretation of the responses, the interviewees would need to agree to the tape-recording of the discussions. The researcher would be careful not to include questions that would make the participant feel embarrassed or demeaned in any way. Finally,

the processed data would be sent back to the interviewees to verify that the researcher interpreted their beliefs and opinions accurately and precisely.

4.13 Overview of SPSS

4.13.1 Assessing the Measurement Model under SPSS

The first step in using SPSS is to assess the measurement model's validity and reliability in terms of its measures. Different criteria, including internal reliability, stability, and inter-observer consistency, can be used to evaluate the reliability of the measures (Bryman, 2016). According to Bryman (2016), validity is assessed using face, concurrent, convergent, predictive, and construct validity. In section 5.3 of the following chapter, more details on the validity and reliability of testing constructs will be given.

4.13.2 SPSS software

SPSS stands for “Statistical Package for the Social Sciences”. In recent years, however, the term “SPSS” has come to mean “Statistical Product and Service Solution”. SPSS is a statistical analysis software program. IBM SPSS version 26 is the most recently updated version of SPSS Statistics, and it is primarily used in survey and operation authoring. It is the most popular and widely used marketing software. It is also used for data administration, data visualisation, and numerical analysis (Blumberg et al., 2014; Field and Field, 2013). As a result, researchers use this program to manage data, find data files, choose data, trace variables, compute new variables, and combine data sets. The final data analysis is carried out after utilising SPSS. Following that, the theory is examined using both parametric and non-parametric methods, then regression and correlation are employed using two variable regressions: multiple regression and logistic regression.

4.13.3 Regression analysis

In the past 50 years, one of the most popular statistical techniques for examining the relationships between variables has been regression analysis (Golberg and Cho, 2004). Its goal is to evaluate how a response relates to explanatory variables (Liand and Zeger, 1993). As a statistical tool for examining relationships between variables, regression analysis has been defined. Typically, the goal of an investigation is to determine the relationship between one variable and another (Sykes, 1993). Additionally, according to Montgomery, Peck, and Vining (2002), it is a statistical method for analysing and simulating the relationship between variables.

According to Chatterjee and Simonoff (2013), regression analysis is used for one (or more) of three purposes:

1. Modeling the relationship between x and y,
2. Prediction of the target variable (forcasting);
3. And testing of hypotheses.

Linear regression, multiple linear regression, and nonlinear regression are all types of regression analysis. Simple linear regression and multiple linear regression are the most common models.

4.13.3.1 Simple linear regression analysis

This is a model that assesses the relationship between a dependent variable and an independent variable. The simple linear model is expressed using the following equation:

$$Y = a + bX + \epsilon$$

Where:

- Y – Dependent variable
- X – Independent (explanatory) varible
- a – intercept
- b – Slope
- ϵ - Residual (error)

4.13.3.2 Multiple linear regression analysis

This is essentially similar to the simple linear model, with the exception that multiple independent variables are used in the model (Liand and Zeger, 1993). The mathematical representation of multiple linear regression is

$$Y = a + bX1 + cX2 + dX3 + \epsilon$$

Where:

- Y – Dependent variable
- X1, X2, X3 – Independent (explanatory) variables
- a – Intercept
- b, c, d – Slopes
- ϵ – Residual (error)

However, since there are several independent variables in multiple linear analysis, there is another mandatory condition for the model:

- **Non-collinearity**: Independent variables should show a minimum correlation with each other. If the independent variables are highly correlated with each other, it

will be difficult to assess the true relationships between the dependent and independent variables (Field and Field, 2013).

In the case of this study multiple linear regression is used to measure the impact of market orientation, learning orientation, technology orientation, trasnformationoal leadership, service innovation and firm performance in banking industry in Jordan.

4.13.4 Structural equation model

A type of statistical modelling known as structural equation modelling (SEM) aims to explain the relationships between numerous variables. Because of its usefulness and appeal, scholars today highly regard it (Anderson and Gerbing, 1988). Structural equation modelling is primarily structured and designed for the analysis of abstracts and theoretical models. Anderson and Gerbing (1988) state that latent growth modelling, path analysis, and confirmatory factor analysis are among the frequently employed structural equation modelling approaches. In this study, survey results are subjected to structural equation modelling using Analysis of Moment Structures (AMOS) version 23. To confirm the hypotheses and manage the designed conceptual model, the researcher chose SEM with AMOS. This study employs structural equation modelling because it is appropriate for justifying and analysing theories involving a group of variables that includes both dependent and independent variables.

The formation equation model is made up of a pair of models called CFA and structural models. According to the hypothesis, the CFA validates the relationship between the measurement component factors and their associated features. Contrarily, the structural model supports the association between the assumptions and the factors (Wang et al., 2014).

Goodness-of-fit is used to measure the theoretical relationship between the variables. Accepting the relationship depends on the sufficiency of the goodness-of-fit. If adequate, it highlights the appropriateness of the theoretical relationship and, if inappropriate, the relationship gets left over. There are various experimental models, of which a minimum of four models should be used for the CFA and structural model. They include the Goodness of Fit Index (GFI), Chi-square (X2), degrees of freedom, Comparative Fit Index (CFI), Adjusted Goodness of Fit Index (AGFI), Root Mean Square Error of Approximation (RMSEA), Tucker-Lewis Index (TLI) and Incremental Fit Index (IFI). In addition, the hypotheses were analysed

through the critical value (p-value), the critical ratio (t-value) and the consistent estimate (Harrison and Reilly, 2011).

4.14 Summary of chapter four

This chapter discussed in detail the research methodology adopted in this research study. Thus, after exploring the other alternatives in social science, the research paradigm, approach and strategy were identified and justified. More specifically, this research has tried to gain better understanding of service innovation and its impact on firm performance in Jordanian banks and key orientations such as market, technology and learning orientations on service innovation, as well as the moderating impact of transformational leadership. To achieve the objectives of this research, the positivism philosophical paradigm was used to gather data related to service innovation in Jordanian banks. Data were collected through questionnaires distributed to branches and headquarters.

Ethical issues were considered in terms of confidentiality in order to avoid any possibility of harm to participants, and informed consent was sought and obtained. Steps were taken to ensure the privacy of participants and any form of deception was avoided. Finally, the researcher sought to maintain friendly rapport with participants in order to encourage their active and meaningful cooperation. A pilot study was conducted before distributing the questionnaires through interviews. Interviews were contected with seven bank managers in Jordan for this purpose.

5 Data Analysis

5.1 Introduction

The aim of this thesis is to examine the impact of service innovation on firm performance, and the impact of key orientations such as market, technology and learning on service innovation; as well as the impact of transformational leadership as a moderator impact between market, technology and learning orientations and service innovation. This chapter examines the data collected for the conduct of the empirical analysis by SPSS and AMOS. Firstly, this chapter describes the demographic characteristics of the banks, as well as the participants' demographic characteristics. The second section of this chapter describes the procedures used to screen the empirical data gathered via the questionnaire instrument.

The third section of this chapter discusses the results of both the exploratory and confirmatory factor analyses of the variables. Section four reports descriptive statistics for constructs after establishing their validity and reliability, including mean, standard deviation, skewness, and kurtosis. Furthermore, the chapter discusses the results of correlation analysis and regression analyses between service innovation and firm performance. This is followed by testing the model using SEM. Finally, the chapter ends with a summary of the results.

5.2 Demographic characteristics of the sample

5.2.1 Type of bank

The type of bank is important to give clear background about the nature of the Islamic and non-Islamic banks in Jordan, as Islamic banks, unlike non-Islamic banks, follow the Sharia law. As can be seen from Table 5-1, 52.3% of the sample were from non-Islamic banks and 47.7% from Islamic banks.

Table 5- 1:Type of bank

	Frequency	Percent
Non-Islamic	104	52.3
Islamic	95	47.7
Total	199	100.0

5.2.2 Number of employees

Table 5-2 shows that the majority of banks (56.8%) have 10 to 20 employees, and 29.6% have less than 10. Next come banks with 21-30 employees (10.6%), while the remaining banks (3.0%) have 31 and above.

Table 5- 2:Number of employees

	Frequency	Percent
Less than 10	59	29.6
10 to 20	113	56.8
21 to 30	21	10.6
31 and more	6	3.0
Total	199	100.0

5.2.3 Age of the banks

The age of the banks is among the most important factors in terms of their ability to keep pace with developments. The ages of the sampled banks are categorised into five groups as shown in Table 5-3.

Table 5- 3:Age of the banks

	Frequency	Percent
5 to 10 years	8	4.0
11 to 15 years	30	15.1
16 to 20 years	11	5.5
21 to 25 years	31	15.6
More than 25 years	119	59.8
Total	199	100.0

Table 5-3 shows that the majority of banks are aged more than 25 years or 21-25 years, at 59.8% and 15.6%, respectively. Banks aged 11-20 years accounted for 20.6% and the rest (less than 10) for 4.0 % of the sample.

5.2.4 Number of years in position

Table 5-4 displays the distribution of sampled managers' years of experience with their current banks.

Table 5- 4:Number of years in position

	Frequency	Percent
Less than 5 years	42	21.1
6 to 10 years	57	28.6
11 to 15 years	54	27.1
15 to 20 years	124	12.1
More than 20 years	19	9.5
Prefer not to say	3	1.5
Total	199	100.0

From Table 5-4, it can be seen that 21.1% of managers have worked in the banking sector for less than 5 years, 28.6% for 6 to 10 years, 27.1% for 11 to 15 years, 12.1% for 15 to 20 years, and 9.5% have more than 20 years' experience.

5.2.5 Level of education

Table 5-5 illustrates that all the managers (100%) have received higher education, with 84.9% having graduate degrees, 10% having postgraduate degrees (master and PhD), while only 5% of the bank managers had just diplomas.

Table 5- 5:Level of education

	Frequency	Percent
Diploma	10	5.0
Graduate Degree	169	84.9
Postgraduate Degree	17	8.5
Doctoral Degree	3	1.5
Total	199	100.0

5.2.6 Position held in the bank

Table 5-6 below shows the distribution of managers according to their current position.

Table 5- 6: Position held in the bank

	Frequency	Percent
CEOs	3	1.5
Branch Manager	92	46.2
Associate Manager	55	27.6
Frontline Manager	4	2.0

Director of the Department	45	22.6
Total	199	100.0

As can be seen from Table 5-6, 46.2% of the sampled managers were branch managers, while 27.6% of them were associate managers, followed by directors of the department, at 22.6%. Finally, 1.5% of the sample were CEOs.

5.3 Validity, reliability and unidimensionality of constructs

An important task in a quantitative analysis is to check the validity, unidimensionality and reliability of the measures used (Hair et al., 2010; Bryman, 2012). To ensure the content validity in this study, the researcher adopted scales and items that were previously developed and used by other researchers. The reliability of the instrument was measured by Cronbach's Alpha coefficient with cut-off value 0.7 (Hair et al., 2010). Cronbach's Alpha coefficients of all the tested variables are above the suggested cut-off points, suggesting that the composite measure is reliable, see Tables 5-8 to 5-13 below. Validity and reliability are among the most famous for evaluating the quality of research, i.e. the trustworthiness of a study and the rigour of research processes (Persson and Lindgren, 2005). By validity, it is usually meant the extent to which a study measures what it is planned to measure (Saunders et al., 2016). Therefore, it includes all necessary variables and parameters relevant for a particular test while describing and defining every importand concept (Saunders et al., 2016). In this thesis, it has been attempted to reach validity by using appropriate measures for investigating orientations, transformational leadership, service innovation and firm performance relationships, according to the literature and specifications of this study in the banking context.

The main purpose of this research is to examine the impact of service innovation on firm performance and the key orientations such as market, technology and learning orientations on service innovation in banking industry in Jordan. Therefore, to test the hypotheses associated with this study, multiple regression technique was used. Further, the levels of significance (a level) were chosen to be 0.05 and 0.10 (Hair et al., 2010).

5.3.1 Content validity

Content validity is the evaluation and conceptual definition of the correspondence of the variables to be included in a summarised scale (Bryman, 2016). This construct validity form, also known as face validity, subjectively evaluates the correspondence between the individual

items and the concept through assessments per expert judges, pre-tests with multiple sub-populations or other means (Hair et al., 2010). A pilot study solicited feedback from 8 experts on the concepts measured in this study to ensure the content validity of constructs in this study. The researcher made minor changes based on the feedback from bank managers.

5.3.2 Unidimensionality of constructs

The items are unidimensional, which means they are strongly associated with each other and represent a single concept, which is an underlying assumption and essential requirement for creating a summated scale (Hair et al., 2010). Confusion can arise when some indicators present more than one structure to determine the unevenness of all constructs in a model. Factor analysis is critical in determining the number of factors and the loadings of each variable on the factor in order to make an empirical assessment of the dimensionality of a set of items (s) (Hair et al., 2010). Using factor analysis, such as EFA and CFA, is a vital statistical approach for determining the unidimensionality of constructs empirically.

In this study, EFA and CFA are employed to empirically assess the dimensionality of constructs included in the model using SPSS and AMOS software packages. Spearman (1904) established exploratory factor analysis (EFA), which tries to investigate the major components or dimensions of measures (Kline, 1994). EFA is designed to look into the relationships between observable and latent variables to see how and to what extent the seen variables are linked to their underlying factors (Byrne, 1998)

In the EFA, the principal component method with varimax rotation and eigenvalue greater than 1 is used as a criterion for factor extraction. The principal component method was chosen because it considers total variance, which includes common, specific, and error variances (Hair et al., 2010). In addition, the varimax orthogonal rotation method is adopted as in most cases the un-rotated solutions are neither sufficient nor clear (Hair et al., 2010). Moreover, the orthogonal rotation methods have been relied on more widely in comparison to oblique rotation methods (Hair et al., 2010). For all constructs, Hair et al.'s (2010) suggestions for a credible factor analysis are followed.

The Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity (see tables 5-8 to 5-13 below) are sampling adequacy measures used to evaluate the case with the variable ratio for the analysis. KMO denotes the ability of variables to correlate in a specific sample, whereas

Bartlett's Test of Sphericity is a statistical test used to investigate the hypothesis that variables are uncorrelated in the population (relationship confirmation between variables) (Hair et al., 2010). At the scale and individual item level, the (KMO) test for sample adequacy is applied, with a minimum value of 0.60 or above considered acceptable and the Bartlett's Test of Sphericity needing to be statistically significant at $p<0.05$. According to Hair et al. (2010), higher communality values indicate that the factor solution has extracted large amounts of variance in a variable. Small communalities show that the factors do not account for a significant portion of the variable's variance. All items on a scale should have communalities of at least 50% and loadings of more than 55% (Hair et al., 2010). In confirmatory analysis, the KMO and Bartlett's Test are critical. Hair et al. (2010) recommend using the KMO and Bartlett's Test parameters before proceeding with the confirmatory factor analysis.

Jöreskog (1973) developed CFA, which attempts to test hypotheses based on prior research or theory. CFA is a method of determining how well a predetermined measurement theory composed of measurable variables and factors corresponds to reality as captured by data (Hair et al., 2010). CFA is used to validate the underlying structures of each construct. Hence, it aims to confirm a pre-specified relationship between indicators and latent variables. In addition to the $\chi 2$—Chi-square statistic that has problems with statistical significance based on sample size (199), the other fit indices that are suggested to be used for assessing the fit model are: df—degrees of freedom; CFI—Comparative Fit Index; IFI—Incremental Fit Index; NFI—Normed Fit Index; TLI—Tucker–Lewis index; RMSEA—Root Mean Square Error of Approximation; ECVI- Expected Cross-validation Index. See Table 5-7 below which shows the indices of fit model.

Table 5- 7:Indices of fit model

Name of Category	Fit Measures	Level of acceptance	Literature
Absolute fit	Normed Chi-Square (X2/df)	Acceptable level lower than 5	Byrne, (1998); Arbuckle, (2009)
	Goodness-of-Fit -Index (GFI)	Acceptable level more than 0.90	Arbuckle (2009); Hoyle, (1995)
	Root-Mean-Square Residual (RMR)	Moderate fit 0.05-0.10, acceptable level 0.05-0.08, good less than 0.05	Browne and Cudeck., (1993); Arbuckle, (2009)
Incremental fit	Root Mean Square of Error Approximation (RMSEA)	Moderate fit 0.05-0.10, acceptable level 0.05-0.08, good less than 0.05	Byrme, (2001); Arbuckle (2009)
	Model Comparison Tucker Lewis Index (TLI)	Acceptable level more than 0.90	Marsh, Balla and McDonald., (1988); Arbuckle (2009)
	Nonmed Fit Index (NFI)	Acceptable level more than 0.90	Bentler and Bonett., (1980); Arbuckle (2009)
Parsimonious fit	Adjusted Goodness-of-Fit Index AGFI	Acceptable level more than 0.90	Marsh, Balla and McDonald., (1988); Arbuckle (2009)
	Incremental Fit Index (IFI)	Acceptable level more than 0.90	Hoyle and Panter (1995); Arbuckle (2009)
	Comparative Fit Index (CFI)	Acceptable level more than 0.90	Hoyle and Panter (1995); Arbuckle (2009)

5.3.3 Reliability of constructs

Reliability refers to “the consistency of a measure of a concept” (Bryman, 2016, P.169). In addition, Hair et al. (2010) have defined it as a measure of the consistency between multiple measurements of a variable. There are three different prominent factors of the term reliability, namely stability, internal and inter-observer consistency reliability (Bryman, 2016).

5.3.3.1 The stability method

The stability method considers a measure's ability to produce nearly identical results at two different times (Bryman, 2012). Using this method, a measure should be administered to a sample once and then administered to the same sample again. The measure is said to be reliable if the results from the two administrations are highly related (Hair et al., 2010). However, this approach has significant drawbacks that make it unsuitable for this study. In the case of questionnaire data, for example, a respondent's responses at time 1 may influence his or her responses at time 2 (Bryman, 2012). Second, this strategy would clearly have necessitated administering the same measures to the same respondents twice, which would have been costly, time intensive, affected by Covid-19 restrictions, and necessitated persuading participants to supply the same information again.

5.3.3.2 The internal reliability method

This method is used with multiple-indicator constructions, and it involves aggregating data from all indicators to arrive at an overall score for the associated construct (Hair et al., 2010). Because they all measure the same construct, the goal of this strategy is to ensure that the various indicators that measure that construct are related to one another (Bryman and Bell, 2016). When factor analysis is utilised, Cronbach's alpha is one of the most commonly used approaches for verifying the internal reliability of multiple-indicator constructions (Hair et al., 2010; Bryman and Bell, 2016). In general, academics think that a Cronbach's alpha value of 70 percent should be the minimum acceptable limit for this coefficient (Hair et al., 2010). Given the sensitivity of Cronbach's alpha to the number of indicators in a construct (i.e. the value of Cronbach's alpha increases as the number of indicators used in measuring a construct increase, even with the same degree of inter-correlation), a coefficient value of 60% (Hair et al., 2010) can be acceptable, especially in exploratory research (Hair et al., 2010; Grafton et al., 2010; Cortina, 1993). See Tables 5-5 to 5-13 which present the results.

5.4 Validity of constructs

The final step after ensuring the reliability of a construct and its measures is to examine the construct validity (Hair et al., 2010). Construct validity can be defined “as the issue of whether or not an indicator (or set of indicators) that is devised to gauge a concept really measures that concept” (Bryman and Bell, 2016, P. 171), or “the extent to which a scale or set of measures accurately represent the concept of interest” (Hair et al., 2010: p. 162). Convergent,

discriminant, and nomological validity are the three most widely accepted types of validity (Bryman, 2016; Hair et al., 2010).

5.4.1.1 Convergent validity

Convergent validity is defined as the degree to which indicators of a specific construct converge or share a large amount of variance in common (Hair et al., 2010). Convergent validity in CFA can be empirically assessed using a variety of methods, including factor loadings or the average variance extracted (AVE) (Hair et al., 2010). The standardised loading of each indicator measuring that construct should be investigated when assessing the convergent validity of a construct using the factor loadings approach. A defined loading value of 0.5, ideally 0.7, indicates convergent validity (Hair et al., 2010). Using the second technique, the AVE is calculated by multiplying the sum of all squared standardised factor loadings by the number of items. An AVE score of 0.5 or higher indicates a high level of convergent validity (Hair et al., 2010). This is because if the AVE value is less than 0.5, it means that the items' variance explained by the latent factor is on average less than the error variance that remains unaccounted for.

5.4.1.2 Discriminant validity

Discriminant validity assesses how distinct one construct is from another (Hair et al., 2010). Like convergent validity, discriminant validity can be empirically tested using two methods: cross-loadings and the AVE technique. To support discriminant validity, the cross-loadings approach, which ensures that indicators have higher loadings on their designated construct than on other constructs, can be used (Hair et al., 2010). The AVE approach, which is commonly used in conjunction with CFA to assess discriminant validity, demands that the AVE for any two components exceeds the squared value of the correlation estimate between these two constructs (Hair et al., 2010). See Tables 5-20 to 5-25 which present the results of AVE.

5.5 Empirical investigation unidimensionality, reliability and validity of constructs

As explained in the previous subsections of this chapter, EFA and CFA are methods implemented to assess the validity and unidimensionality of model constructs, which would be confirmed in this study by the measurement modes of SPSS and AMOS.

5.5.1 Assessing reliability and validity of market orientation

Table 5-8 presents the results of the factor analysis of the 12-market orientation. As can be seen in Table 5-8, the factor solution presented confirms the unidimensionality of each factor extracted. All factors related to a specific factor were loading significantly (>55%). In addition, no high cross loadings were evident. Therefore, the results of Table 5-8 also confirmed the convergent and discriminant validity of the three factors extracted. Kaiser's measure of sampling adequacy (0.844) indicates that EFA is appropriate and within acceptable levels (Hair et al., 2010), and the values of Bartlett's Test of Sphericity for all constructs are significant at the level (p=.000).

The reliability of each factor is estimated using the Cronbach's alpha. As shown in Table 5-8, all factors possessed a satisfactory reliability value ranging from 0.768 to 0.786. Based on the indicators (market orientation) loaded on each factor, the three factors were labelled as competitor orientation, interfunctional orientation, and customer orientation.

Table 5- 8:Factor analysis and reliability of market orientation

Practices		Factor loadings			Communality
Market orientation		**1**	**2**	**3**	
CO Q1		**.816**	.026	,052	.670
CO Q2		**.734**	.189	.236	.630
CO Q4		**.722**	.067	.362	.657
CO Q3		**.616**	.253	.260	.511
COO Q3		.229	**.788**	.031	.674
COO Q2		.196	**.746**	.090	.604
COO Q1		-.118	**.741**	.212	.608
COO Q4		.159	**.714**	.166	.562
IC Q2		.334	.252	**.725**	.741
IC Q4		.035	.048	**.736**	.545
IC Q3		.263	.115	**.713**	.591
IC Q1		.407	.245	**.652**	.651
Kaiser-Meyer-Olkin Measures (Whole model)		.844			
Bartlett's Test of Sphericity	Chi-Square	883.465			
	Df	66			
	Sig.	.000			
Cronbach's alpha		.784	.768	.786	

5.5.2 Assessing reliability and validity of technology orientation

Table 5-9 summarises the results of factor analysis for the technology orientation scale. As shown in Table 5-9, the factor solutions for both scales confirmed the unidimensionality of the factor extracted. All indicators loaded significantly (>55%) on their related factors with values ranging from 0.801 to 0.887. The results therefore also confirmed that the structure is convergent and discriminatory. Kaiser's measure of sampling adequacy of the model was 0.874, which indicated that EFA was appropriate and within acceptable levels, and Bartlett's Test of Sphericity values for all constructs were significant at the level (p = .000) (Hair et al., 2010). The alpha level of 0.904 provided support to the respective scales.

Table 5- 9: Factor analysis and reliability of technology orientation

Practices		Factor loadings	Communality
Technology orientation		**1**	
TO Q1		.887	.772
TO Q2		.879	.709
TO Q3		.849	.787
TO Q4		.842	.721
TO Q5		.801	.642
Kaiser-Meyer-Olkin Measures (Whole model)		.874	
Bartlett's Test of Sphericity	Chi-Square	615.435	
	Df	10	
	Sig.	.000	
Cronbach's alpha.		.904	

5.5.3 Assessing reliability and validity of learning orientation

Table 5-10 presents the result of factor analysis of 11 learning orientations. As can be seen from Table 5-10, the factor solution confirmed the unidimensionality of each factor extracted. With values ranging from 0.721 to 0.892, all indicators related to a specific factor were loading significantly (>55 percent) on only that factor. Furthermore, no significant cross loadings were observed. The results of Table 6-10 therefore confirmed that the three factors extracted were convergent and discriminant. According to Kaiser's sampling adequacy (0.877), EFA is appropriate and within acceptable levels (Hair et al., 2010).

With the alpha of the Cronbach, the reliability of each factor was assessed. As shown in Table 6-10, all factors possessed a satisfactory reliability value ranging from 0.733 to 0.881. Based

on the indicators (i.e. LO) loaded on each factor, the three factors were labelled as commitment to learning, open mindedness and shared vision, respectively.

Table 5- 10:Factor analysis and reliability of learning orientation

Practices	Factor loadings			Communality
Learning orientation	**1**	**2**	**3**	
CL Q1	**.856**	.173	.124	.779
CL Q3	**.796**	.259	.134	.719
CL Q2	**.795**	.218	.270	.752
CL Q4	**.709**	.445	.162	.727
SV Q1	.262	**.769**	.209	.644
SV Q2	.099	**.764**	.226	.704
SV Q3	.287	**.678**	.201	.615
SV Q4	.401	**.673**	.024	.582
OM Q1	.109	.163	**.865**	.673
OM Q2	.361	.072	**.701**	.786
OM Q3	.078	.430	**.694**	.626
Kaiser-Meyer-Olkin Measures (Whole model)	.877			
Bartlett's Test of Sphericity				
Chi-Square	1035.335			
Df	55			
Sig.	.000			
Cronbach's alpha	.881	.800	.733	

The results of the factor analysis for these scales are summarised in Table 5-11 and Table 5-12. For both scales, the factor solution confirmed that both factors had been extracted unidimensionally. All indicators were considerably loaded (>55%) on their associated service innovation and transformational leadership factor, with values ranging from 0,668 to 0,875 and 0,776 to 0,895, respectively. Therefore, the results also confirmed the convergent and discriminant validity of this construct. Kaiser's measure of sampling adequacy was 0.800 (0.872) for service innovation (transformational leadership) models, which indicated that EFA was appropriate and within acceptable levels (Hair et al., 2010). The alpha levels were 0.821 and 0.902 for service innovation and transformational leadership, respectively, which provided support to the respective scales.

Table 5- 11:Factor analysis and reliability of service innovation

Practices		Factor loadings	Communality
Service innovation		**1**	
SI Q1		.875	.556
SI Q2		.816	.765
SI Q3		.746	.446
SI Q4		.719	.666
SI Q5		.668	.517
Kaiser-Meyer-Olkin Measures (Whole model)		.800	
Bartlett's Test of Sphericity	Chi-Square	362.290	
	Df	10	
	Sig	.000	
Cronbach's alpha		.821	

Table 5- 12:Factor analysis and reliability of transformational leadership

Practices		Factor loadings	Communality
Transformational leadership		**1**	
TL Q1		.895	.602
TL Q2		.890	.792
TL Q3		.858	.801
TL Q4		.819	.735
TL Q5		.776	.670
Kaiser-Meyer-Olkin Measures (Whole model)		.872	
Bartlett's Test of Sphericity	Chi-Square	612.165	
	Df	10	
	Sig	.000	
Cronbach's alpha		.902	

5.5.4 Assessing reliability and validity of firm performance

The 7 firm performance indicators presented in Table 5-13 were factor analysed. The factor loadings of 0.40 or above were acceptable as meeting the cut-off value, while any factor loading above 0.50 was considered very good (Hair et al. 1998). As can be seen from Table 5-13, the factor solution confirmed the unidimensionality of each factor extracted. All indicators related to a specific factor were loading significantly (>55%) on only that factor, with values ranging from 0.735 to 0.947. Moreover, no high cross loading was evident. Therefore, the results also confirmed the convergent and discriminant validity of this construct. Kaiser's measure of

sampling adequacy was 0.815 which indicated that EFA was appropriate and within acceptable levels (Hair et al., 2010).

For the Cronbach's alpha test, the reliability of each factor was assessed. As shown in Table 6-13, all factors possessed a satisfactory reliability value ranging from 0.844 to 0.925. Based on the indicators (i.e. FM) loaded on each factor, the two factors were labelled as financial performance and non-financial performance, respectively.

Table 5- 13:Factor analysis and reliability of firm performance

Practices		Factor loadings		Communality
Firm performance		**1**	**2**	
Financial performance Q2 (ROE)		**.947**	.102	.908
Financial performance Q1 (ROA)		**.931**	.026	.867
Financial performance Q3 (ROI)		**.896**	.273	.877
(Overall performance) Q4		**.735**	.476	.766
Non-Financial performance Q3		.169	**.899**	.836
Non-Financial performance Q1		.108	**.898**	.803
Non-Financial performance Q2		.172	**.805**	.677
Kaiser-Meyer-Olkin Measures (Whole model)		.815		
Bartlett's Test of Sphericity	Chi-Square	1075.872		
	Df	21		
	Sig	.000		
Cronbach's alpha		.925	.844	

5.6 Descriptive statistics

This section presents the descriptive statistics of variables measured in the questionnaire and objectively collected from the banking sector in Jordan. These descriptive statistics are important as they provide an initial view of the nature of the data used in the main statistical analysis (Tabachnick and fidell, 2014). The mean, standard deviation, skewness and kurtosis of market orientation, technology orientation, learning orientation, service innovation, transformational leadership, firm performance (financial and non-financial performances), firm age, firm type, firm size, level of education, position held and number of years in position are reported below.

5.6.1 Descriptive statistics of market orientation

Table 5-14 highlights the descriptive statistics of market orientation factors along with their associated indicators. The average score of each factor is above the average score of the scale (3.5 out of 7). Among the two factors, the customer orientation factor has, on average, the highest scores of 6.22 and 6.36, respectively.

Two statistical measures, Skewness and Kurtosis, can be used as measures for statistical analysis to check the normality of the data. A look at the skewness and kurtosis of the factors and individual indicators in the last two columns of Table 5-14 reveals no serious violations of the normality assumption ($p < 001$).

Table 5- 14:Descriptive statistics of market orientation factors and indicators

Variables	N	Mean	Std. Deviation	Skewness		Kurtosis	
Market orientation				**Statistic**	**Std. Error**	**Statistic**	**Std. Error**
Customer orientation							
Q1	199	5.45	1.095	-.308	.172	-.848	.343
Q2	199	5.67	1.092	-1.214	.172	2.185	.343
Q3	199	5.51	1.189	-.975	.172	2.142	.343
Q4	199	5.53	1.266	-1.521	.172	3.689	.343
Competitor orientation							
Q1	199	5.57	1.125	-.452	.172	-.649	.343
Q2	199	572	1.214	-1.970	.172	5.977	.343
Q3	199	5.55	1.153	-1166	.172	2.921	.343
Q4	199	5.61	1.183	-1.982	.172	6.816	.343
Interfunctional coordination							
Q1	199	5.41	1.142	-.840	.172	.649	.343
Q2	199	5.43	1.161	-.920	.172	1.545	.343
Q3	199	5.39	.978	-.219	.172	-.454	.343
Q4	199	5.51	1.158	-.937	.172	1.991	.343
	199						

5.6.2 Descriptive statistics of technology orientation

Table 5-15 presents the descriptive statistics of technology orientation. As can be seen, all indicators of technology orientation have a mean score higher than the average of the scale (over 3.5). An examination of the skewness and kurtosis of indicators presented in the last two columns of Table 5-15 demonstrates no serious violation of the normality of the data. All indicators have skewness and kurtosis values less than 3.29 ($p < 001$) as recommended by Hair et al. (2010).

Table 5- 15:Descriptive statistics of technology orientation

Variables	N	Mean	Std. Deviation	Skewness		Kurtosis	
Technology orientation				Statistic	Std. Error	Statistic	Std. Error
Q1	199	5.49	1.214	-.658	.172	-.028	.343
Q2	199	5.65	1.153	-.870	.172	.517	.343
Q3	199	5.40	1.367	-.817	.172	.409	.343
Q4	199	5.52	1.184	-1.197	.172	2.336	.343
Q5	199	5.52	1.344	-1.299	.172	2.214	.343
	199						

5.6.3 Descriptive statistics of learning orientation

The learning orientation has been reflected by three factors as shown in subsection 5.7.3. It seems from Table 5-16 that, on average, the Jordanian banking sector, as represented in the sample employed in this study, has focused on commitment to learning. At the individual indicator level, commitment to learning Q1 (6.04 out of 7) and shared vision Q2 (5.98 out of 7) seem to be the most important elements.

An examination of the skewness and kurtosis of factors and individual indicators presented in the last two columns of Table 5-16 demonstrates no serious violation of the normality of the data. All factors and indicators have skewness and kurtosis values less than 3.29 ($p < .001$) as recommended by Hair et al. (2010).

Table 5- 16:Descriptive statistics of learning orientation

Variables	N	Mean	Std. Deviation	Skewness		Kurtosis	
Learning orientation				Statistic	Std. Error	Statistic	Std. Error
Commitment to learning							
Q1	199	5.67	1.081	-.724	.172	.122	.343
Q2	199	5.41	1.219	-.568	.172	-.078	.343
Q3	199	5.49	1.197	-1.050	.172	1.770	.343
Q4	199	5.50	1.263	-1.093	.172	1.592	.343
Shared Vision							
Q1	199	5.59	1.043	-.784	.199	.804	.396
Q2	199	5.76	.987	-.870	.199	.927	.396
Q3	199	5.49	.986	-.865	.199	.405	.396
Q4	199	5.57	1.108	-.843	.199	.447	.396
Open mindedness							
Q1	199	5.59	.989	-.461	.199	-.344	.396
Q2	199	5.36	.905	-.511	.199	.380	.396
Q3	199	5.44	1.131	-1.079	.199	2.622	.396
	199						

5.6.4 Descriptive statistics of service innovation

Table 5- 17:Descriptive statistics of service innovation

Variables	N	Mean	Std. Deviation	Skewness		Kurtosis	
Service innovation				Statistic	Std. Error	Statistic	Std. Error
Q1	199	5.51	.963	-1.135	.172	2.863	.343
Q2	199	5.38	.884	-1.144	.172	2.854	.343
Q3	199	5.37	.981	-1.712	.172	5.994	.343
Q4	199	5.46	.978	-.482	.172	.158	.343
Q5	199	5.39	.963	-.746	.172	.859	.343
	199						

5.6.5 Descriptive statistics of transformational leadership

Table 5- 18:Descriptive statistics of transformational leadership

Variables	N	Mean	Std. Deviation	Skewness		Kurtosis	
Transformational leadership				Statistic	Std. Error	Statistic	Std. Error
Q1	199	5.39	1.167	-.613	.172	.221	.343
Q2	199	5.29	1.419	-.904	.172	1.029	.343
Q3	199	5.36	1.239	-.460	.172	-.289	.343
Q4	199	5.39	1.246	-.547	.172	-.206	.343
Q5	199	5.39	1.290	-.621	.172	-.102	.343
	199						

5.6.6 Descriptive statistics of firm performance

As mentioned before, firm performance was measured as both financial and non- financial performance. Financial performance was measured by subjective data obtained from respondents on four indicators, namely return on assets, return on equity, return on investment, and the bank's overall performance. Furthermore, non-financial performance was measured subjectively on three indicators, namely reputation, loyalty, and brand image.

Table 5-16 presents the descriptive statistics of the firm performance factors and their indicators. As can be seen, the two firm performance factors have an average score higher than the average score of the measurement scale (i.e.,3.5). However, Table, 5-19 reveals that, on average, the highest improvement achieved by the sample firms of this study is in the reputation, with mean value of 6.43 (out of 7). Moreover, brand image seems to be the second most improved factor with mean of value of 6.33 (out of 7).

The two factors and individual indicators presented in the last 2 columns of Table 5-19 were examined for skewness and kurtosis No serious violation of the normality of the data was demonstrated. All factors and indicators have skewness and kurtosis values less than ($p<.001$) as recommended by Hair et al., (2010).

Table 5- 19:Descriptive statistics of firm performance

Variables	N	Mean	Std. Deviation	Skewness		Kurtosis	
Firm performance				Statistic	Std. Error	Statistc	Std. Error
Financial performance							
ROA	199	5.17	1.211	-.350	.172	.221	.343
ROE	199	5.21	1.213	-.327	.172	-.055	.343
ROI	199	5.22	1.207	-.329	.172	.214	.343
Overall performance	199	5.57	1.288	-1.036	.172	1.058	.343
Non-Financial performance							
Reputation	199	6.42	.836	-1.385	.172	1.165	.343
Loyalty	199	5.89	1.012	-.879	.172	.925	.343
Brand image	199	6.35	.770	-1.034	.172	.539	.343
	199						

5.7 Confirmatory factor analysis

Factor analysis has become one of the most commonly used multivariate statistical tools in applied research since its introduction about a century ago (Yong and Pearce, 2013). The main function of factor analysis is to clarify the number and nature of latent variables or factors that account for variation and covariation among a set of observed measures, commonly referred to as indications (Brown, 2006). Baglin (2014) introduced EFA as a method for exploring the underlying pattern of relationships among multiple observed variables and assessing the dimensionality of questionnaire scales that measure underlying latent variables, and CFA follows it to confirm the hypotheses.

Similarly, according to Tashakkori and Teddlie (2009), an exploratory factor analysis followed by confirmatory factor analysis are usually conducted for analysis of data collected from questionnaires. More precisely, Brown and Moore (2012) state that CFA is a kind of structural equation modelling that deals mainly with measurement models; i.e. the relationships between observed measures or indicators (such as test items, test scores, behavioural observation

ratings) and the latent variables. Finally, Jackson et al., (2009) add that the CFA is mainly used for developing and refining measurement instruments and evaluating construct validity

CFA was conducted to confirm the underlying structures of each construct in the measurement scales. The goodness of fit model was assessed by different fit indices. A mixture of fit indices was used to assess the fit of measurement model as: X2, X2/DF, TLI, NFI, IFI, CFI, PCLOSE and RMSEA. CFA with AMOS 26 using maximum likelihood procedure was undertaken to assess the overall fit of the model on each scale, using all items in the scale before eliminating any item, to maximise reliability.

5.7.1 Market orientation

The 12 observed items of the market orientation scale were subjected to CFA in terms of three components, namely "customer orientation", "competitor orientation", and "Interfunctional coordination", as specified by the EFA. Table 5.20 shows the results of CFA.

Table 5- 20:Unidimensionality and convergent validity tests (MO) (n = 199).

Constructs			Indicator (Parameter)	Factor loadings
	Dimensions	Field(s)	Item(s)	
Market orientation	Customer orientation		α= .768, CR=.85, AVE =.59	
		CO1	Our bank measures customer satisfaction on a regular basis.	.602
		CO2	Our bank has regular measures for improving customer service.	.688
		CO3	Our bank exists primarily to serve customers.	.724
		CO4	Our bank's practices and procedures consistently focus on delivering customer satisfaction.	.670
	Competitor orientation		α =.784, CR =.85, AVE =.61	
		CMP1	Our bank is more competent as compared to other banks.	.606
		CMP2	Our bank targets customers where it has an opportunity for competitive advantage	.751
		CMP3	Our bank managers regularly evaluate competitors' strengths.	.609
		CMP4	Our bank rapidly responds to competitive actions that threaten us.	.799
	Inter-functional coordination		α =.786, CR =.86, AVE =.62	
		IC1	All of our bank functions are responsive to each other's needs.	.784
		IC2	Our bank managers understand how employees can contribute to value of customers.	.859
		IC3	Our bank managers from every function regularly review the bank's current customers.	.694

	IC4	All of Our bank functions are integrated into serving the needs of our customer markets.	.470

Model summary statistics: $\chi 2 = 80.274$, df = 48, $\chi 2/df = 1.672$, p = .002, CFI=.962, TLI (rho2) = .947, IFI (Delta2) = .962, RMSEA = .058, ECVI = .830

The results of SEM showed a good fit for market orientation. More specifically, all the values of fit indices fell within a range of acceptable values as shown in Table 6.20. The model fit was excellent. CFI, IFI, and TLI of the market orientation model were greater than 0.90, RMSEA was 0.058, and $\chi 2/df$ was 1.672, which is less than the 2 level. Hence, these results showed the good fit for the market orientation model. Composite reliabilities (CR) were computed to evaluate the degree of consistency between multiple measurements of a construct (Hai et al., 2010), and were calculated using the procedures suggested by Fornell and Larcker (1981).

Average variance extracted (AVE) was calculated to measure the convergent validity (Gerbing and Anderson, 1988). The CR and AVE of all constructs were shown to be above the suggested cut-off values (AVE > 0.5 and CR > 0.7) (Fornell and Larcker, 1981), as can be seen from the table: customer orientation (CR = 0.85, AVE = 0.59), competitor orientation (CR = 0.85, AVE = 0.61), and inter-functional coordination (CR = 0.86, AVE = 0.62).

5.7.2 Technology orientation

The five observed items of the technology orientation scale were initially subjected to the CFA as specified by the exploratory factor analysis. The results of the technology orientation model are presented in Table 5.21.

Table 5- 21:Unidimensionality and convergent validity tests (TO) (n = 199).

Constructs	Indicator (Parameter)	Factor Loadings	Constructs
	Field(s)	Item(s)	
		α = .904, CR = .92, AVE =.75	
Technology orientation	TO1	R&D activities are very important in our bank.	.853
	TO2	Advanced technologies and methods are constantly used to develop new services in our bank.	.798
	TO3	New technologies are integrated into our bank rapidly.	.866
	TO4	Our bank intends to develop new technologies in order to respond to the changing expectations of customers.	.798
	TO5	Our bank is very active in developing new technologies.	.740

Model summary statistics: $\chi 2 = 14.909$, df = 5, $\chi 2/df = 2.982$, p = .011, GFI = .972, AGFI= .917, CFI=.984, TLI (rho2) =.968, IFI (Delta2) = .984, RMSEA = .100, ECVI = .176

As can be seen from Table 5.21, all fit indices fell within the acceptable range, and therefore the technology orientation model had a good fit. The CR and AVE of all constructs were shown to be above the suggested cut-off (CR = 0.92, AVE = 0.75).

5.7.3 Learning orientation

As discussed before in relation to EFA, it was necessary to conduct CFA to confirm the structure of learning orientation constructs. The 11 observed items representing 3 factors of the learning orientation scale were subjected to CFA. Table 5.22 shows the results of the learning orientation model.

Table 5- 22:Unidimensionality and convergent validity tests (LO) (n = 199).

Constructs			Indicator (Parameter)	Factor loadings
	Dimensions	Field(s)	Item(s)	
			α = .881, CR = .92, AVE =.74	
	Commitment to learning	COM1	The basic values of our bank include learning as an essential key to improvement.	.798
		COM2	The sense around here is that employee learning is an investment, not an expense.	.807
		COM3	Learning in our bank is seen as a key commodity necessary to guarantee organisational survival.	.785
		COM4	Our bank managers basically agree that bank's ability to learn is the key to its competitive advantage.	.834
			α = .800, CR = .87, AVE = .63	
Learning orientation	Shared vision	SV1	All employees are committed to the goals of our bank.	.601
		SV2	There is a commonality of purpose in our bank.	.728
		SV3	There is total agreement on our bank's vision across all levels, functions, and divisions.	.714
		SV4	As a manager, I make sure that employees view themselves as partners in charting the direction of the bank.	.718
			α =.733, CR =.85, AVE =.66	
	Open mindedness	OPM1	Our bank continually reviews the quality of decisions and activities taken over time.	.755
		OPM2	Employees in our bank realise that the very way they perceive the marketplace must be continually questioned.	.747
		OPM3	Our bank is not afraid to critically reflect on the shared assumptions we have made about our customers.	.604

Model summary statistics: *χ2 = 88.725, df = 40,* $\chi^2/df = 2.218$, *p = .000,* GFI = .923, AGFI= .872, CFI=.951, TLI (rho2) =.933, IFI (Delta2) =.952, RMSEA =.078, ECVI = .711

The results of the learning orientation model, shown in Table 5.22, indicate that CFI, IFI, NFI and TLI of the market orientation model were greater than 0.90, RMSEA was 0.078, and $\chi 2/df$ was 2.218, which is less than the 2 level. Hence, these results showed the good fit for the learning orientation model. The CR and AVE of all constructs are shown to be above the suggested cut-off: Commitment to learning (CR = 0.92, AVE = 0.74), Shared vision (CR= 0.87, AVE=0.63) and Open mindedness (CR= 0.85, AVE= 0.66).

5.7.4 Transformational leadership

The five items of transformational leadership were subjected to confirmatory factor analysis as specified by the exploratory factor analysis. Table 5.23 shows the results of transformational leadership.

Table 5- 23:Unidimensionality and convergent validity tests (TL) (n = 199).

Constructs		Indicator (Parameter)	Factor loadings
	Field(s)	Item(s)	
		α = .902, CR = .93, AVE = .72	
Transformational leadership	TL1	Our bank managers communicate a clear and positive vision of the future.	.708
	TL2	Our bank managers treat staff as individuals, support and encourage their development.	.864
	TL3	Our bank managers foster trust, involvement and cooperation among team members.	.873
	TL4	Our bank managers encourage thinking about problems innovatively and questions assumptions.	.828
	TL5	Our bank managers instil pride and respect in others and inspire employees by being highly competent.	.760
Model summary statistics: $\chi 2$ = 13.682, df = 5, $\chi 2/df$ = 2.736, p = .018, CFI=.986, TLI (rho2) =.972, IFI (Delta2) =.986, RMSEA =.094, ECVI = .221			

The results of transformational leadership showed that all fit measures were accepted. CFI, IFI, NFI and TLI of market orientation model were greater than 0.90, RMSEA was 0.094, and $\chi 2/df$ was 2.736 which is less than the 2 level. Hence, these results showed good fit for the transformational leadership model. The CR and AVE of all constructs were above the suggested cut-off (CR = 0.93, AVE = 0.72).

5.7.5 Service innovation

The five items of service innovation were subjected to CFA as specified by EFA. The results of the SI model are presented in Table 5.24. The CR and AVE of all constructs were above the suggested cut-off (CR = 0.88, AVE = 0.59).

Table 5- 24:Unidimensionality and convergent validity tests (SI) (n = 199).

Constructs		Indicator (Parameter)	Factor loadings
	Field(s)	Item(s)	
		α =.821, CR = .88, AVE = .59	
	SI1	Innovation is readily accepted in program/project management.	.596
	SI2	Innovation in my bank is encouraged.	.917
	SI3	Our bank managers give special emphasis to service innovation.	.522
Service innovation	SI4	Our bank constantly seeks new ways to provide better services to customers.	.710
	SI5	Our bank is able to change/modify our current service approaches to meet special requirements from customers.	.666
Model summary statistics: $\chi2$ = 8.498, df = 3, $\chi2$/df = 2.833, p = .037, CFI=.985, TLI (rho2) =.949, IFI (Delta2) =.985, RMSEA =.096, ECVI = .215			

The results showed that CFI, TLI and NFI were greater than the recommended 0.90, RMSEA was 0.096 and $\chi2$/df was 2.833. As a result, the SI model had a good fit.

5.7.6 Firm performance

The firm performance scale was subjected to CFA, Table 5-25 shows the results for both financial and non-financial firm performance. The CR and AVE of all constructs were above the suggested cut-off for financial performance (CR = 0.93, AVE = 0.78) and non-financial performance (CR= 0.90, AVE= 0.75), as can be seen from the Table 6-25.

Table 5- 25:Unidimensionality and convergent validity tests (FP) (n = 199).

Constructs		Indicator (Parameter)		Factor loadings
	Dimensions	Field(s)	Item(s)	
			α =.925, CR = .93, AVE = .78	
		FP1	Return on assets (ROA).	.784
	Financial	FP2	Return on equity (ROE).	.871
	performance	FP3	Return on investment (ROI).	.979
		FP4	Overall, of the bank's performance.	.780
Firm performance				
			α =.844, CR =.90, AVE =.75	
		NFP1	Our bank has a good reputation.	.821
	Non-Financial performance	NFP2	Our bank has loyalty from existing customers.	.704
		NFP3	Our bank has a goodimage.	.931
Model summary statistics: $\chi2$ = 43.334, df = 11, χ^2/df = 3.939, p = .000, CFI = .970, NFI (Delat 1) = .960, Delta2 = .970, RMSEA = .122, TLI (rho2) = .942, ECVI = .461				

From Table 5-25 the results of firm performance model revealed that $\chi 2/df$ scored (3.939) and RMSEA was (.122). The results showed that CFI, TLI and NFI were greater than the recommended 0.90. Consequently, the good fit for the firm performance model was confirmed.

5.8 Correlation and multicollinearity analysis

Before continuing with the findings and results, it is essential to discuss the correlation coefficient and multicollinearity first. According to Schober et al. (2018), a correlation is an association between two variables that can take one of two forms: (1) an increase in the value of one variable leads to an increase in the value of the other variable; or (2) an increase in the value of one variable leads to a decrease in the value of the other variable. Pearson's correlation coefficient, Spearman's correlation coefficient, and Kendal rank correlation coefficient are all methods for estimating the correlation coefficient between variables (Xiao et al., 2016, Hauke and Kossowski 2011).

The correlation analysis was conducted in this study to explore the relationship between independent and dependent variables. A correlation is a numerical measure of the degree of agreement between two sets of scores. Results range between -1.0 and +1.0: -1.0 indicates full disagreement, 0 means no relationship and +1.0 indicates complete agreement (Kline, 1994; Hair et al. 2010). More specifically, Cohen (1988) defined the strength of the relationship between variables: a small correlation as 0.10, a medium correlation as 0.30, and a large correlation as 0.50 or greater. Correlation coefficients were calculated for among all variables. Table 5-26 offers some insights into the relationships between market orientation, technology orientation, learning orientation, service innovation, transformational leadership, and firm performance (financial and non-financial). It can be concluded that the constructs are valid, and there was not a serious threat of multicollinearity in this analysis.

Table 5-26 shows the correlations among the study variables. The highest correlation was between market orientation and learning orientation (r =.687), followed by a significant correlation between market orientation and technology orientation (r = .610), then moderately significant correlations between market orientation and service innovation and transformational leadership (r = .548, .486, respectively). Whereas market orientation had moderate correlations with financial and non-financial performance (r = .223, .264). Learning orientation had significant correlations with technology orientation, transformational

leadership and service innovation (r = 587, .592, .570, respectively), but had moderate correlations with financial performance and non-financial performance (r = .330, .378, respectively).

In addition, the results revealed that technology orientation had moderately significant correlations with service innovation, transformational leadership, and non-financial performance (r = .518, .470, 340, respectively). Whereas technology orientation had weak correlation with financial performance (r = .140). Furthermore, transformational leadership showed a positive correlation with service innovation (r = .536), and good correlation with financial and non-financial performance (r = 227, .305 respectively). Moreover, the results showed a good correlation between financial performance and non-financial performance (r = 279). Additionally, the shared variances between each pair of constructs were calculated to determine if they were lower than the average variance extracted for the individual constructs assessed for discriminant validity in all scales. As Table 5-26 shows, the shared variances (SHVs) between pairs of all possible scale combinations indicated that the AVEs were higher than the associated shared variance in all cases; thereby, convergent validity was deemed satisfactory (Fornell and Larcker, 1981). In the next section we will talk about common method variance (CMV) and variance inflation factor (VIF).

5.8.1 Common method variance

In recent decades, empirical research in organisational studies has focused on the topic of CMV and how it may distort the outcomes of empirical analyses that employ the same respondents as a data source (Tehseen, Ramayah and Sajilan, 2017). CMV happens when the measuring procedure introduces systematic variation into the measures (Tehseen et al., 2017; Richardson, Simering and Sturman, 2009). CMV is defined as a "variance that is attributable to the measurement method rather than to the constructs the measures represent (Podsakoff, Mackenzie, Lee and Podsakoff, 2003: 879; Change, Witteloostuijn and Eden, 2020).

Despite our best efforts to reduce any potential CMV, common method bias may have arisen because the variables and constructions data were obtained from the same respondents (Podsakoff et al., 2003). Two procedural remedies to control for potential CMV and one statistical remedy to evaluate this problem were employed (see Change, Witteloostuijn and Eden, 2010). In doing so, on the one hand, the scale items were carefully evaluated by defining unfamiliar terms, avoiding vague concepts and double-barrelled items. We kept the items

simple, specific, and concise, using a mixed order of the questions (ex ante) and, on the other hand, in the cover letter it was guaranteed that the respondents' anonymity would be preserved in order to reduce evaluation apprehension (Chang et al., 2010; Tsai and Yang, 2014). Following scale purification, all variables employed in the current investigation were entered into an unrotated factor analysis to estimate the number of factors for the statistical remedy. If only one component appeared from the factor analsysis, this would imply that the data had a CMV problem.

To check for this issue, the Harman one factor test was applied, that is, an EFA for all appropriate variables from the questionnaire was conducted. The solution for a single factor should then show low variance extraction if a common method bias is absent (Spector, 2006). In this thesis, factor analsysis resulted in four factors with eigenvalues greater than 1.0, which accounted for 67.139 of the total variance, and factor 1 accounted for 35.604 of the variance. Because a single factor did not emerge and factor 1 did not explain most of the variance, common method bias is unlikely to be a concern in our data (Liu, Luo, and Shi, 2002; Tsai and Yand, 2014). See appendix 9.12.

5.8.2 Variance inflation factor

Since its original usage by Frisch (1934), the word "multicollinearity" has been characterised in a variety of ways in the extensive regression literature. Some definitions of multicollinearity are technically strict, such as geometrical definitions; others are more philosophical. The main aspect of multicollinearity, according to a mathematical definition, is the near linear dependency of column vectors that comprise the design matrix in a conventional linear model (Thompson, Kim, Aloe and Becker, 2017). In the social sciences, multicollinearity is commonly used to refer to a group of strongly linked factors. The technical definition and broader conceptual application of the word may not always coincide (Thompson et al., 2017).

One example is the misconception that a strong correlation between predictors is sufficient to assert multicollinearity. Multicollinearity can occur in regression models when two or more predictors are related (Paul, 2006). As a result, the standard errors of the coefficients rise, and multicollinearity renders some variables statistically insignificant when they should be significant (Daoud, 2017). The variance inflation factor (VIF) test is used in regression models to find multicollinearity among independent variables (Salmerón, Garca and Garca, 2020, O'brien 2007).

We found that the maximum value in the data was from 1.486 to 2.664 lower than the maximum value of 3 and well below the recommended critical limit (<2:448) (see Hair et al., 2010; Kock, 2015), see tables below. According to these results, multicollinearity was concluded to have no substantive impact on the mean-centred regression coefficients. In order to calculate VIFs, each model generates an R-squared value representing the percentage of the variance in an individual independent variable which the set of predictors explains. Therefore, higher values of R-squared demonstrate higher levels of multicollinearity. The VIF values for a predictor can be calculated by the formula below (Salmerón Gómez, Rodríguez Sánchez, García and García Pérez, 2020; Johnston, Jones and Manley, 2018):

Equation 12: Variance inflation factor

$$VIFi = 1/ (1- Ri\ 2\ )$$

As there are correlations between some of the variables in the model, this might have inflated the variance of predictor's coefficients. Therefore, VIF values are calculated and checked in this chapter.

Table 5-26: Collinearity Statistics

Tolerance	VIF
.673	1.486
.594	1.682
.424	2.358
.375	2.664
.433	2.309

a. Dependent Variable: FIP

Table 5-27 Collinearity Statistics

Tolerance	VIF
.673	1.486
.594	1.682
.424	2.358
.375	2.664
.433	2.309

a. Dependent Variable: NFIP

Notes

1. $CR\eta = \frac{\left(\sum \lambda_{\gamma i}\right)^2}{\left(\sum \lambda_{yi}\right)^2 + \left(\sum \varepsilon_i\right)^2}$ where CR, composite reliability for scale η; λy_i, standardized loading for scale item γ_i; and ε_i, measurement error for scale item γi (Fornell and Larcker, 1981).
2. $V\eta = \frac{\sum \lambda_{\gamma i}{}^2}{\sum \lambda_{\gamma i}{}^2 + \sum \varepsilon_i}$ where V_η , average variance extracted for η; λy_i, standardized loading for scale item γ_i, and ε_i , measurement error for scale item γi (Anderson and Gerbing, 1988).

Table 5-28:Bivariate correlation matrix of all DVs and IVs of this study

	Bank Type	Education	Position	Experience	Bank Age	Size	MO	LO	TEO	TL	SIN	FINP	NFIN
Bank Type	1	.01	.00	.00	.21	.02	.02	.03	.01	.03	.02	.67	.07
Education	.110	1	.07	.00	.00	.01	.00	.00	.00	.00	.00	.02	.01
Position	.009	-.260**	1	.01	.00	.00	.00	.01	.18	.00	.00	.03	.00
Experience	-.036	.041	-.091	1	.03	.00	.05	.04	.03	.02	.00	.02	.02
Bank Age	-.464**	.040	-.066	.162*	1	.03	.00	.01	.01	.02	.00	.00	.00
Size	.148*	.124	.058	-.009	.166*	1	.01	.00	.00	.00	.00	.00	.01
MO	.156*	-.002	-.080	-.214**	.040	.111	1	.47	.37	.24	.30	.05	.07
LO	.179*	.047	-.113	-.196**	-.082	.066	.687**	1	.34	.35	.33	.11	.14
TEO	.085	-.029	.042	-.185**	-.090	.010	.610**	.587**	1	.22	.27	.03	.02
TL	.162*	-.047	-.078	-.135	-.141*	.038	.486**	.592**	.470**	1	.29	.02	.09
SIN	.138	.093	-.020	-.082	-.069	.063	.548**	.576**	.518**	.536**	1	.05	.08
FINP	.082	.140*	-.162*	-.133	-.052	-.091	.223**	.330**	.182*	.140**	.227**	.1	.14
NFIN	.265**	-.081	-.034	-.153*	-.050	.119	.264**	.378**	.340**	.305**	.279**	.379**	1

Note: Mo: market orientation, LO: learning orientation, TEO: technology orientation, TL, transformational leadership, SI: service innovation, FINP: financial performance, and NFP: non-financial performance. Shared variances are included in the upper triangle of the matrix.

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

N=199

5.9 Testing the hypotheses

In this study, hypotheses were tested using multiple regression analysis. The main hypotheses of the model were as follows:

H1: Market orientation in banking industry positively influences service innovation.

H2: Technology orientation in banking industry positively influences service innovation.

H3: Learning orientation in banking industry positively influences service innovation.

H4: Transformational leadership in banking industry moderates the relationship between learning orientation, and service innovation.

H5: Transformational leadership in banking industry moderates the relationship between market orientation, and service innovation.

H6: Transformational leadership in banking industry moderates the relationship between technology orientation, and service innovation.

H7: Service innovation in banking industry positively influences financial performance.

H8: Service innovation in banking industry positively influences non-financial performance.

5.10 Regression analysis

In addressing a research problem, the multiple regression method is appropriate when a single metric dependent variable is considered to be linked to two or more metric, independent variables (Hair et al., 2010). The goal of multiple regression analysis is to forecast how the dependent variable will change when the independent factors change. The statistical rule of least squares is most commonly used to accomplish this goal. Multiple regression is useful whenever the researcher wants to predict the amount or size of the dependent variable (Hair et al., 2010).

Evaluating the results of a multiple regression analysis is based on the following statistical criteria (Hair et al., 2010). (1) When using the F statistic, the overall regression model is considered a significant model at p values <.001, <.01, <.05. (2) The strength of relationships between the independent variables and dependent variable is represented by R^2. The value of R^2 ranges from 0 to +1.0 and represents the amount of variable in the dependent variable that is explained by independent variables. The higher the value of R^2 in terms of closeness to 1.0, the stronger the relationship between independents and dependent. (3) The amounts of the

impact and the direction (positive and negative) of the independent variables and dependent variable are represented by the beta coefficient (B). The value of B ranges from -1.0 to + 1.0. The higher the value of B, the greater the impact of the independent variable on the dependent variable. (4) The beta coefficient (s) B must be significant for each of the independent variables using the t statistics at p values <.001, <.01, <.05; when B is significant that indicates the independent variable is a good predictor of the dependent variable.

A multiple linear regression model was used in order to indicate the impact of market orientation, learning orientation and technology orientation, as independent variables, on service innovation and the impact of transformational leadership as a moderating variable between the market, technology and learning orientations and service innovation. The hypotheses were tested using regression analysis as shown in Table 5-27. First, the researcher entered the control variables, then the direct independent variables, and finally the interaction variables. Table 6-27 also shows the changes to R2.

Market orientation, learning orientation and technology orientation were proposed to have a positive relationship with service innovation. Market orientation is a significant predictor of process innovation, as shown in Table 5-27. As we can see from Table 5-27, the regression results of testing the model equation indicated that market orientation had a positive relationship with service innovation (B =217, t =2.442). Consequently, the overall statistical results confirmed the relationship, and therefore hypothesis H1 is accepted.

Moreover, learning orientation and technology orientation were proposed to have a positive relationship with service innovation. A linear regression test was conducted to examine this hypothesis. The results are presented in Table 5-27. As Table 6-27 shows, learning and technology had positive impact on service innovation (ß =.186, t =2.244, ß =.134, t =2.318) respectively. Therefore, hypotheses H2 and H3 are accepted.

As discussed earlier in terms of the relationship between market, learning and technology orientations and service innovation, the researcher decided to investigate the moderating role of transformational leadership between market, learning and technology orientation on service innovation, using multiple regression analysis. Table 5-27 below shows the results.

As can be seen from Table 5.27, the regression results of testing the model equation indicated that transformational leadership as a moderator variable has a positive impact between market

orientation and service innovation (ß =.196, t = 2.289). Moreover, the results showed that transformational leadership had a positive impact as moderator between learning orientation and service innovation (ß =.271, t =3.920). However, the results showed that transformational leadership had no impact on the relationship between technology orientation and service innovation (ß =.001, t =.026). Therefore, hypotheses H4 and H5 are confirmed, whereas H6 is rejected.

In this study, service innovation was proposed to have a positive relationship with firm performance (financial performance and non-financial performance). The regression results are presented in Table 5.28, which shows that service innovation had a positive relationship with financial performance and non-financial performance (ß =.258, t= 2.946, ß =.190, t =2.757), respectively, and therefore hypotheses H7 and H8 are accepted.

Furthermore, three stepwise regression models were calculated to examine how much the independent variables explained the variation of the dependent variable. Table 5-27 shows the findings of the three models. Model one shows that the control variables explained only (Adjusted R^2 =.033). The second model shows that the independent variables were significant on service innovation (Adjusted R^2 =.455), indicating these variables explained .0455 of the variation of service innovation. As the table shows, for the third model the interactions explained (Adjusted R^2 =.467) of the variation of service innovation. Table 5-28 shows the findings of the four models. Model one shows the control variables.

Table 5-29: Hierarchical Moderated Regression Analysis, Sample size = 199

	Service innovation					
	Model 1		Model 2		Model 3	
Control variables	B (Std. Error)	t-value	B (Std. Error)	t-value	B (Std. Error)	t-value
Type of Bank	.175 (.127)	1.377	-.013 (.099)	-.131	-.004 (.096)	-.038
Education	.133 (.130)	1.027	.205 (.099)	2.062	.177 (.097)	1.829
Position	-.005 (.035)	-.156	.031 (.027)	1.155	.035 (.026)	1.364
Experience	-.047 (.043)	-1.102	.042 (.034)	1.261	.051 (.033)	1.546
Bank Age	-.008 (.051)	-.148	-.015 (.040)	-.385	-.017 (.038)	-.430
Size	.037 (.073)	.512	.003 (.056)	.058	.010 (.054)	.192
Direct effect						
Market Orientation (MO)			.217* (.089)	2.442	-.829 (.451)	-1.837
Learning Orientation (LO)			.186* (.083)	2.244	.602*** (.371)	4.320
Technology Orientation (TO)			.134* (.058)	2.318	.115 (.283)	.408
Transformational Leadership (TL)			.200*** (.053)	3.779	.578 (.321)	1.800
Interactions						
MO * TL					.196** (.085)	2.289
LO * TL					.271*** (.069)	3.920
TO * TL					.001 (.054)	.026
R^2	.033		.455		.502	
ΔR^2	----		.422		.047	
Adjusted R^2	.003		.427		.467	
F-value	1.096		15.727***		14.346***	

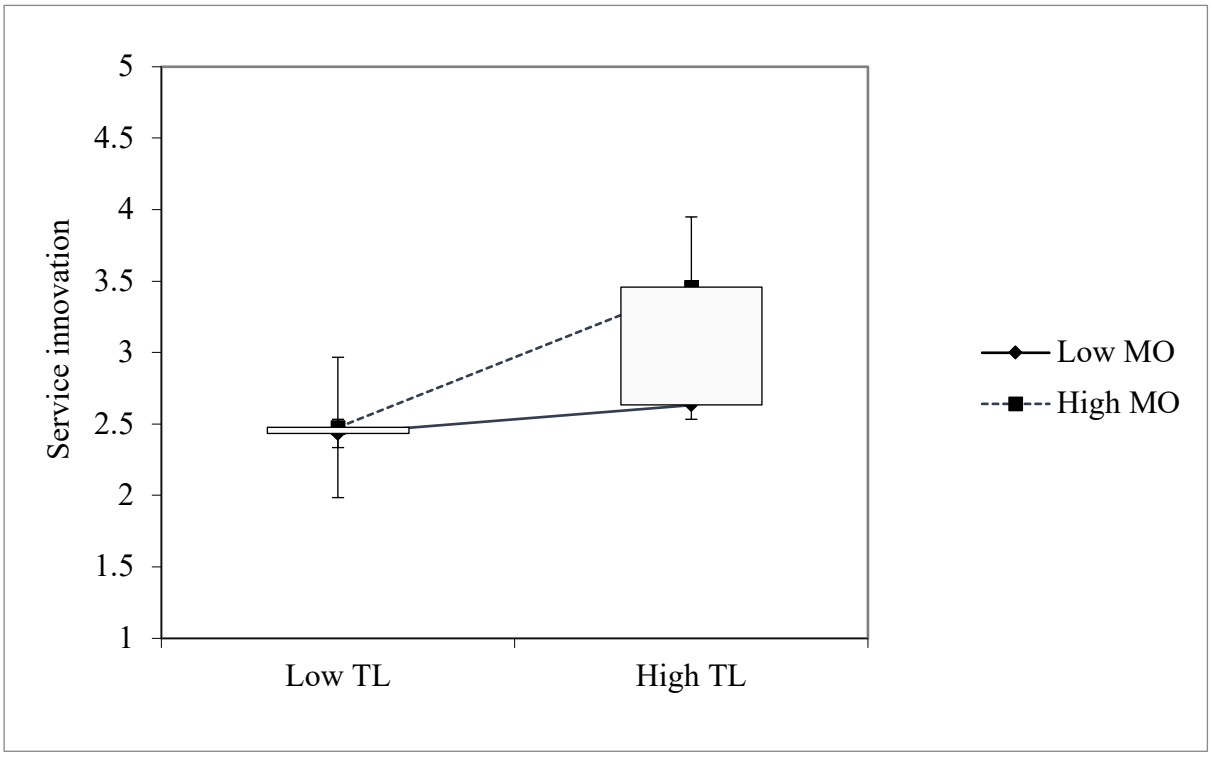
Table 5-30:Hierarchical Moderated Regression Analysis, Sample size = 199

	Financial Performance				Non-Financial Performance			
	Model 1		Model 2		Model 3		Model 4	
Control variables	B (Std. Error)	t-value	B (Std. Error)	t-value	B (Std. Error)	t-value	B (Std. Error)	t-value
Type of Bank	.176 (.157)	1.118	.131(.155)	.843	.522*** (.131)	3.984	.437*** (.120)	3.652
Education	.249 (.161)	1.550	.214 (.158)	1.358	-.274** (.134)	-2.053	-.373** (.122)	-3.051
Position	-.082 (.043)	-1.913	-.081 (.042)	-1.918	-.044 (.036)	-1.221	-.018 (.033)	-.565
Experience	-.113** (.053)	-2.140	-.101 (.052)	-1.942	-.103 (.044)	-2.344	-.061 (.041)	-1.508
Bank Age	.015 (.063)	.245	.017 (.062)	.281	.072 (.052)	1.381	.069 (.048)	1.457
Size	-.142 (.091)	-1.565	-.151 (.089)	-1.704	.079 (.075)	1.053	.114 (.069)	1.651
Direct effect								
Service innovation (SIN)			.258** (.087)	2.946			.190** (.069)	2.757
Financial Performance (FP)							.293*** (.056)	5.264
R^2	.075		.115		.127		.289	
ΔR^2	----		.04		----		.162	
Adjusted R^2	.046		.083		.100		.259	
F-value	2.606		3.563		4.647		9.641	

Moderator variables are third variables that divide a focal independent variable into subgroups that determine its areas of greatest efficacy in relation to a specific dependent variable (Baron & Kenny, 1986). Moderator factors, as a result, influence the intensity and/or direction of a link between an independent predictor variable and a dependent variable. Interaction is another term for moderation. In this thesis, we examined transformational leadership as a moderating impact between market orientation, technology orientation, learning orientation and service innovation.

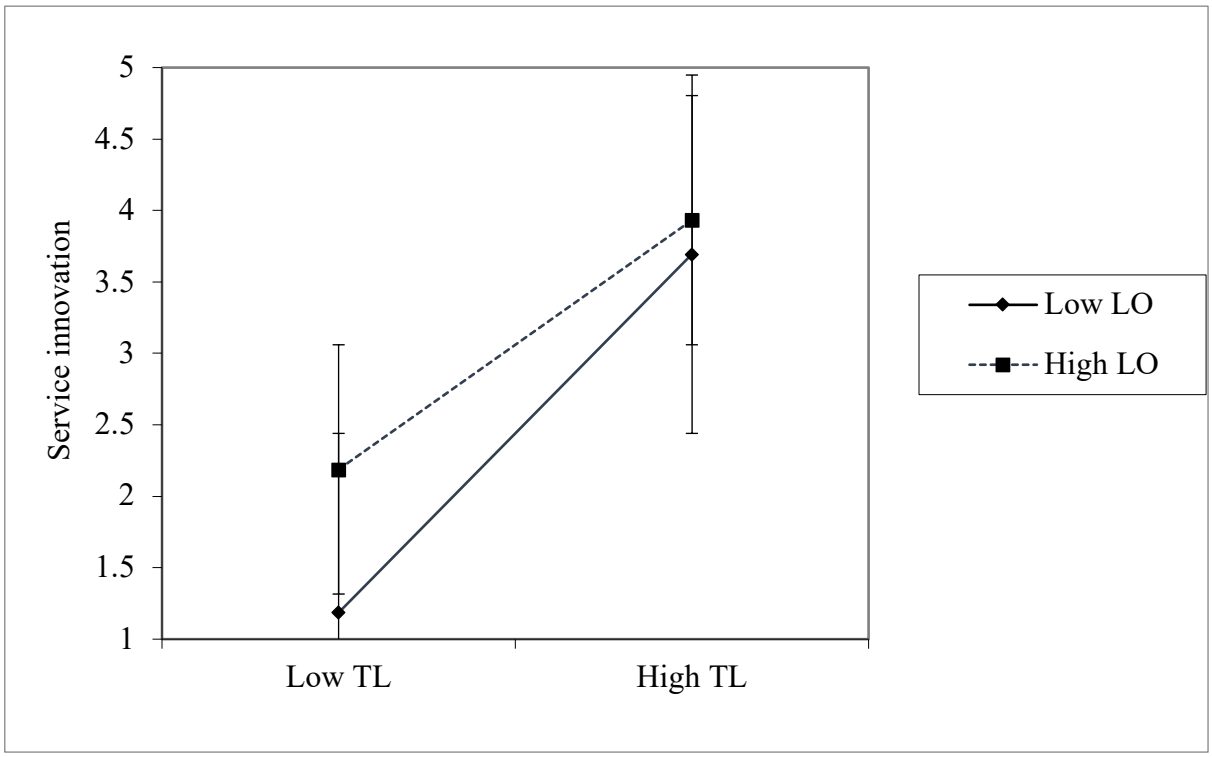
To illuminate the nature of the interaction terms, we plotted the relationship between service innovation and market and learning orientations at high and low levels of transformational leadership (Fig. 5-1, Panel A), coupled with a simple slope examination for each (Aiken and West, 1991). Fig. 5-1, Panel A illustrates that the positive relationship between market orientation and service innovation becomes significant at high levels (simple slope =+.71, t-value=2.76, p<.001) versus low (simple slope = +.87, t-value=2.34, p<.001) levels of transformational leadership.

Panel A:Figure 5-1:The moderating role of TL on the market orientation – service innovation relationship.



The moderating role of transformational leadership on market orientation

Panel B:Figure 5-2:The moderating role of TL on the learning orientation – service innovation relationship.



The moderating role of transformational leadership on learning orientation

Fig.5-2, Panel B illustrates that the positive relationship between learning orientation and service innovation becomes significant at high levels (simple slope =+.13, t-value=1.42, ns) versus low (simple slope = +.53, t-value=8.41, p<.001) levels of transformational leadership.

Table 5-31:Summary table of hypotheses testing

No	Hypotheses	Expected results	Empirical results
H1	Market orientation in banking industry positively influences service innovation.	+	*
H2	Technology orientation in banking industry positively influences service innovation.	+	*
H3	Learning orientation in banking industry positively influences service innovation.	+	*
H4	Transformational leadership in banking industry moderates the relationship between learning orientation and service innovation.	+	*
H5	Transformational leadership in banking industry moderates the relationship between market orientation and service innovation.	+	*
H6	Transformational leadership in banking industry moderates the relationship between technology orientation and service innovation.	+	ns
H7	Service innovation in banking industry positively influences firm performance (financial performance).	+	*
H8	Service innovation in banking industry positively influences firm performance (non-financial performance).	+	*

5.11 Summary of chapter five

This study conducted a survey of first, second, and third line managers from the Jordanian banking industry. SPSS version 26 software was used to present the demographic profile of the respondents and the descriptive statistics of the construct were used to analyse the completed surveys. Next, this research used AMOS version 26 to carry out Structural Equation Modelling (SEM). This process involved two stages: confirmatory factor analysis and testing of the structural model (Hair et al., 2010). This research parallels that of Hair et al. (2010), which also validated the CFA through two stages: the Goodness of fit indices, followed by Construct Validity. The results revealed that seven out of the eight hypotheses proposed in the research are supported. The following chapter will further discuss these results with reference to the past literature.

6 Discussion

6.1 Introduction

In the previous chapter, the research hypotheses were tested and the results were reported. This chapter will discuss these results in more detail in order to answer the research questions and achieve the aim and objectives of this research study. The empirical results reported in the previous chapter will first be discussed in terms of the set of hypotheses focusing on the relationship between market, technology, learning orientations, transformational leadership, service innovation and firm performance.

6.2 Market orientation, technology orientation, learning orientation, transformational leadership, service innovation and firm performance

This section presents a detailed discussion of the results achieved in the previous chapter in regard to the hypotheses associated with the impact of market, technology, learning orientations on service innovation and firm performance. It also tested the moderating impact of transformational leadership between market orientation, technology orientation, learning orientation and service innovation. This implies a specific focus of this section on hypotheses H1- H8 as presented in Table 5-1 in the summary section of Chapter 3.

6.2.1 The direct relationship between market orientation and service innovation

Market orientation refers to a firm's superior ability to clarify and satisfy its customers (Yeh, 2016; Cantaleano, Rodrigues and Martins, 2018). This study is in line with previous studies on the hypothesis that market orientation and service innovation are significant (H1). In line with the theoretical argument leading to H1, the empirical results of this study support a direct positive impact between market orientation and service innovation. The results indicate that observed positive impact between market orientation and service innovation is driven by three dimensions of market orientation (customer orientation, competitor orientation and inter-functional coordination), as indicated by the t-value of 2.442; hence, hypothesis H1 is supported. This confirms the findings of previous research which highlights the positive impact of market orientation on innovation (Wang et al., 2021; Ho et al., 2018; Kocak et al., 2017; Mahmoud et al., 2016).

Mohmoud et al., (2016) have argued that market-orientated banks tend to be more innovative. Wang et al., (2021) have supported the view that less market-oriented organisations are less

likely to consider innovation. A strong market orientation culture is needed to facilitate innovation (Mohmoud et al., 2016). Our findings provide useful insights for organisations, particularly in the banking industry. Banks attempting to enhance innovation should develop a market orientation culture. This will enable banks to better anticipate and understand the needs of the customer and competitive situations. Moreover, banks would be improved in terms of "sensing" the market and closely tying their products to customer wants (Mahmoud et al., 2016).

On the other hand, this study is not in line with those studies that found negative and non-significant relationships between market orientation and innovation (Serafim and Verissino, 2021; Alhakimi and Mohand, 2020). The reason for the obtained results could be that some firms do not have a marketing function, as non-marketing professionals supervise marketing activities, resulting in poor market performance. Moreover, it could be because small businesses are often owned and managed by a single person. These small businesses lack large staffs and rely heavily on the owner/managers to make decisions and coordinate with the firm's employees in person (Serafim and Verissino, 2021).

6.2.2 The direct relationship between technology orientation and service innovation

Technology orientation refers to a firm's inclination to introduce or use new technologies, products (Masa'deh et al., 2018). This study is in line with previous studies on the hypothesis that technology orientation and service innovation are significant (H2). The empirical results in this study support the direct positive impact of technology orientation on service innovation (H2) Moreover, H2 anticipated that banks that are technology oriented have better service innovation than those that are not, as indicated by the t-value of 2.318; hence, hypothesis H2 is supported. This confirms the findings of previous research which highlights the positive impact of technology orientation on innovation (Adams, 2019; Ramírez-Solis et al., 2022; Joensuu-Salo, Kangas and Mäkipelkola, 2021). These results show that technology-oriented banks can be innovative and bring better services to the market.

However, Ramírez-Solis et al., (2022) have found a negative relationship between technology orientation and innovation. The reason behind this result is that a high level of technology orientation impedes explorative innovation. Another potential explanation for these unexpected results is that many diferent scales were used to assess innovation. Moreover, they found that

although technological capability fosters innovation exploitation at an accelerating rate, it has an inverted U-shaped relationship with innovative exploration.

6.2.3 The direct relationship between learning orientation and service innovation

The action of creating and applying knowledge to improve competitive advantage is referred to as learning orientation (Mahmoud et al., 2016). The results indicate that the observed positive impact between learning orientation and service innovation is driven by three dimensions of learning orientation (commitment to learning, shared vision and open-mindedness), as indicated by the t-value of 2.244; hence, hypothesis H3 is supported. This confirms the findings of previous research which highlighted the positive impact of learning orientation on innovation (Adiguzel, 2019; Milbratz et al., 2020; Serafim and Verissimo, 2021).

These findings imply that knowledge acquisition and integration of existing and new knowledge through learning enhance innovation (Ghasemzadeh et al., 2019). In which case, learning orientation was found to be closely related to the organisation's innovative activities. If an organisation has a learning orientation, it will have a desire to develop learning activities like investment in education and training (Calantone et al., 2002; Jyoti and Dev, 2015), create and implement knowledge (Kumar et al., 2020), collect knowledge and information from different sources (Kumar et al., 2020), share knowledge across the organisation and accept new ideas (Calantone et al., 2002). As a result, new knowledge is acquired from different sources, especially external ones, and its combination with existing knowledge of the organisation leads to innovative ideas and initiatives.

On the other hand, Ramírez-Solis et al., (2022) have found a negative relationship between learning orientation and innovation in SMEs. Learning in SMEs is firm specifc and work based, producing operational efficiency in the short term (Ramírez-Solis et al., 2022), indicating a “reaction” more than an innovation. This idea could be one of the potential explanations for this fnding. Another possible explanation is that other factors should be considered to understand the negative relationship in the SME context (Ramírez-Solis et al., 2022).

6.2.4 Relationship between market, technology, learning orientations and service innovation moderated by transformational leadership (Modiator)

This section examines the moderator role of transformational leadership in the relationship between market, technology and learning orientations and service innovation.

Transformational leadership is one of the most popular concepts in management literature because of its motivational and relational style (Jyoti and Dev, 2015). Transformational leadership refers to the organisational leader's ability to influence followers' behaviour and self-interest towards organisational goals, performing beyond their duties or fulfilling leaders' expectations (Liu and Lee, 2019).

Transformational leadership plays a major role in innovation This study argued that the relationship between market orientation and service innovation is moderated by transformational leadership, as indicated by the t-value of t = 2.289; hence, hypothesis H4 is supported. This is the first study to investigate the role of transformational leadership as a moderator in the relationship between market orientation and service innovation. These results suggest that TL is critical to the success of banking industry. Thus, it offers opportunities for banks' managers to understand the four critical attributes (idealised influence, intellectual stimulation, inspirational motivation, and individual consideration) of TL, which invariably would improve service innovation, thereby leading to better performance in the banking industry. However, TL moderates the relationship between market orientation and service innovation.

In addition, the empirical results in this study support the moderating impact of transformational leadership between learning orientation and service innovation (H5), as indicated by the t-value of t =3.920; hence, hypothesis H5 is supported. This is the first study to investigate the role of transformational leadership as a moderator in the relationship between learning orientation and service innovation. However, the empirical results in this study do not support the moderating impact of transformational leadership between technology orientation and service innovation (H6), as indicated by the t-value of t =.026; hence, hypothesis H6 is rejected. This is the first study to investigate the role of transformational leadership as a moderator in the relationship between technology orientation and service innovation.

6.2.5 The direct impact of service innovation on firm performance

The ability to offer service innovation leads to the creation of new market niches that can be exploited by the firm, thereby enabling the firm to attract more customers, which leads to an increase in market share and an increase in firm performance. The empirical results in this study support the direct positive impact of service innovation on financial and non-financial performance (H7 and H8), as indicated by the t-value of (t= 2.946, t =2.757), respectively, and

therefore hypotheses H7 and H8 are accepted. This confirms the findings of previous research which highlights the positive impact of service innovation on firm performance (Lin, 2013; Tsai and Wang, 2017; Serafim and Verissimo, 2021). The results indicate that service innovation plays a strong role in promoting the firm's performance in banking industry.

6.2.6 Summary of chapter six

This chapter presented a detailed discussion of the results of hypotheses testing reported in Chapter 5. In discussing the results of this research study, there has been an attempt to position the results achieved for each of the research hypotheses within the relevant extant literature, so differences have been highlighted and implications have been deduced.

The findings of this research indicated that market orientation, technology orientation and learning orientation have a direct positive impact on service innovation. Moreover, market orientation and learning orientation have a positive impact on service innovation through the moderating impact of transformational leadership; however, technology orientation has no impact on service innovation through the moderating impact of transformational leadership. Finally, service innovation had a positive impact on both financial and non-financial performance.

7 Conclusion

7.1 Introduction

The purpose of this chapter is to present the final conclusions drawn from the study findings and how these findings meet the study's objectives and answer its questions. This study aimed to examine the influence of service innovation on firm performance in the banking industry in Jordan and the impact of market, technology and learning orientation on service innovation. Furthermore, to examine the moderating impact of transformational leadership between market, technology, learning orientations and service innovation. To address this aim, the current study made use of a theory (CT) to develop a theoretical model and establish a set of research hypotheses. The model treated market, technology and learning orientations as independent variables, transformational leadership as having a moderating impact, and finally, service innovation and firm performance as dependent variables.

To test the theoretical model a positivist approach was adopted, and a cross-sectional survey was administered in the banking sector in Jordan. The data were collected using multiple methods including a questionnaire instrument. The most appropriate statistical techniques were adopted for data and hypotheses testing, including factor loading and AMOS.

The second section of this chapter summarises the findings that emerged from the data analysis and hypotheses testing process. The third section revisits the research questions in an attempt to provide answers to these questions based on the findings of this research study. The main conclusions of this study are provided in the fourth section. The fifth section highlights the main contributions of this study. Similar to any other study, this thesis is not perfect; hence, the last section of this study identifies its limitations and suggests directions and opportunities for future studies.

7.2 Summary of the study's findings

This thesis tested the direct and synergistic impacts of market, technology, learning orientations, transformational leadership on service innovation and firm performance and the moderating impact of transformational leadership between market, technology and learning on service innovation while controlling for the effects of firm size, and firm age.

I. Market orientation is found to have a direct positive association with service innovation.

II. Technology orientation is found to have a direct positive relationship with service innovation.
III. Learning orientation is found to have a direct positive relationship with service innovation.
IV. In terms of the impact of transformational leadership as a moderator, market orientation and learning orientation have a positive impact on service innovation through the moderating impact of transformational leadership. However, technology orientation has no impact on service innovation through transformational leadership as a moderator.
V. Service innovation is found to have a positive direct impact on firm performance (financially and non-financially).

As has been reported above, a number of relationships as proposed by the theoretical model are supported in this study.

7.3 Revisiting the research questions

This research study sought to answer one main main research question and two sub-research questions as stated in the first chapter. These questions are:

Q (1) What is the impact of service innovation on firm performance in the banking sector?
Q (1A) What are the impacts of market, technology and learning orientations collectively as three key strategic orientations on service innovation and firm performance?
Q (1B) What is the moderating impact of transformational leadership between market, technology and learning orientations and service innovation and, in turn, on improving firm performance?

7.3.1 The first research question

The first research question constructively questioned the impact of service innovation on firm performance (financially and non-financially). To answer the first question, SPSS analsyis was used to test the corresponding hypotheses. The results suggest a direct positive impact of service innovation on firm performance. In the current form, the findings of this study support the presence of a direct impact of service innovation on both financial and non-financial performance. This study is in line with previous research which found the same results (Feng et al., 2020; Taghizadeh et al., 2019; Berraies and Hamouda, 2018).

7.3.2 The second research question

The second research question addresses the impacts of market, technology, and learning orientations as three key strategic orientations on service innovation and firm performance. The results suggest a direct positive impact of market, technology and learning on service innovation that in turn impacts firm performance (financially and non-financially). The study is in line with the previous research which also found a poaitive relationship between these variables (Ghasemzadeh et al., 2019; Milbratz et al., 2020; Koca et al., 2017; Ramírez-Solis et al., 2022; Mahmoud et al., 2016; Sendaro and Baharun, 2019).

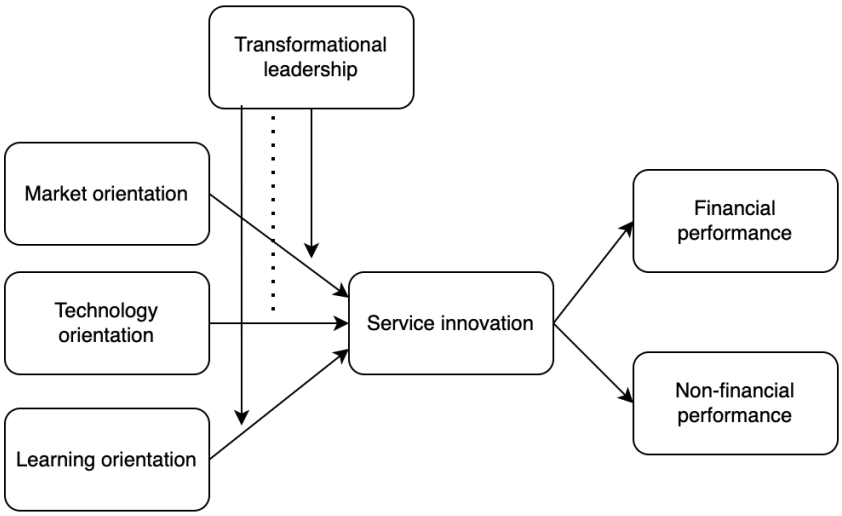
7.3.3 The third research question

The third question addresses the impact of transformational leadership as a moderator between market, technology and learning orientations and service innovation that in turn improves firm performance. The results suggest a positive impact of market and learning orientations on service innovation as moderated by transformational leadership. However, the results also found no positive impact of technology orientation on service innovation as moderated by transformational leadership.

7.4 Contributions of the study theory and practice

Among the existing strategic orientations, this study showed different results which are aligned with some of the studies in different contexts (Hameed, Nisar and Wu, 2021; Ramírez-Solis et al., 2022; Mohmoud et al., 2016; Masa'deh et al., 2018). The findings of this research contribute to both service innovation- firm performance literature and practice. For example, Hameed et al., 2021 have studied the relationship between external knowledge, internal innovation, firms' open innovation performance, service innovation and business performance in the Pakistani hotel industry. Moreoever, Ramírez-Solis et al., 2022 have examined the role of relational capital and technology orientation in innovation and their impact on firm performance in Mexican SMEs. Masa'deh et al., 2018 have have explored the relationship between three variables of strategic orientation (market, technology, entrepreneurial orientations) and organizational performance in the Jordanaian pharmaceutical sector. Based on the theoretical framework below Table 7-1 this study contributes in different ways to service innovation- firm performance literature in banking industry.

Figure 7-1: Theoretical framework



7.4.1 Contributions to the study theory

This study contributes to the literature on innovation by developing a specific model to measure the impact of market orientation, technology orientation, learning orientation, transformational leadership and service innovation on firm performance of banking industry in Jordan. The contributions are summarised below:

First, this thesis is the first study to investigate different strategic orientations (market orientation, technology orientation and learning orientation), transformational leadership, service innovation and firm performance in banking sector (Mahmoud et al., 2016; Kocak et al., 2017; Milbratz et al., 2020). Other studies mostly focused only on a single or different dimensions of strategic orientations. None of the previous studies in different contexts, including banks, combined the three orientations and transformational leadership in one research or interpreted the impacts on service innovation and, in turn, improving firm performance. Studies such as Leng et al., (2015) have analysed the effect of market orientation and technology orientation on innovation and performance in high-tech firms in China. Mahmoud et al., (2016) have examined the effect of market orientation and learning orientation on innovation and performance in the context of banks in Ghana. In addition, Kocak et al., (2017) have examined the effect of market, technology, and entrepreneurial orientations on both innovation and firm performance in small and medium enterprises in Turkey. Similarly, Beneke, Blampied, Dewar and Soriano, (2016) have considered the impact of market orientation and learning orientation on organisational performance in the context of small- and medium-sized enterprises in Cape Town.

Masa'deh et al., (2018) have explored the relationship between three variables of strategic orientation (market orientation, technology orientation, entrepreneurial orientation) and organisational performance in the Jordanian pharmaceutical sector. Moreover, Milbratz et al. (2020) have analysed the influence of learning, service innovation and performance in Brazilian architectural firms. Lin et al., (2019) have provided implementation insights into the impact of service orientation, customer orientation, and learning orientation on firm performance in manufacturing firms in Southeast China. Therefore, this study is makes a vital contributions to banking industry literature.

Second, this thesis provides new insights into the impact of transformational leadership as a moderating impact between market orientation, technology orientation, learning orientation and service innovation, in the Jordanian banking context. Tayal et al., (2018) stated that banks must develop and encourage their employees' creativity in order to drive organisational change. They also stated that innovative ideas will be generated when employees are encouraged by leaders to communicate openly and thus share their thoughts with one another. As a result, banks' policies must focus on recognising, developing, and supporting the right type of leadership, specifically transformational leadership, in their organisations.

Many studies have examined transformational leadership as a moderating impact. Knezović and Drkić (2021) have investigated the determinants of innovative work behaviour (IWB) by examining the moderating role of transformational leadership in the context of small and medium enterprises (SMEs). Moreoever, Mubarak et al., (2021) have assessed the relationship between proactive personality and innovation work behaviour by incorporating the moderating role of transformational leadership between proactive personality and work engagement in Pakistani small-medium enterprises (SMEs). Hameed et al., (2022) have also examined transformational leadership as a moderating impact between green human resource management practice and perceived green organisational support from organisations working in grocery, food and personal care products in Pakistan.

Third, the findings of this research will be useful in helping managers of Islamic and non-Islamic banks to understand how market, technology, and learning orientations,

transformational leadership and service innovation can enhance the performance of banks. Moreover, this thesis is the first in a banking context to measure both Islamic and non-Islamic banks in Jordan.

Fourth, More importantly, few studies have focused on banks in Arab countries such as Jordan and the results of this study will therefore contribute to the literature on service innovation and firm performance in a novel developing country context.

7.4.2 Contributions to practice

Banking industry is known as a dynamic industry and his study allows us to make important managerial recommendations for improving firm performance as well as service innovation in banking sector. Managers can harness the positive impacts of the relationships we concluded exist between market orientation, technology orientation, learning orientation, transformational leadership, and service innovation. Therefore, the findings of this thesis provide valuable insights for managers of the banking industry (specifically in Jordan) on how different orientations on strategies and transformational leadership can impact service innovation and in turn improve firm performance (financially and non-financially).

First, the findings of this thesis show that higher levels of learning, marketing, technology orientations and service innovation have led these organisations to higher levels of financial and non-financial performance. These findings reveal that market, learning, technology, transformational leadership and service innovation, as major capabilities, should be encouraged in order to increase the level of firm performance in terms of ROA, ROI, ROE, performance in general, brand image, reputation, and loyalty.

Second, the findings of this thesis also suggest that learning orientation and service innovation lead to better performance. This could be achieved by creating an organisational culture where innovation and openness to new ideas become an integral part of the organisational culture. These findings are also supported by the marketing-oriented view that organisations that focus on learning and innovation are expected to have better performance than those who do not (Tajeddini, 2016).

Third, Managers in Jordanian banks should adopt a transformational leadership style to enhance market orientation, learning orientation service innovation, and in turn improve the performance of banks. Employees are essential resources of any organisation, and sustainable competitive advantage in terms of banks' performance cannot be achieved without their sincere participation, satisfaction, and innovation.

7.5 Managerial implication

With the assistance of this research, we are able to provide critical management recommendations for improving business performance and service innovation in the banking sector in Jordan. According to the study's findings, increased degrees of learning, market, technological, and service innovation enabled banks to perform at higher levels both financially and non-financially. These findings indicate that market, learning, technology, transformational leadership, and service innovation are critical qualities that should be fostered in order to improve company performance in terms of ROA, ROI, ROE, brand image, and corporate reputation.

This study's findings also suggest that an emphasis on learning and service innovation improves performance. This could be accomplished by cultivating a company culture that promotes innovation and is open to new ideas. These findings are further reinforced by the concept of market orientation, which states that firms that prioritise learning and innovation will outperform those that do not (Tajeddini, 2014).

Managers at Jordanian banks should adopt a transformational leadership style in order to improve the banks' performance by improving market focus, learning orientation, and service innovation. Employees are a company's most precious asset, and it is hard to maintain a competitive advantage without their enthusiastic involvement, pleasure, and innovation, which may affect bank performance.

7.6 Limitations of the study and directions for future research

Although this thesis provides valuable contributions to literature and practice, it contains some limitations. In addition, below, some opportunities are identified for future studies on the service innovation-firm performance relationship.

First, given the complexity of the model developed in this study, future research can test the impact of other constructs, such as the environment of Islamic and non-Islamic banks, and other strategic orientations such as enterpreneural orientation specially in banking because we do not know about enterpreneural in banking industry, it is better to focus on service innovation

in terms of back stage and front stage and with greater focus on risk and innovation in banking. Moreover, it would be revealing if other research used objective performance variables and how different styles of leadership such as transaction leadership in banking sector has an impact on innovation and in turn improve firm performance.

Second, our study was conducted with data from only one region, i.e. Jordan, and the data were collected from the banking sector as a research sample. So, the results can at the most be generalised to Jordanian banking industry. Our data were collected from the service sector; thus, this research did not investigate or discuss how manufacturing firms can have an impact by measuring market orientation, technology orientation, learning orientation, transformational leadership, innovation and firm performance. As suggested by previous literature, manufacturing and service firms experience different types of innovation (Zhao and WU, 2017).

Third, the cross-sectional nature of this research prevents making definitive statements about causality between the dependent variables (DVs) and independent variables (IVs) involved in this research. Future research of a longitudinal nature could advance the findings of this study and provide unique information on the sustainability of the impact of service innovation on firm performance. Further, obtaining a larger study sample would allow for more robust results to be obtained. In addition, further research based on a larger sample size and different sectors would allow comparing results so that the relationships could be determined more clearly. Finally, application of qualitative methods would help to gain a more in-depth understanding of the relationships in the banking industry.

Fourth, future research could conduct a comparative study between Islamic and non Islamic banks. Further, research conducted in different contries could make the findings more generalisable to countries which are institutionally similar to or different from Jordan. Conducting a comparative study using the statistics of another country with similar institutional charateristics (e.g. a Middle Eastern Muslim country) could consolidate the findings of this thesis. Besides, comparing Jordan with a developed economy could highlight how differences in the instituitions of developing and developed countries can influence the effectiveness of different strategy orientations, transformational leadership, service innovation and firm performance. Such a study would significantly contribute to enabling academics and

practitioners interested in and operating in the banking context to compare the results of different countries.

7.7 Summary of chapter seven

This chapter has summarised the findings of this thesis to show how it has contributed to the literature by studying the relationship between different orientations, transformational leadership, service innovation and firm performance of Jordanian banks. Furthermore, the limitations of the thesis and opportunities for future studies have been outlined in this chapter.

8 References

Abdulai Mahmoud, M., & Yusif, B. (2012). Market orientation, learning orientation, and the performance of nonprofit organisations (NPOs). *International Journal of Productivity and Performance Management,* 61(6), 624-652.

Abdul-Majid, M., Saal, D., & Battisti, G. (2010). Efficiency in Islamic and conventional banking: an international comparison. *Journal of Productivity Analysis*, 34(1), 25–43. https://doi.org/10.1007/s11123-009-0165-3.

Abdul-Majid, M., Falahaty, M., & Jusoh, M. (2017). Performance of Islamic and conventional banks: A meta-frontier approach. *Research in International Business and Finance*, 42, 1327–1335. https://doi.org/10.1016/j.ribaf.2017.07.069.

Adıgüzel, Z. (2019). Relationships among leader effectiveness, learning orientation, effective communication, team creativity and service innovation in the service sector. *Business and Economics Research Journal.*

Adams, P., Freitas, I. M. B., & Fontana, R. (2019). Strategic orientation, innovation performance and the moderating influence of marketing management. *Journal of Business Research*, 97, 129-140.

Afriyie, S., Du, J., & Ibn Musah, A. A. (2019). Innovation and marketing performance of SME in an emerging economy: the moderating effect of transformational leadership. *Journal of Global Entrepreneurship Research*, 9(1), 1-25.

Ahmed Zebal, M., & M. Saber, H. (2014). Market orientation in Islamic banks – a qualitative approach. *Marketing Intelligence & Planning*, 32(4), 495–527. https://doi.org/10.1108/MIP-08-2013-0138.

Alhakimi, W., & Mahmoud, M. (2020). The impact of market orientation on innovativeness: Evidence from Yemeni SMEs. *Asia Pacific Journal of Innovation and Entrepreneurship*.

Al Naqbia, E., Alshuridehb, M., AlHamadc, A., & Al, B. (2020). The impact of innovation on firm performance: a systematic review. *International Journal of Innovation, Creativity and Change*, 14(5), 31-58.

Al-Nasser Mohammed, S., & Joriah Muhammed, D. (2017). Financial crisis, legal origin, economic status and multi-bank performance indicators. *Journal of Applied Accounting Research*, 18(2), 208–222. https://doi.org/10.1108/JAAR-07-2014-0065.

Alan O. Sykes, "An Introduction to Regression Analysis" (Coase-Sandor Institute for Law & Economics Working Paper No. 20, 1993).

Al-Dmour, H., Algharabat, R., Khawaja, R., & Al-Dmour, R. (2019). Investigating the impact of ECRM success factors on business performance. *Asia Pacific Journal of Marketing and Logistics*, 31(1), 105–127. https://doi.org/10.1108/APJML-10-2017-0270.

Al-edenat. (2018). Reinforcing innovation through transformational leadership: mediating role of job satisfaction. *Journal of Organizational Change Management*, 31(4), 810–838. https://doi.org/10.1108/JOCM-05-2017-0181.

Alrowwad, A. A., Abualoush, S. H., & Masa'deh, R. E. (2020). Innovation and intellectual capital as intermediary variables among transformational leadership, transactional leadership, and organizational performance. *Journal of Management Development*, 39(2), 196-222.

Ali Ababneh, O. M., Awwad, A. S., & Abu-Haija, A. (2021). The association between green human resources practices and employee engagement with environmental initiatives in hotels: The moderation effect of perceived transformational leadership. *Journal of Human Resources in Hospitality & Tourism*, 20(3), 390-416.

Al-Ansaari, Y., Bederr, H., & Chen, C. (2015). Strategic orientation and business performance. *Management Decision*, 53(10), 2287–2302. https://doi.org/10.1108/MD-01-2015-0034.

Al-Jazzazi, A., & Sultan, P. (2017). Demographic differences in Jordanian bank service quality perceptions. *International Journal of Bank Marketing*, 35(2), 275–297. https://doi.org/10.1108/IJBM-07-2016-0091.

Amankwaa, A., Gyensare, M., & Susomrith, P. (2019). Transformational leadership with innovative behaviour: Examining multiple mediating paths with PLS-SEM. *Leadership & Organization Development Journal*, 40(4), 402–420. https://doi.org/10.1108/LODJ-10-2018-0358.

Anning-Dorson, T. (2018). Customer involvement capability and service firm performance: The mediating role of innovation. *Journal of Business Research*, 86, 269–280. https://doi.org/10.1016/j.jbusres.2017.07.015.

Anderson, J.C. and Gerbing, D.W. (1988), "Structural equation modeling in practice: a review and recommended two-step approach", Psychological Bulletin, Vol. 103 No. 3, pp. 411-423.

Aracil, E. (2019). Corporate social responsibility of Islamic and conventional banks. *International Journal of Emerging Markets*, 14(4), 582–600. https://doi.org/10.1108/IJOEM-12-2017-0533.

Aracil, E. (2019). Corporate social responsibility of Islamic and conventional banks: The influence of institutions in emerging countries. International Journal of Emerging Markets.

Arbuckle, J. L. (2009) Amos 18 User's Guide. Crawfordville, Florida: Amos Development Corporation.

Association of banks in Jordan. (2018). Jordanian banks. Association of Banks in Jordan. Retrieved from.www.abj.org.jo/echobusv3.0/systemassets/أبرز%20التطورات%20المصرفية%20في%20الاردن%20خلال%20عام%202020182%.pdf.

Association of banks in Jordan.(2020). Jordanian banks. Association of Banks in Jordan. Retrieved from. https://www.abj.org.jo/echobusv3.0/systemassets/2020-2042%التقرير%20السنوي.pdf.

Asaah, J., Yunfei, S., Wadei, K., & Nkrumah, K. (2019). Cultural orientations and product innovation in the Ghanaian banking sector. *The Service Industries Journal*, 1–23. https://doi.org/10.1080/02642069.2019.1569635.

Asad, M., Kashif, M., Sheikh, U. A., Asif, M. U., George, S., & Khan, G. U. H. (2022). Synergetic effect of safety culture and safety climate on safety performance in SMEs: does transformation leadership have a moderating role?. *International journal of occupational safety and ergonomics*, 28(3), 1858-1864.

Atalay, M., Anafarta, N., & Sarvan, F. (2013). The Relationship between Innovation and Firm Performance: An Empirical Evidence from Turkish Automotive Supplier Industry. Procedia - *Social and Behavioral Sciences,* 75(C), 226–235. https://doi.org/10.1016/j.sbspro.2013.04.026.

Atuahene-Gima, K. (1996). Market orientation and innovation. *Journal of business research*, 35(2), 93-103.

Awraq Investment (2015), Jordan Banking Sector, Brief Q3 2015, 28 December, available at: https://www.awraq.com/uploads/research/8fd23684ebc8afe370812239063cbc26ee0bf5d9.pdf

Awasthy, R., & Gupta, R. (2011). Is learning orientation in manufacturing and service firms different in India? *The Learning Organization*, 18(5), 392–408. https://doi.org/10.1108/09696471111151738.

Ayinaddis, S.G., Taye, B.A. & Yirsaw, B.G. Examining the effect of electronic banking service quality on customer satisfaction and loyalty: an implication for technological innovation. J Innov Entrep 12, 22 (2023). https://doi.org/10.1186/s13731-023-00287-y.

Ayadi, R., de Groen, W. P., Hassouba, T., Zaki, C., Alshyab, N., Sandri, S., ... & Sioud, O. B. (2018). Financial development and inclusion in Egypt, Jordan, Morocco and Tunisia. EMNES Studies.

Bamfo, B. A., & Kraa, J. J. (2019). Market orientation and performance of small and medium enterprises in Ghana: The mediating role of innovation. Cogent Business & Management, 6(1), 1605703.

Baron, R. M., & Kenny, D. A. (1986). The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations. *Journal of Personality and Social Psychology*, 51(6), 1173- 1182.

Bass, B. M. (1999). Two decades of research and development in transformational leadership. *European journal of work and organizational psychology*, 8(1), 9-32.

Bass, B. M. (2000). The future of leadership in learning organizations. *Journal of Leadership Studies*, 7, 18–40.

Bass, B. M., Avolio, B. J., Jung, D. I., & Berson, Y. (2003). Predicting unit performance by assessing transformational and transactional leadership. *Journal of Applied Psychology*, 88, 207.

Baker, W. E., & Sinkula, J. M. (2005). Market orientation and the new product paradox. *Journal of product innovation management*, 22(6), 483-502.

Baker, W., & Sinkula, J. (1999). The synergistic effect of market orientation and learning orientation on organizational performance. *Journal of the Academy of Marketing Science,* 27(4), 411–427. https://doi.org/10.1177/0092070399274002.

Baba, Y. (2012). Adopting a specific innovation type versus composition of different innovation types. *International Journal of Bank Marketing*, 30(3), 218–240. https://doi.org/10.1108/02652321211222568.

Barnabas, N., & Mekoth, N. (2010). Autonomy, market orientation and performance in Indian retail banking. *Asia Pacific Journal of Marketing and Logistics*, 22(3), 330–350. https://doi.org/10.1108/13555851011062250.

Baker, T. L., & Risley, A. J. (1994). Doing social research McGraw-Hill New York, NY.

Bai, Lin, L., & Li, P. P. (2016). How to enable employee creativity in a team context: A cross-level mediating process of transformational leadership. *Journal of Business Research*, 69(9), 3240–3250. https://doi.org/10.1016/j.jbusres.2016.02.025.

Batra, S., Sharma, S., Dixit, M. R., Vohra, N., & Gupta, V. K. (2015). Performance implications of industry appropriability for manufacturing SMEs: The role of technology orientation. *Journal of Manufacturing Technology Management.*

Berry, L., Shankar, V., Parish, J., Cadwallader, S., & Dotzel, T. (2006). Creating new markets through service innovation: many companies make incremental improvements to their service offerings, but few succeed in creating service innovations that generate new markets or reshape existing ones. To move in that direction, executives must understand the different types of market-creating service innovations as well as the nine factors that enable these innovations. (Gross Domestic Product). *MIT Sloan Management Review*, 47(2), 56–63.

Beynon, M. J., Jones, P., & Pickernell, D. (2020). SME development strategy and product/service innovation intention: A NCaRBS analysis of the role of uncertainty. *The International Journal of Entrepreneurship and Innovation*, 21(1), 3–16. https://doi.org/10.1177/1465750318807401.

Benner, M.J. and Tushman, M.L. (2003), "Exploitation, exploration and process management: the productivity dilemma revisited", The Academy of Management Review, Vol. 28 No. 2, pp. 238-256.

Beneke, J., Blampied, S., Dewar, N., & Soriano, L. (2016). The impact of market orientation and learning orientation on organisational performance: A study of small to medium-sized enterprises in Cape Town, South Africa. *Journal of Research in Marketing and Entrepreneurship*, 18(1), 90-108.

Bentler, P.M., Bonett, D.G., 1980. Significance tests and goodness of fit in the analysis of covariance structures. Psychol. Bull. 88, 588–606.

Beck, T., Demirgüç-Kunt, A., & Merrouche, O. (2013). Islamic vs. conventional banking: Business model, efficiency and stability. *Journal of Banking & finance*, 37(2), 433-447.

Bell, E., & Bryman, A. (2007). The ethics of management research: an exploratory content analysis. *British journal of management*, 18(1), 63-77.

Berraies, S., & Hamouda, M. (2018). Customer empowerment and firms' performance. *International Journal of Bank Marketing*, 36(2), 336–356. https://doi.org/10.1108/IJBM-10-2016-0150.

Bhandarker, A., & Rai, S. (2015). Positive transformational leadership: case study of an Indian public sector bank. *Asia-Pacific Journal of Business Administration*, 7(1), 34–55. https://doi.org/10.1108/APJBA-03-2014-0044.

Birasnav, M. (2014). Knowledge management and organizational performance in the service industry: The role of transformational leadership beyond the effects of transactional leadership. *Journal of business research*, 67(8), 1622-1629.

Blumberg, B., Cooper, D. R., & Schindler, P. S. (2014). Business research methods (Fourth edition.). McGraw-Hill Education.

Bryman, A. (2016). Social research methods (fifth edition). Oxford university press.

Bryman, A. (2012). Social research methods (fourth edition). Oxford university press.

Browne, M.W., Cudeck, R., 1993. Alternative ways of assessing model fit. In K. A. Bollen, & J. S. Long (Eds.), Testing Structural Equation Models. Newbury Park, CA: Sage.

Byrne, B.M. (1998) Structural equation modeling with LISREL, PRELIS, and IMPLIS, basic concepts, applications, and programming. Mahwah, New Jersey: Lawrence Erlbaum Associates, Inc.

Byrne, B. (2001) Structural equation modeling with AMOS.- basic concepts,applications and programming. New Jersey:Lawrence Erlbaum Associates.

Byrne, B.M. (1998) Structural equation modeling with LISREL, PRELIS, and IMPLIS, basic concepts, applications, and programming. Mahwah, New Jersey: Lawrence Erlbaum Associates, Inc.

Cadogan, J. W., Cui, C. C., & Li, E. K. Y. (2003). Export market-oriented behavior and export performance: The moderating roles of competitive intensity and technological turbulence. International marketing review.

Carless, S. A., Wearing, A. J., & Mann, L. (2000). A short measure of transformational leadership. *Journal of business and psychology*, 14(3), 389-405.

Cantaleano, K. R., Rodrigues, G. P., & Martins, T. S. (2018). The mediating effect of proactive market orientation capability in entrepreneurial orientation and service innovation. RAM. Revista de Administração Mackenzie, 19.

Calantone, R., Cavusgil, S., & Zhao, Y. (2002). Learning orientation, firm innovation capability, and firm performance. *Industrial Marketing Management*, 31(6), 515–524. https://doi.org/10.1016/S0019-8501(01)00203-6.

Calisir, F., Altin Gumussoy, C., & Guzelsoy, E. (2013). Impacts of learning orientation on product innovation performance. *The Learning Organization*, 20(3), 176–194. https://doi.org/10.1108/09696471311328442.

Central Bank of Jordan. (2018). "Central Bank of Jordan." www.cbj.gov.jo/EchoBusV3.0/SystemAssets/8c90c6af-fa44-4aa7-b2ce-2ec90cada8cc.pdf.

Central Bank of Jordan. (2021). "Central Bank of Jordan." https://www.cbj.gov.jo/EchoBusV3.0/SystemAssets/07616a0e-b918-4e42-8ffa-3317fbac78bb.pdf.

Chaudhry, N. I., Roomi, M. A., & Dar, S. (2020). Barriers to financial product innovation in Islamic banks in Pakistan. *Journal of Islamic Accounting and Business Research*.

Chen, Y., Tang, G., Jin, J., Xie, Q., & Li, J. (2014). CEO s' transformational leadership and product innovation performance: The roles of corporate entrepreneurship and technology orientation. *Journal of Product Innovation Management*, 31, 2-17.

Choi, S. B., Kim, K., Ullah, S. E., & Kang, S. W. (2016). How transformational leadership facilitates innovative behavior of Korean workers: Examining mediating and moderating processes. Personnel Review.

Chang, S. J., Van Witteloostuijn, A., & Eden, L. (2020). Common method variance in international business research. Research methods in international business, 385-398.

Chen, J.K., Yu, Y.W. and Batnasan, J. (2014), "Services innovation impact to customer satisfaction and customer value enhancement in airport", in Proceedings of PICMET'14 Conference: Portland International Center for Management of Engineering and Technology, IEEE, Portland, pp. 3344-3357.

Change, S., Witteloostuijn, A. V., & Eden, L. (2010). From the editors: Common method variance in international research. *Journal of International Business Studies*, 41(2), 178-184.

Cheng, C., & Krumwiede, D. (2012). The role of service innovation in the market orientation—new service performance linkage. *Technovation,* 32(7-8), 487–497. https://doi.org/10.1016/j.technovation.2012.03.006.

Chen, J. S., Tsou, H. T., & Ching, R. K. (2011). Co-production and its effects on service innovation. *Industrial Marketing Management*, 40(8), 1331-1346.

Chen, J., Hung Tai Tsou, & Huang, A. (2009). Service Delivery Innovation: Antecedents and Impact on Firm Performance. *Journal of Service Research,* 12(1), 36–55. https://doi.org/10.1177/1094670509338619.

Chatterjee, S., & Simonoff, J. S. (2013). Handbook of regression analysis. John Wiley & Sons.

Chakraborty, P., Das, S. and Nandi, A.K. (2019), "Conducting gels: a chronicle of technological advances", Progress in Polymer Science, Vol. 88 No. 1, pp. 189-219.

Clarke, T. B., Murphy, J., & Adler, J. (2016). Celebrity chef adoption and implementation of social media, particularly pinterest: A diffusion of innovations approach. *International Journal of Hospitality Management*, 57, 84-92.

Collis, J., and Hussey, R. (2009). Business Research: A Practical Guide for Undergraduate and Postgraduate Students. Basingstoke: Palgrave Macmillan.

Collis, J., & Hussey, R. (2014). Business research a practical guide for undergraduate & postgraduate students / (Fourth edition.). Palgrave Macmillan.

Conduit, J., & Mavondo, F. T. (2001). How critical is internal customer orientation to market orientation?. *Journal of business research*, 51(1), 11-24.

Cortina, J. (1993). What is coefficient alpha? An examination of theory and methods. Journal of Applied Psychology, 78 (1),98-104.

Creswell, J. W. (2014). Research design: International student edition.

Creswell, J, W. (2016). Research Design.: Qualitative, Quantitative, Mixed Methods Approaches.

Crotty, M. (1998). The foundations of social research: meaning and perspective in the research process. London; Sage Publications.

Das, P., Verburg, R., Verbraeck, A., & Bonebakker, L. (2018). Barriers to innovation within large financial services firms. *European Journal of Innovation Management*, 21(1), 96–112. https://doi.org/10.1108/EJIM-03-2017-0028.

Damanpour, F. (1991). Organizational innovation: A meta-analysis of effects of determinants and moderators. *Academy of management journal*, 34(3), 555-590.

Damanpour, F., Walker, R. M., & Avellaneda, C. N. (2009). Combinative effects of innovation types and organizational performance: A longitudinal study of service organizations. *Journal of management studies*, 46(4), 650-675.

Damanpour, F., Sanchez-Henriquez, F., & Chiu, H. (2018). Internal and External Sources and the Adoption of Innovations in Organizations. *British Journal of Management,* 29(4), 712–730. https://doi.org/10.1111/1467-8551.12296.

Dada Ab Rouf Bhat & Vivek Sharma (2022) Enabling service innovation and firm performance: the role of co-creation and technological innovation in the hospitality industry, Technology Analysis & Strategic Management, 34:7, 774-786, DOI: 10.1080/09537325.2021.1919614.

Day. (1994). The Capabilities of Market-Driven Organizations. *Journal of Marketing*, 58(4), 37–. https://doi.org/10.2307/1251915.

Dahleez, K. A., & Abdelfattah, F. A. (2021). Transformational leadership and organizational performance of Omani SMEs: the role of market orientation. *International Journal of Productivity and Performance Management*.

Daoud, J. I. (2017). Multicollinearity and Regression Analysis. Journal of Physics. Conference Series, 949(1).

Deshpandé, R., & Farley, J. U. (1998). Measuring market orientation: generalization and synthesis. *Journal of market-focused management*, 2(3), 213-232.

De Toni, D., Reche, R. A., & Milan, G. S. (2022). Effects of market orientation, innovation strategies and value-based pricing on market performance. *International Journal of Productivity and Performance Management*, 71(8), 3556-3580.

Denscombe, M. (2017). The good research guide: for small-scale social research projects (Sixth edition.). London: Open University Press.

Dixon, N. M. (1992). Organizational learning: A review of the literature with implications for HRD professionals. Human Resource Development Quarterly, 3(1), 29-49.

Diamantopoulos, A., & Hart, S. (1993). Linking market orientation and company performance: preliminary evidence on Kohli and Jaworski's framework. Journal of strategic marketing, 1(2), 93-121.

Divisekera, S., & Nguyen, V. K. (2018). Determinants of innovation in tourism evidence from Australia. Tourism Management, 67, 157-167.

D'souza, C., Nanere, M., Marimuthu, M., Arwani, M., & Nguyen, N. (2021). Market orientation, performance and the mediating role of innovation in Indonesian SMEs. *Asia Pacific Journal of Marketing and Logistics*.

Do Hyung Lee, Alisher Tohirovich Dedahanov & Jaehoon Rhee (2015) Moderating role of external networks and mediating effect of innovation performance on the relationship between technology orientation and firm performance, *Asian Journal of Technology Innovation*, 23:3, 321-334, DOI: 10.1080/19761597.2015.1120498.

Donaldson, L. (2006). The contingency theory of organizational design: challenges and opportunities. Organization design, 19-40.

Drazin, R. and Van de Ven, A.H. (1985). Alternative forms of fit in contingency theory. Administrative Science Quarterly, 30 (4), 514-539.

Dukeov, I., Bergman, J. P., Heilmann, P., & Nasledov, A. (2020). Impact of a firm's commitment to learning and open-mindedness on its organizational innovation among Russian manufacturing firms. *Baltic Journal of Management*.

Durst, S., Mention, A. L., & Poutanen, P. (2015). Service innovation and its impact: What do we know about?. Investigaciones europeas de dirección y economía de la empresa, 21(2), 65-72.

Durmusoglu, S., Nayir, D., Chaudhuri, M., Chen, J., Joens, I., & Scheuer, S. (2018). Barriers to firm service innovativeness in emerging economies. *Journal of Services Marketing*., 32(7), 925–944. https://doi.org/10.1108%2fJSM-11-2016-0411.

Easterby-Smith, M., Thorpe, R., & Jackson, P. (2008). Management research (3rd ed.). London: Sage Publications.

Engelen, A., Gupta, V., Strenger, L., & Brettel, M. (2015). Entrepreneurial Orientation, Firm Performance, and the Moderating Role of Transformational Leadership Behaviors. *Journal of Management*, 41(4), 1069–1097. https://doi.org/10.1177/0149206312455244.

Fang, S., Chang, E., Ou, C., & Chou, C. (2014). Internal market orientation, market capabilities and learning orientation. *European Journal of Marketing*, 48(1/2), 170–192. https://doi.org/10.1108/EJM-06-2010-0353.

Farouk, S., Abu Elanain, H., Obeidat, S., & Al-Nahyan, M. (2016). HRM practices and organizational performance in the UAE banking sector. *International Journal of Productivity and Performance Management,* 65(6), 773–791. https://doi.org/10.1108/IJPPM-01-2016-0010.

Farbod Fakhreddin & Pantea Foroudi | (2022) The impact of market orientation on new product performance through product launch quality: A resource-based view, Cogent Business & Management, 9:1, 2108220, DOI: 10.1080/23311975.2022.2108220.

Feng, C., Ma, R., & Jiang, L. (2020). The impact of service innovation on firm performance: a meta-analysis. *Journal of Service Management*, 32(3), 289-314.

Finn, M., Walton, M., & Elliott-White, M. (2000). Tourism and leisure research methods: Data collection, analysis, and interpretation. Pearson education.

Fikri, A. R., Ratnasari, R. T., Ahmi, A., & Kirana, K. C. (2022). Market orientation and business performance: the mediating role of total quality management and service innovation among Moslem fashion macro, small and medium enterprises in Indonesia. *Journal of Islamic Accounting and Business Research.*

Field, A., & Field, A. (2013). Discovering statistics using IBM SPSS statistics : and sex and drugs and rock "n" roll (4th edition.). SAGE.

Flikkema, M., Jansen, P., & Van Der Sluis, L. (2007). Identifying Neo-Schumpeterian Innovation in Service Firms: A Conceptual Essay with a Novel Classification. *Economics of Innovation and New Technology*, 16(7), 541–558. https://doi.org/10.1080/10438590600918602.

Fornell, C. and Larcker, D. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, Vol. 18 No. 1, pp. 39-50.

Frazier, P. A., Tix, A. P., & Barron, K. E. (2004). Testing moderator and mediator effects in counseling psychology research. Journal of counseling psychology, 51(1), 115.

Frambach, R. T., Fiss, P. C., & Ingenbleek, P. T. M. (2016). How important is customer orientation for firm performance? A fuzzy set analysis of orientations, strategies, and environments. Journal of Business Research, 69(4), 1428–1436. https://doi.org/10.1016/j.jbusres.2015.10.120.

Frisch, R. (1934). Statistical confluence analysis by means of complete regression systems (Vol. 5). Oslo, Norway: University Institute for Economics.

García-Morales, V., Jiménez-Barrionuevo, M., & Gutiérrez-Gutiérrez, L. (2012). Transformational leadership influence on organizational performance through organizational learning and innovation. *Journal of Business Research*, 65(7), 1040–1050. https://doi.org/10.1016/j.jbusres.2011.03.005.

Gebauer, H., & Friedli, T. (2005). Behavioral implications of the transition process from products to services. *Journal of Business & Industrial Marketing*, 20(2), 70–78.

Gerbing, D. W., and J. C. Anderson. 1988. "An Updated Paradigm for Scale Development Incorporating Unidimensionality and Its Assessment." Journal of Marketing Research 25 (2): 186–92.

Ghasemzadeh, P., Nazari, J., Farzaneh, M., & Mehralian, G. (2019). Moderating role of innovation culture in the relationship between organizational learning and innovation performance. The Learning Organization, 26(3), 289–303. https://doi.org/10.1108/TLO-08-2018-0139.

Gong, Y., Huang, J., & Farh, J. (2009). Employee Learning Orientation, Transformational Leadership, and Employee Creativity: The Mediating Role of Employee Creative Self-Efficacy. *The Academy of Management Journal*, 52(4), 765–778. https://doi.org/10.5465/AMJ.2009.43670890.

Gong, Y., & Janssen, M. (2015). Demystifying the benefits and risks of Lean service innovation: a banking case study. *Journal of Systems and Information Technology*.

Golberg, M. A., & Cho, H. A. (2004). Introduction to regression analysis. WIT press.

Gray, D. E. (2013). Doing research in the real world. Sage.

Grawe, S. J., Chen, H., & Daugherty, P. J. (2009). The relationship between strategic orientation, service innovation, and performance. *International Journal of Physical Distribution & Logistics Management.*

Grafton, J., Lillis, A.M. and Widener, S.K. (2010). The role of performance measurement and evaluation in building organisational capabilities and performance. Accounting, Organizations and Society, 35 (7), 689–706.

Gray, E. (2005). Doing research in the real world. London: Sage Ltd.

Gunday, G., Ulusoy, G., Kilic, K., & Alpkan, L. (2011). Effects of innovation types on firm performance. *International Journal of Production Economics,* 133(2), 662–676. https://doi.org/10.1016/j.ijpe.2011.05.014.

Gupta, A.K., Smith, K.G. and Shalley, C.E. (2006), "The interplay between exploration and exploitation", *Academy of Management Journal*, Vol. 49 No. 4, pp. 693-706.

Harrison, R. L., & Reilly, T. M. (2011). Mixed methods designs in marketing research. *Qualitative market research: an international journal*, 14(1), 7-26.

Halac, D. S. (2015). Multidimensional construct of technology orientation. Procedia-Social and Behavioral Sciences, 195, 1057-1065.

Hamzah, M. I., Othman, A. K., & Hassan, F. (2020). Mediating effects of individual market orientation on the link between learning orientation and job performance. *Journal of Business & Industrial Marketing*, 35(4), 655-668.

Hakala, H., & Kohtamäki, M. (2011). Configurations of entrepreneurial- customer- and technology orientation. *International Journal of Entrepreneurial Behaviour & Research*, 17(1), 64–81. https://doi.org/10.1108/13552551111107516.

Hair Jr., J. F. et al. (1998). Multivariate Data Analysis with Readings. Englewood Cliffs, NJ: Prentice-Hall.

Hair, J. (2010). Multivariate data analysis : a global perspective (7th ed.). Pearson Prentice Hall.

Hakala, H. (2011). Strategic Orientations in Management Literature: Three Approaches to Understanding the Interaction between Market, Technology, Entrepreneurial and Learning Orientations. *International Journal of Management Reviews*, 13(2), 199–217. https://doi.org/10.1111/j.1468-2370.2010.00292.x.

Hardcopf, R., Liu, G. J., & Shah, R. (2021). Lean production and operational performance: The influence of organizational culture. *International Journal of Production Economics*, 235, 108060.

Hameed, W. U., Nisar, Q. A., & Wu, H. C. (2021). Relationships between external knowledge, internal innovation, firms' open innovation performance, service innovation and business performance in the Pakistani hotel industry. *International Journal of Hospitality Management*, 92, 102745.

Hassan, M., & Aliyu, S. (2018). A contemporary survey of Islamic banking literature. *Journal of Financial Stability*, 34, 12–43. https://doi.org/10.1016/j.jfs.2017.11.006.

Hameed, Z., Naeem, R. M., Hassan, M., Naeem, M., Nazim, M., & Maqbool, A. (2022). How GHRM is related to green creativity? A moderated mediation model of green transformational leadership and green perceived organizational support. *International Journal of Manpower*, 43(3), 595-613.

Han, J. K., Kim, N., & Srivastava, R. K. (1998). Market orientation and organizational performance: is innovation a missing link?. *Journal of marketing*, 62(4), 30-45.

Hernaus, T., Bach, M. P., & Vukšić, V. B. (2012). Influence of strategic approach to BPM on financial and non-financial performance. *Baltic Journal of Management*.

Hoyle, R. H. (1995) "The structural equation modeling approach: Basic concepts and fundamental issues", in Hoyle, R.H. (ed.) Structural equation modeling: concepts, issues,and applications. Thousand Oaks, CA: SagePublications, pp.]-15.

Hoyle, R. H. and Panter, A. T. (1995) "Writing about structural equation models", in Hoyle, R.H. (ed.) Structural equation modeling: Concepts, issues, and applications. ThousandOaks, Claifornia: SagePublications, pp.158-176.

Hoai, T. T., Hung, B. Q., & Nguyen, N. P. (2022). The impact of internal control systems on the intensity of innovation and organizational performance of public sector organizations in Vietnam: the moderating role of transformational leadership. Heliyon, 8(2), e08954.

Ho, K. L. P., Nguyen, C. N., Adhikari, R., Miles, M. P., & Bonney, L. (2018). Exploring market orientation, innovation, and financial performance in agricultural value chains in emerging economies. *Journal of Innovation & Knowledge*, 3(3), 154-163.

Howell, K. E. (2015). Empiricism, positivism and post-positivism. An introduction to the philosophy of methodology.

Hurley, R. (1998). Innovation, Market Orientation, and Organizational Learning: An Integration and Empirical Examination. *Journal of Marketing,* 62(3), 42–54. https://doi.org/10.2307/1251742.

Hurley, R.F. and Hult, G.T.M. (1998) Innovation, market orientation, and organizational learning: an integration and empirical examination. *Journal of Marketing,* 62, 2, 42–54.

Huhtala, J. P., Sihvonen, A., Frösén, J., Jaakkola, M., & Tikkanen, H. (2014). Market orientation, innovation capability and business performance: Insights from the global financial crisis. *Baltic Journal of Management*, 9(2), 134-152.

Huang, H.L. (2014), "Performance effects of aligning service innovation and the strategic use of information technology", Service Business, Vol. 8 No. 2, pp. 171-195.

Imran, M., Ilyas, M., & Aslam, U. (2016). Organizational learning through transformational leadership. *The Learning Organization*, 23(4), 232–248. https://doi.org/10.1108/TLO-09-2015-0053.

Inbadas, H. (2016). History, culture and traditions: The silent spaces in the study of spirituality at the end of life. Religions, 7(5), 53.

Isik, I., Omran, M., & Hassan, M. K. (2017). How efficient are the commercial, investment and Islamic bank managers in Jordan?. In Handbook of empirical research on Islam and economic life. Edward Elgar Publishing.

Jaiswal, N., & Dhar, R. (2015). Transformational leadership, innovation climate, creative self-efficacy and employee creativity: A multilevel study. *International Journal of Hospitality Management*, 51, 30–41. https://doi.org/10.1016/j.ijhm.2015.07.002.

Jaworski, B., & Kohli, A. (1993). Market Orientation: Antecedents and Consequences. *Journal of Marketing*, 57(3), 53–70. https://doi.org/10.2307/1251854.

Jansen, J., George, G., Van Den Bosch, F., & Volberda, H. (2008). Senior Team Attributes and Organizational Ambidexterity: The Moderating Role of Transformational Leadership. *Journal of Management Studies*, 45(5), 982–1007. https://doi.org/10.1111/j.1467-6486.2008.00775.x.

Jayaram, J., Ahire, S. L., & Dreyfus, P. (2010). Contingency relationships of firm size, TQM duration, unionization, and industry context on TQM implementation—A focus on total effects. *Journal of operations Management*, 28(4), 345-356.

James M. Crick (2021) The dimensionality of the market orientation construct, *Journal of Strategic Marketing*, 29:4, 281-300, DOI: 10.1080/0965254X.2019.1677747.

Jessica, S. (2002). From intangibility to tangibility on service quality perceptions: a comparison study between consumers and service providers in four service industries. *Managing Service Quality*, 12(5), 292-302.

Jiménez-Jimenez, D., Sanz Valle, R., & Hernandez-Espallardo, M. (2008). Fostering innovation. *European Journal of Innovation Management,* 11(3), 389–412. https://doi.org/10.1108/14601060810889026.

Jiménez-Jiménez, D., & Sanz-Valle, R. (2011). Innovation, organizational learning, and performance. *Journal of Business Research*, 64(4), 408–417. https://doi.org/10.1016/j.jbusres.2010.09.010.

Johnson, P., & Duberley, J. (2000). Understanding management research an introduction to epistemology. London: SAGE.

Johnson, R., & Onwuegbuzie, A. (2004). Mixed Methods Research: A Research Paradigm Whose Time Has Come. *Educational Researcher,* 33(7), 14–26. https://doi.org/10.3102/0013189X033007014.

Jo, H. (2022). Success Factor of Smart Factory: Moderating Role of Commitment to Learning. Procedia Computer Science, 204, 736-743.

Jones, D. G. B., & Shaw, E. H. (2018). Avoiding academic irrelevance in the marketing discipline: The promise of the history of marketing thought. *Journal of Marketing Management*, 34(1–2), 52–62.

Jöreskog, K. G. (1973) "General methods for estimating a liner structure equation system", in Goldberger, A.S. and Duncan, O.D. (eds) Structural equation models in social sciences.New York: SeminarPress.

Joshi, A., Kale, S., Chandel, S., & Pal, D. (2015). Likert Scale: Explored and Explained. *British Journal of Applied Science & Technology,* 7(4), 396–403. https://doi.org/10.9734/BJAST/2015/14975.

Joensuu-Salo, S., Kangas, E., & Mäkipelkola, J. (2021). Service Innovation Capability in Social and Health Care SMEs: The Impact of Market Orientation and Technology Orientation. *Journal of Enterprising Culture*, 29(03), 183-206.

Johnston, R., Jones, K., & Manley, D. (2018). Confounding and collinearity in regression analysis: a cautionary tale and an alternative procedure, illustrated by studies of British voting behaviour. Quality & Quantity, 52(4), 1957–1976.

Jones, P., Patz, R., Thomas, B., & McCarthy, S. (2014). Micro-Sized Enterprises, Innovation and Universities: A Welsh Perspective. Industry and Higher Education, 28(1), 39–49. https://doi.org/10.5367/ihe.2014.0192.

Jyoti, J., & Dev, M. (2015). The impact of transformational leadership on employee creativity: the role of learning orientation. *Journal of Asia Business Studies*, 9(1), 78-98.

Kim, H., & Qu, H. (2020). Effects of employees' social exchange and the mediating role of customer orientation in the restaurant industry. *International Journal of Hospitality Management*, 89, 102577.

Kirca, A. H., Jayachandran, S., & Bearden, W. O. (2005). Market orientation: A meta-analytic review and assessment of its antecedents and impact on performance. *Journal of marketing*, 69(2), 24-41.

Kindström, D., Kowalkowski, C., & Sandberg, E., . 2013. Enabling service innovation: A dynamic capabilities approach. *Journal of Business Research*, 66: 1063-1073.

Kolbe, D., Frasquet, M., & Calderon, H. (2021). The role of market orientation and innovation capability in export performance of small-and medium-sized enterprises: a Latin American perspective. Multinational Business Review.

Kohli, A. K., & Jaworski, B. J. (1990). Market orientation: the construct, research propositions, and managerial implications. *Journal of marketing*, 54(2), 1-18.

Kohli, A. K., Jaworski, B. J., & Kumar, A. (1993). MARKOR: a measure of market orientation. *Journal of Marketing research*, 30(4), 467-477.

Kocak, A., Carsrud, A., & Oflazoglu, S. (2017). Market, entrepreneurial, and technology orientations: impact on innovation and firm performance. *Management Decision*, 55(2), 248–270. https://doi.org/10.1108/MD-04-2015-0146.

Kock, N. (2015), "Common method bias in PLS-SEM: a full collinearity assessment approach", *International Journal of e-Collaboration (IJEC),* Vol. 11 No. 4, pp. 1-10.

Koburtay, T., Syed, J., & Haloub, R. (2020). Implications of religion, culture, and legislation for gender equality at work: Qualitative insights from Jordan. *Journal of Business Ethics*, 164, 421-436.

Knezović, E., & Drkić, A. (2021). Innovative work behavior in SMEs: the role of transformational leadership. Employee Relations: *The International Journal*, 43(2), 398-415.

Knezović, E., & Drkić, A. (2021). Innovative work behavior in SMEs: the role of transformational leadership. Employee Relations: *The International Journal*, 43(2), 398-415.

Kumar, V., Jabarzadeh, Y., Jeihouni, P., & Garza-Reyes, J. A. (2020). Learning orientation and innovation performance: the mediating role of operations strategy and supply chain integration. *Supply Chain Management: An International Journal*.

Lee, T., & Tsai, H. (2005). The effects of business operation mode on market orientation, learning orientation and innovativeness. *Industrial Management & Data Systems*, 105(3), 325–348. https://doi.org/10.1108/02635570510590147.

Lee, D. H., Dedahanov, A. T., & Rhee, J. (2015). Moderating role of external networks and mediating effect of innovation performance on the relationship between technology orientation and firm performance. *Asian Journal of Technology Innovation*, 23(3), 321-334.

Leng, Z., Liu, Z., Tan, M., & Pang, J. (2015). Speed leaders and quality champions: analyzing the effect of market orientation and technology orientation alignment on new product innovation. Management Decision.

Lim, S., Preis, M., Lee, C., Mangematin, V., & Kim, M. (2020). The influence of open innovation activities on non-financial performance in the cultural tourism content industry. Current Issues in Tourism, 1–5. https://doi.org/10.1080/13683500.2020.1754356.

Lin, Y., Luo, J., Ieromonachou, P., Rong, K., & Huang, L. (2019). Strategic orientation of servitization in manufacturing firms and its impacts on firm performance. Industrial Management & Data Systems, 119(2), 292-316.

Liao, S., Chen, C., Hu, D., Chung, Y., & Liu, C. (2017). Assessing the influence of leadership style, organizational learning and organizational innovation. *Leadership & Organization Development Journal*, 38(5), 590–609. https://doi.org/10.1108/LODJ-11-2015-0261.

Lichtenthaler, U. (2020). Agile innovation: The complementarity of design thinking and lean startup. International Journal of Service Science, Management, Engineering, and Technology, 11(1), 157–167.

Lin, C., Peng, C., & Kao, D. (2008). The innovativeness effect of market orientation and learning orientation on business performance. *International Journal of Manpower*, 29(8), 752–772. https://doi.org/10.1108/01437720810919332.

Li-Sheng Chu, Wen-Hong Chiu, & Hui-Ru Chi. (2015). Exploring market orientation and service innovation strategy of manufacturing industry: A case study of PCC in Taiwan. 2015 12th International Conference on Service Systems and Service Management (ICSSSM), 1–6. https://doi.org/10.1109/ICSSSM.2015.7170228.

Liu, C. H. S., & Lee, T. (2019). The multilevel effects of transformational leadership on entrepreneurial orientation and service innovation. *International Journal of Hospitality Management*, 82, 278-286.

Liu, S., Luo, X., and Shi, Y-Z. (2002). "Integrating customer orientation, corporate entrepreneurship, and learning orientation in organizations-in-transition: an empirical study." *International Journal of Research in Marketing* 19(X): 367–382.

Liang, K. Y., & Zeger, S. L. (1993). Regression analysis for correlated data. Annual review of public health, 14(1), 43-68.

Luft, J. and Shields, M. (2003). Mapping management accounting graphics and guidelines for theory-consistent empirical research. Accounting, Organizations and Society, 28 (2- 3), 169–249.

Marsh, H. W., Balla, J. R. and McDonald, R. P. (1988) "Goodness-of-fit indexes in confirmatory factor analysis: the effect of sample size", Psychological Bulletin, 103(3), pp.391-410.

Mahmoud, M., Blankson, C., Owusu-Frimpong, N., Nwankwo, S., & Trang, T. (2016). Market orientation, learning orientation and business performance. *International Journal of Bank* Marketing, 34(5), 623–648. https://doi.org/10.1108/IJBM-04-2015-0057.

Masa'deh, R., Al-Henzab, J., Tarhini, A., & Obeidat, B. (2018). The associations among market orientation, technology orientation, entrepreneurial orientation and organizational performance. *Benchmarking: An International Journal*, 25(8), 3117–3142. https://doi.org/10.1108/BIJ-02-2017-0024.

Manohar, S., Mittal, A., & Marwah, S. (2019). Service innovation, corporate reputation and word-of-mouth in the banking sector. *Benchmarking: An International Journal*.

Mavondo, F., Chimhanzi, J., & Stewart, J. (2005). Learning orientation and market orientation. *European Journal of Marketing,* 39(11/12), 1235–1263. https://doi.org/10.1108/03090560510623244.

Mandal, S., & Saravanan, D. (2019). Exploring the Influence of Strategic Orientations on Tourism Supply Chain Agility and Resilience: An Empirical Investigation. *Tourism Planning & Development*, 16(6), 612–636. https://doi.org/10.1080/21568316.2018.1561506.

Mathafena, R. B., & Msimango-Galawe, J. (2022). Entrepreneurial orientation, market orientation and opportunity exploitation in driving business performance: moderating effect of interfunctional coordination. *Journal of Entrepreneurship in Emerging Economies.*

Mandal, S. (2019). Exploring the influence of IT capabilities on agility and resilience in tourism: Moderating role of technology orientation. *Journal of Hospitality and Tourism Technology*.

McDermott, C. M., & Prajogo, D. I. (2012). Service innovation and performance in SMEs. International Journal of Operations & Production Management.

Menguc, & Auh, S. (2005). A Test of Strategic Orientation Formation versus Strategic Orientation Implementation: The Influence of Tmt Functional Diversity and Inter-Functional Coordination. Journal of Marketing Theory and Practice, 13(2), 4–19. https://doi.org/10.1080/10696679.2005.11658540.

Menguc, B., Auh, S., & Shih, E. (2007). Transformational leadership and market orientation: Implications for the implementation of competitive strategies and business unit performance. *Journal of business research*, 60(4), 314-321.

Megheirkouni, M. (2017). Leadership styles and organizational learning in UK for-profit and non-profit sports organizations. *International Journal of Organizational Analysis*.

Miller, D. (1981). Toward a new contingency approach: The search for organisational gestals. *Journal of Management Studies*, 18(1), 1–26.

Milbratz, T. C., Gomes, G., & Carmona, L. J. D. M. (2020). Influence of learning and service innovation on performance: Evidences in Brazilian architectural KIBS. Innovation & Management Review, 17(2), 157-175.

Mittal, & Dhar, R. L. (2015). Transformational leadership and employee creativity: Mediating role of creative self-efficacy and moderating role of knowledge sharing. Management Decision, 53(5), 894–910. https://doi.org/10.1108/MD-07-2014-0464.

Montgomery, D. C., Peck, E. A., & Vining, G. G. (2021). Introduction to linear regression analysis. John Wiley & Sons.

Mubarak, N., Khan, J., Yasmin, R., & Osmadi, A. (2021). The impact of a proactive personality on innovative work behavior: the role of work engagement and transformational leadership. Leadership & organization development journal, 42(7), 989-1003.

Mukhles M. Al-Ababneh. (2020). Linking Ontology, Epistemology And Research Methodology. Science & Philosophy. 8(1), 75–91.

Mubarak, K. M. (2019). Impact of customer & competitor orientation and inter-functional coordination on SME's performance.

Narver, J., & Slater, S. (1990). The Effect of a Market Orientation on Business Profitability. *Journal of Marketing*, 54(4), 20–35. https://doi.org/10.2307/1251757.

Narver, J. C., Slater, S. F., & Tietje, B. (1998). Creating a market orientation. *Journal of market-focused management*, 2(3), 241-255.

Newman, A., Prajogo, D., & Atherton, A. (2016). The influence of market orientation on innovation strategies. *Journal of service theory and practice.*

Nomran, N. M., & Haron, R. (2020). A systematic literature review on Sharī'ah governance mechanism and firm performance in Islamic banking. Islamic Economic Studies.

Nusair, N., Ababneh, R., & Kyung Bae, Y. (2012). The impact of transformational leadership style on innovation as perceived by public employees in Jordan. *International Journal of Commerce and Management,* 22(3), 182–201. https://doi.org/10.1108/10569211211260283.

Nwankwo, S. (1995). Developing a customer orientation. *Journal of consumer marketing.*

O'Brien, R. M. (2007). A Caution Regarding Rules of Thumb for Variance Inflation Factors. Quality & Quantity, 41(5), 673–690.

O'brien, R. M. (2007). A Caution Regarding Rules of Thumb for Variance Inflation Factors. Quality & Quantity, 41(5), 673–690.

O'Cass, A., & Ngo, L. V., (2011). Achieving customer satisfaction in services firms via branding capability Journal of Services Marketing, 25(7), 489 - 496.

Odumeru, J. A., & Ogbonna, I. G. (2013). Transformational vs. transactional leadership theories: Evidence in literature. *International review of management and business research*, 2(2), 355.

Oke, A. (2007), "Innovation types and innovation management practices in service companies", *International Journal of Operations and Production Management*, Vol. 27 No. 6, pp. 564-587.

O'Leary, D. (2010). Enterprise ontologies: Review and an activity theory approach. *International Journal of Accounting Information Systems Volume* 11, Issue 4, Pages 336-352.

Olson, D., & Zoubi, T. (2017). Convergence in bank performance for commercial and Islamic banks during and after the Global Financial Crisis. *Quarterly Review of Economics and Finance*, 65, 71–87. https://doi.org/10.1016/j.qref.2016.06.013.

Oliveira, P., & von Hippel, E. (2011). Users as service innovators: The case of banking services. Research policy, 40(6), 806-818.

Ordanini, A., & Parasuraman, A. (2011). Service Innovation Viewed Through a Service-Dominant Logic Lens: A Conceptual Framework and Empirical Analysis. *Journal of Service Research*, 14(1), 3–23. https://doi.org/10.1177/1094670510385332.

Otley, D. (2016). The contingency theory of management accounting and control: 1980–2014. Management accounting research, 31, 45-62.

Pattanayak, D., Koilakuntla, M., & Punyatoya, P. (2017). Investigating the influence of TQM, service quality and market orientation on customer satisfaction and loyalty in the Indian banking sector. *International Journal of Quality & Reliability Management*, 34(3), 362–377. https://doi.org/10.1108/IJQRM-04-2015-005.

Pawirosumarto, S., Sarjana, P. K., & Gunawan, R. (2017). The effect of work environment, leadership style, and organizational culture towards job satisfaction and its implication towards employee performance in Parador Hotels and Resorts, Indonesia. *International journal of law and management.*

Paul, R. K. (2006). Multicollinearity: Causes, effects and remedies. IASRI, New Delhi, 1(1), 58-65.

Pattnaik, J. R., & Patra, A. (2018). Impact of Information Technology in Indian Banking Industry: A Study on South Odisha. *IPE Journal of Management*, 8(2), 78-90.

Picard, C. A. (2000) The Many Meanings of Mediation: A Sociological Study of Mediation in Canada. Unpublished doctoral dissertation, Department of Sociology, Carleton University, Ottawa.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of applied psychology*, 88(5), 879.

Prifti, R., & Alimehmeti, G. (2017). Market orientation, innovation, and firm performance—an analysis of Albanian firms. *Journal of Innovation and Entrepreneurship*, 6(1), 1-19.

Prasad, & Junni, P. (2016). CEO transformational and transactional leadership and organizational innovation: The moderating role of environmental dynamism. Management Decision, 54(7), 1542–1568. https://doi.org/10.1108/MD-11-2014-0651.

Prasad, B., & Junni, P. (2016). CEO transformational and transactional leadership and organizational innovation. *Management Decision,* 54(7), 1542–1568. https://doi.org/10.1108/MD-11-2014-0651.

Raj, R., & Srivastava, K. (2016). Mediating role of organizational learning on the relationship between market orientation and innovativeness. *The Learning Organization*, 23(5), 370–384. https://doi.org/10.1108/TLO-09-2013-0051.

Ratten, V. (2016). Service innovations in cloud computing: A study of top management leadership, absorptive capacity, government support, and learning orientation. *Journal of the Knowledge Economy,* 7(4), 935-946.

Racela, O. C., & Thoumrungroje, A. (2020). When do customer orientation and innovation capabilities matter? An investigation of contextual impacts. *Asia Pacific Journal of Marketing and Logistics*, 32(2), 445-472.

Ramírez-Solis, E. R., Llonch-Andreu, J., & Malpica-Romero, A. D. (2022). How beneficial are relational capital and technology orientation for innovation? Evidence from Mexican SMEs. *International Journal of Innovation Studies,* 6(1), 1-10.

Ramírez-Solis, Llonch-Andreu, J., & Malpica-Romero, A. D. (2022). Relational capital and strategic orientations as antecedents of innovation: evidence from Mexican SMEs. *Journal of Innovation and Entrepreneurship*, 11(1), 1–19. https://doi.org/10.1186/s13731-022-00235-2.

Reuveni, Y., & Vashdi, D. (2015). Innovation in multidisciplinary teams: The moderating role of transformational leadership in the relationship between professional heterogeneity and shared mental models. *European Journal of Work and Organizational Psychology*, 24(5), 678–692. https://doi.org/10.1080/1359432X.2014.1001377.

Richardson, H. A., Simmering, M. J., & Sturman, M. C. (2009). A tale of three perspectives: Examining post hoc statistical techniques for detection and correction of common method variance. Organizational Research Methods, 12(4), 762–800.

Robbins, S.P. and Coulter, M. (1996), Management, Prentice Hall, Englewood Cliffs, NJ.

Robson, C. (2002). Real World Research 2nd edition Blackwell Oxford.

Rowland, C. A., Hall, R. D., & Altarawneh, I. (2017). Training and development: challenges of strategy and managing performance in Jordanian banking. *EuroMed Journal of Business,* 12(1), 36-51.

Ryu, K. P., Piao, S. Z., & Nami, D. (2012). A Comparative study between the Islamic and conventional banking systems and its implications. *Scholarly Journal of Business Administration*, 2(5), 48-54.

Sari, I. P., & Thamrin, T. (2022). Effect of market orientation, entrepreneurial orientation and technology orientation on business performance. Marketing Management Studies, 2(2), 117-126.

Salmerón, R., García, C., & García, J. (2020). Overcoming the inconsistences of the variance inflation factor: a redefined VIF and a test to detect statistical troubling multicollinearity. arXiv e-prints, arXiv-2005.

Santos, J. (2002). From intangibility to tangibility on service quality perceptions: a comparison study between consumers and service providers in four service industries. *Managing Service Quality: An International Journal*, 12(5), 292-302.

Sahi, G., Gupta, M., & Lonial, S. (2018). Relating strategic market orientation and market performance: role of customer value types. *Journal of Strategic Marketing*, 26(4), 318–338. https://doi.org/10.1080/0965254X.2016.1240215.

Sattayaraksa, T., & Boon-Itt, S. (2016). CEO transformational leadership and the new product development process. *Leadership & Organization Development Journal*, 37(6), 730–749. https://doi.org/10.1108/LODJ-10-2014-0197.

Saunders, M., Lewis, P., & Thornhill, A. (2019). Research methods for Business Students (8th ed.) Edinburgh: Pearson Education Limited.

Saunders, M., Lewis, P., & Thornhill, A. (2016). Research methods for Business Students (7th ed.) Edinburgh: Pearson Education Limited.

Salmerón Gómez, R., Rodríguez Sánchez, A., García, C. G., and García Pérez, J. (2020). The VIF and MSE in Raise Regression. Mathematics (Basel), 8(4), 325-352.

Salunke, S., & McColl-Kennedy, J. (2013). Competing through service innovation. *Journal of Business Research*, 66, 1085-1097.

Salunke, S., Weerawardena, J., & McColl-Kennedy, J.R. 2019. The central role of knowledge integration capability in service innovationbased competitive strategy. Industrial Marketing Management, 76: 144-156.

Schulze, A., Townsend, J. D., & Talay, M. B. (2022). Completing the market orientation matrix: The impact of proactive competitor orientation on innovation and firm performance. Industrial Marketing Management, 103, 198-214.

Schumpeter, J. A. (1934). The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle. University of Illinois at Urbana-Champaign's Academy for Entrepreneurial Leadership Historical Research Reference in Entrepreneurship.

Sendaro, A. A., & Baharun, R. (2019). Mediating Role of Individual Market Orientation in Emotional Intelligence and Job Performance Relationship for Banking Industry. *Global Business Review*, 0972150919850406.

Serafim, G. H., & Cristóvão Veríssimo, J. M. (2021). The relationship between strategic orientation, service innovation, and performance in hotels in Angola. Sustainability, 13(11), 6256.

Sexty, R. E., Hamadneh, J., Rösner, S., Strowitzki, T., Ditzen, B., Toth, B., & Wischmann, T. (2016). Cross-cultural comparison of fertility specific quality of life in German, Hungarian and Jordanian couples attending a fertility center. *Health and quality of life outcomes*, 14, 1-8.

Shahzad, I., Farrukh, M., Ahmed, N., Lin, L., & Kanwal, N. (2018). The role of transformational leadership style, organizational structure and job characteristics in developing psychological empowerment among banking professionals. *Journal of Chinese Human Resource Management,* 9(2), 107–122. https://doi.org/10.1108/JCHRM-01-2018-0002.

Sloma, R. S. (1999). How to measure managerial performance. Beard Books.

Slater, S., & Narver, J. (1995). Market Orientation and the Learning Organization. *Journal of Marketing,* 59(3), 63–74. https://doi.org/10.2307/1252120.

Snyder, H., Witell, L., Gustafsson, A., Fombelle, P., & Kristensson, P. (2016). Identifying categories of service innovation: A review and synthesis of the literature. *Journal of Business Research*, 69(7), 2401–2408. https://doi.org/10.1016/j.jbusres.2016.01.009.

Sørensen, H. E. (2009). Why competitors matter for market orientation. *European journal of marketing.*

Spearman, C. (1904) "General intelligence objectively determined and measured", American Journal of Psychology, 15, pp. 201-293.

Spector, P. E. (2006). Method Variance in Organizational Research: Truth or Urban Legend? Organizational Research Methods, 9(2), 221–232. https://doi.org/10.1177/1094428105284955.

Stevens, J.P. (2002), Applied Multivariate Statistics for the Social Sciences, Lawrence Erlbaum Associates Publishers, London.

Statista, (2022) Jordan: Distribution of gross domestic products (GDP) across economic sectors from 2011 to 2021). https://www.statista.com/statistics/385505/jordan-gdp-distribution-across-economic-sectors/#:~:text=In%202021%2C%20agriculture%20contributed%20around,percent%20from%20the%20services%20sector.

Suleiman Awwad, M., & Mohammad Agti, D. (2011). The impact of internal marketing on commercial banks' market orientation. *International Journal of Bank Marketing*, 29(4), 308–332. https://doi.org/10.1108/02652321111145943.

Suifan, T., Abdallah, A., & Al Janini, M. (2018). The impact of transformational leadership on employees' creativity. *Management Research Review*, 41(1), 113–132. https://doi.org/10.1108/MRR-02-2017-0032.

Siangchokyoo, N., Klinger, R. L., & Campion, E. D. (2020). Follower transformation as the linchpin of transformational leadership theory: A systematic review and future research agenda. The Leadership Quarterly, 31(1), 101341.

Siddique, C. (2018). Learning organization and firm performance. *International Journal of Emerging Markets,* 13(4), 689–708. https://doi.org/10.1108/IJoEM-07-2016-0184.

Sinkula, J. M., Baker, W. E., & Noordewier, T. (1997). A framework for market-based organizational learning: Linking values, knowledge, and behavior. *Journal of the academy of Marketing Science*, 25(4), 305.

Tashakkori, A., and Teddlie, C. (1998). Mixed methodology: Combining qualitative and quantitative approaches Sage Publications, Inc. London.

Taghizadeh, S. K., Rahman, S. A., Hossain, M. M., & Haque, M. M. (2019). Characteristics of organizational culture in stimulating service innovation and performance. *Marketing Intelligence & Planning*.

Tan, B. (2019). In search of the link between organizational culture and performance. *Leadership & Organization Development Journal,* 40(3), 356–368. https://doi.org/10.1108/LODJ-06-2018-0238.

Tajeddini, K., Martin, E., & Altinay, L. (2020). The importance of human-related factors on service innovation and performance. *International Journal of Hospitality Management*, 85, 102431.

Tajeddini, K., Altinay, L., & Ratten, V. (2017). Service innovativeness and the structuring of organizations: The moderating roles of learning orientation and inter-functional coordination. *International Journal of Hospitality Management,* 65, 100–114. https://doi.org/10.1016/j.ijhm.2017.06.010.

Tajeddini, K. (2014). The Effect of Organisational Structure and Hoteliers' Risk Proclivity on Innovativeness. *Asia Pacific Journal of Management Research and Innovation*, 10(1), 1–12. https://doi.org/10.1177/2319510X14529487.

Tajeddini, K. (2010). Effect of customer orientation and entrepreneurial orientation on innovativeness: Evidence from the hotel industry in Switzerland. Tourism management, 31(2), 221-231.

Tajeddini, K., Trueman, M., & Larsen, G. (2006). Examining the effect of market orientation on innovativeness. *Journal of marketing management*, 22(5-6), 529-551.

Tajeddini, K. (2009). The impact of learning orientation on NSD and hotel performance. *Education, Business and Society: Contemporary Middle Eastern Issues*, 2(4), 262–275. https://doi.org/10.1108/17537980911001099.

Tajeddini, K. (2011). Customer Orientation, Learning Orientation, and New Service Development: An Empirical Investigation of the Swiss Hotel Industry. *Journal of Hospitality & Tourism Research,* 35(4), 437–468. https://doi.org/10.1177/1096348010380599.

TAJEDDINI, Kayhan and MARTIN, Emma (2019). The importance of human-related factors on service innovation and performance. *International Journal of Hospitality Management*, 85, p. 102431.

Tayal, R., Kumar Upadhya, R., Yadav, M., Rangnekar, S., & Singh, R. (2018). The impact of transformational leadership on employees' acceptance to change. *VINE Journal of Information and Knowledge Management Systems,* 48(4), 559–578. https://doi.org/10.1108/VJIKMS-05-2018-0039.

Tacq, J. (2011). Causality in qualitative and quantitative research. Quality & Quantity, 45(2), 263–291.

Tabachnick, B., & Fidell, L. (2014). Using multivariate statistics (Sixth edition.). Pearson.

Taouab, O., & Issor, Z. (2019). Firm performance: Definition and measurement models. European Scientific Journal, 15(1), 93-106.

Tehseen, S., Ramayah, T., & Sajilan, S. (2017). Testing and controlling for common method variance: A review of available methods.

Thompson, C. G., Kim, R. S., Aloe, A. M., & Becker, B. J. (2017). Extracting the variance inflation factor and other multicollinearity diagnostics from typical regression results. Basic and Applied Social Psychology, 39(2), 81-90.

Thakur, R., & Hale, D. (2013). Service innovation: A comparative study of U.S. and Indian service firms. *Journal of Business Research,* 66(8), 1108–1123. https://doi.org/10.1016/j.jbusres.2012.03.00.

Tsai, M., & Wang, C. (2017). Linking service innovation to firm performance. *Chinese Management Studies*, 11(4), 730–750. https://doi.org/10.1108/CMS-03-2017-0045.

Tsai, K. & Yang, S. (2014). The contingent value of firm innovativeness for business performance. *International Entrepreneurship Management Journal,* 10(2), 343-366.

Tseng, S., & Lee, P. (2014). The effect of knowledge management capability and dynamic capability on organizational performance. *Journal of Enterprise Information Management*, 27(2), 158–179. https://doi.org/10.1108/JEIM-05-2012-0025.

Tseng, M., Wu, K., Chiu, A., Lim, M., & Tan, K. (2019). Reprint of: Service innovation in sustainable product-service systems: Improving performance under linguistic preferences. *International Journal of Production Economics,* 217, 159–170. https://doi.org/10.1016%2fj.ijpe.2019.09.013.

Tsou, H., Chen, J., & Liao, W. (2014). Market and technology orientations for service delivery innovation: The link of innovative competence. *Journal of Business & Industrial Marketing*, 29(6), 499–513. https://doi.org/10.1108/JBIM-09-2011-0128.

Ullah, Z., Álvarez-Otero, S., Sulaiman, M. A. B. A., Sial, M. S., Ahmad, N., Scholz, M., & Omhand, K. (2021). Achieving organizational social sustainability through electronic performance appraisal systems: The moderating influence of transformational leadership. Sustainability, 13(10), 5611.

Uzkurt, C., Kumar, R., Semih Kimzan, H., & Emino Lu, G. (2013). Role of innovation in the relationship between organizational culture and firm performance. *European Journal of Innovation Management,* 16(1), 92–117. https://doi.org/10.1108/14601061311292878.

Vatamanescu, E., Andrei, A., Nicolescu, L., P^ınzaru, F. and Zbuchea, A. (2017), "The influence of competitiveness on SMEs internationalization effectiveness. Online versus offline business networking", Information Systems Management, Vol. 34 No. 3, pp. 205-219.

Venkatraman, N. (1989). The concept of fit in strategy research: Toward verbal and statistical correspondence. Academy of Management Review, 14 (3), 423-444.

Wang, Q., Zhao, X., & Voss, C. (2016). Customer orientation and innovation: A comparative study of manufacturing and service firms. *International Journal of Production Economics*, 171(2), 221–230. https://doi.org/10.1016/j.ijpe.2015.08.029.

Wang, K., Huo, B., & Tian, M. (2021). How to protect specific investments from opportunism: A moderated mediation model of customer integration and transformational leadership. *International Journal of Production Economics*, 232, 107938.

Wang, W., Lai, K. H., & Shou, Y. (2018). The impact of servitization on firm performance: a meta-analysis. *International Journal of Operations & Production Management*.

Wang, Z., & Wang, N. (2012). Knowledge sharing, innovation and firm performance. Expert systems with applications, 39(10), 8899-8908.

Witell, L., Snyder, H., Gustafsson, A., Fombelle, P., & Kristensson, P. (2016). Defining service innovation: A review and synthesis. *Journal of Business Research*, 69(8), 2863–2872. https://doi.org/10.1016/j.jbusres.2015.12.055.

Yang, H., & Yang, J. (2019). The effects of transformational leadership, competitive intensity and technological innovation on performance. Technology Analysis & Strategic Management, 31(3), 292-305.

Yao, S., Pan, Y., Sensoy, A., Uddin, G. S., & Cheng, F. (2021). Green credit policy and firm performance: What we learn from China. Energy Economics, 101, 105415.

Yeh, Y. P. (2016). Market orientation and service innovation on customer perceived value: The case of supermarket retailers. Management Research Review.

Yousaf, S., Anser, M. K., Tariq, M., Jawad, S. U. R. S., Naushad, S., & Yousaf, Z. (2020). Does technology orientation predict firm performance through firm innovativeness?. World Journal of Entrepreneurship, Management and Sustainable Development, 17(1), 140-151.

Yousaf, Z., Sahar, N., Majid, A. and Rafiq, A. (2018), "The effect of e-marketing oreintation on strategic business performace", World Journal of Entrepreneursip, Management an Sustainable Developmen.

Yusheng, K., & Ibrahim, M. (2019). Service innovation, service delivery and customer satisfaction and loyalty in the banking sector of Ghana. *International Journal of Bank Marketing*, 37(5), 1215–1233. https://doi.org/10.1108/IJBM-06-2018-0142.

Zaher, T. S., & Kabir Hassan, M. (2001). A comparative literature survey of Islamic finance and banking. Financial Markets, Institutions & Instruments, 10(4), 155-199.

Zhang, D., Linderman, K., & Schroeder, R. G. (2012). The moderating role of contextual factors on quality management practices. Journal of Operations Management, 30(1-2), 12-23.

Zhou, K. Z., Yim, C. K., & Tse, D. K. (2005). The effects of strategic orientations on technology- and market-based breakthrough innovations. Journal of marketing, 69(2), 42-60.

Zhao, J. Y. and Wu, G. D., 2017. Evolution of the Chinese Industry-University-Research Collaborative Innovation System. Complexity.

Zheng, J., Wu, G., Xie, H., & Li, H. (2019). Leadership, organizational culture, and innovative behavior in construction projects. *International Journal of Managing Projects in Business*, 12(4), 888–918. https://doi.org/10.1108/IJMPB-04-2018-0068.

Zhou, K., & Li, C. (2010). How strategic orientations influence the building of dynamic capability in emerging economies. *Journal of Business Research*, 63(3), 224–231. https://doi.org/10.1016/j.jbusres.2009.03.003.

Zikmund, W. G. (2002). Business research methods (7th ed.). South-Western.

Ziggers, G. W., & Henseler, J. (2016). The reinforcing effect of a firm's customer orientation and supply-base orientation on performance. Industrial Marketing Management, 52, 18–26. https://doi.org/10.1016/j.indmarman.2015.07.011.

9 Appendices

9.1 Participants information sheet

PARTICIPANTS INFORMATION SHEET
RESEARCH TOPIC

(ENGLISH VERSION)

Firm performance, organisational culture and innovation: The case of Jordanian banks

Dear participant,
I would like to invite you to participate in this research project, which forms part of my PhD research. You should only participate if you want to; choosing not to take part will not disadvantage you in any way. Before you decide whether you want to take part, it is important for you to understand why the research is being done and what your participation will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask me if there is anything that is not clear or if you would like more information.

The purpose of the study is to examine the influence of service innovation on firm performance in banking industry in Jordan and the impacts of key orientations such as market, technology and learning orientations on service innovation.

Your participation is voluntary. What is said in the interview will be regarded as strictly confidential and will be held securely until the research is finished. If you change your mind, you are free to stop your participation and to have your data withdrawn without giving any reason up to 2 weeks after your interview. All data for analysis will be anonymised. In reporting on the research findings, I will not reveal the names of any participants or the organisation where you work. At all times, there will be no possibility of you as individuals being linked with the data.

Your interviews will be collected via an interview and should take approximately 1 hour. It will be based on the interview guide but is designed to be flexible so as to meet your needs. On request, you will be able to view the questions before the interview and will not have to answer any questions which would make you feel uncomfortable. With your consent, I will arrange to

interview you in a private area (for confidentiality reasons), e.g. book a room at your office, or at a suitable venue in a local public site if you prefer. The interview will be audio-recorded, subject to your permission.

Please note that all participants will be treated equally, underpinned by highest confidentiality and collaboration, regardless of any possible acquaintance between the interviewer and interviewee prior to the interviews.

To confirm your participation, please read and sign the attached consent form and return to me personally. Once I have received it, we will arrange a suitable time to conduct the interview. If you require further information, kindly contact me or my supervisors using the details below.

Thank you for your time.

Yours sincerely,

Mousa Yousef Alzu'bi (Researcher)
PhD Student,
Sheffield Hallam University
[redacted]

+447447160553

Supervisor 1 (DOS)	Supervisor 2	Supervisor 3
Prof. Kayhan Tajeddini Sheffield Hallam University [redacted]	Dr. Firoz Bhaiyat Sheffield Hallam University F.Bhaiyat@shu.ac.uk	Dr. Samah Issa Sheffield Hallam University s.Issa@shu.ac.uk

9.2 Participant consent form

PARTICIPANT CONSENT FORM

(ENGLISH VERSION)

Thank you for agreeing to take part in my research study. Please take a moment to read the information below and acknowledge your consent by ticking the response that applies.

	Yes	**No**
1. I have read the information sheet for this study and have had details of the study explained to me		
2. I understand that I am free to withdraw from the study within the time outlined in the information sheet, without giving a reason for my withdrawal, or to decline to answer any particular questions in the study without any consequences		
3. I agree to provide information to the research under the conditions of confidentiality set out in the information sheet		
4. I wish to participate in the study under the conditions set out in the information sheet		
5. My questions about the study have been answered to my satisfaction, and I understand that I may ask further questions at any point		
6. I consent to the information collected for the purposes of this research study, once anonymised, being used for any other research purposes		

Participant's Name: ……..

Participant Signature: …….. Date: …….

Email Address: ……..

Phone No: ……..

Researcher's Name: Mousa Yousef Alzu'bi

Researcher's Email Address: [redacted]

Any concerns and/or complaint about any aspect of the way you have been dealt with during this study will be addressed.

9.3 University formal letter

Sheffield Hallam University | Social and Economic Research Institute

24th August 2020

To whom it may concern,

This letter is confirmation that Mousa Alzubi is a student at Sheffield Business School, Sheffield Hallam University, and is collecting data for the purpose of his PhD studies with us.

Yours sincerely,

Sheffield Hallam University
Social & Economic Research Institute
Research Support Team
Charles Street
Sheffield
S1 1WB
[redacted]

9.4 QUESTIONNAIRE (ARABIC VERSION)

استبيان

(النسخة العربيه)

أداء الشركات وثقافتها التنظيمية والابتكار: حالة البنوك الأردنية

سيدي/ سيدتي الاعزاء

الغرض من البحث هو دراسة تأثير الابتكار الخدمي على أداء الشركات داخل الصناعة المصرفية في الأردن وكذلك تأثير توجهات السوق والتكنولوجيا والتعلم على الابتكار الخدمي. سوف تفيد نتائج هذه الدراسة البنوك وذلك بتحديد المتغيرات المختلفة التي يمكن أن تؤثر على الابتكار الخدمي وأداء الشركات. ارجوا ان تخصص 10 دقائق من وقتك لإكمال الاستبيان المرفق. يملأ الاستبيان مديرو البنوك في السطور الأولى والثانية والثالثة. كما اننا سنحافظ على سريه جميع الردود. نشكرك مقدمًا على تعاونك ومساهمتك في هذه الدراسة. ختاما، نرجوا ان تزودنا بتفاصيل الاتصال الخاصة بك حتى نتمكن من الاشاره الى التعليقات حول النتائج التي توصلنا إليها. شكرا لك على وقتك.

الخلفية العامة

يرجى الإجابة على الأسئلة التالية بوضع علامة (صح) في المربع ذي الصلة.

Q1- ما هو مستواك التعليمي؟

خريج الدراسات العليا □ بكلوريوس □ الدبلوم □

تفضل ان لا توضح ذلك □ حاصل على درجه الدكتوراه □

Q2- المنصب الذي تشغله في البنك؟

مدير فرع □ كبير المدراء □ CFO □ CEO □

مدير قسم □ مدير □ مديرمتقدم □ مساعد مدير □

Q3- عدد السنوات في المنصب؟

او اكثر -20 □ 16-20 □ 11-15 □ 6-10 □ 1-5 □

تفضل ان لا توضح ذلك □

Q4- عمر البنك الذي تعمل فيه؟

او اكثر -25 □ 21-25 □ 16-20 □ 11-15 □ 5-10 □

Q5- عدد الموظفين في الفرع / المقر العام؟

او اكثر -40 □ 31-40 □ 21-30 □ 10-20 □ اقل من 10 □

يرجى وضع علامة صح في المربع على المقياس 1-7 لكل فقره من (1) لا اتفق اطلاقا الى (7) اتفق الى حد كبير .

البنود/المفردات		1	2	3	4	5	6	7
		لا اتفق اطلاقا	لا اتفق	لا اتفق الى حدما	محايد	اتفق الى حدما	اتفق	اتفق الى حد كبير
توجه السوق								
توجه العملاء								
1	يقيس مصرفي رضا العملاء بانتظام							
2	لدى مصرفي إجراءات منتظمة لتحسين خدمة العملاء							
3	مهمه مصرفي الاساسيه خدمة العملاء							
4	تركز ممارسات وإجراءات مصرفي على الاستمرار في إرضاء العملاء							
توجه المنافس								
1	مصرفي أكثر كفاءة من المصارف الأخرى							
2	يستهدف مصرفي العملاء اين تتوفر له فرصه للميزة التنافسية							
3	يقييم مديرو مصرفي نقاط قوة المنافسين بانتظام							
4	يستجيب مصرفي بسرعة إلى الإجراءات التنافسية التي تهددنا							
التنسيق ما بين الوظائف								
1	كافه وظائف مصرفي تستجيب لاحتياجات بعضهم البعض							
2	يفهم مديرو مصرفي كيف يمكن للموظفين المساهمة في قيمه العملاء							
3	يراجع مديرو مصرفي من كل وظيفة العملاء الحاليين للمصرف بانتظام							
4	كافه وظائفي المصرفية مسخره لخدمة احتياجات أسواق عملائنا							
التوجه التقني								
1	أنشطة بحث و تطوير مهمة للغاية في مصرفي							
2	التقنيات والأساليب المتقدمة تستخدم باستمرار لتطوير خدمات جديدة في مصرفي							
3	التقنيات الجديدة تدمج في مصرفي بسرعة							
4	يعتزم مصرفي تطوير تقنيات جديدة استجابة لتوقعات العملاء المتغيرة							
5	ينشط مصرفي في تطوير التقنيات الجديدة							
التوجه التعليمي								
الالتزام بالتعلم								
1	تعتبر القيم الأساسية لمصرفنا التعلم مفتاح أساسي للتحسن							
2	الشعور السائد هنا هو أن تعلم الموظفين استثمار وليس انفاق							
3	التعلم في مصرفي سلعة أساسية ضرورية لضمان البقاء التنظيمي							
4	يتفق مدراء مصرفي بشكل أساسي على أن قدرة موظفي المصرف على التعلم هي مفتاح ميزته التنافسية							
الرؤية المشتركة								
1	يلتزم جميع الموظفين بأهداف مصرفي							
2	هناك هدف مشترك في مصرفي							

3	هناك اتفاق كامل على رؤية مصرفي على جميع المستويات والوظائف والأقسام							
4	بصفتي مديرًا ، أتأكد من أن الموظفين ينظرون إلى أنفسهم كشركاء في رسم مسار المصرف							
الانفتاح								
1	يراجع مصرفي باستمرار جودة القرارات والأنشطة التي يتم اتخاذها بمرور الوقت							
2	يدرك الموظفون في مصرفي أنه يجب دراسه ومناقشه الطريقة التي يدركون بها السوق باستمرار							
3	لا يخشى مصرفي من التفكير النقدي في الافتراضات المشتركة التي نطرحها بخصوص عملائنا							
الابتكار الخدمي								
1	يتم قبول الابتكار بسرعه في البرامج \ المشاريع الإدارة							
2	يتم تشجيع الابتكار في مصرفي							
3	يركز مديرو مصرفي تركيزا خاصا على الابتكار الخدمي							
4	يبحث مصرفي باستمرار عن طرق جديدة لتقديم أفضل الخدمات للعملاء							
5	يستطيع مصرفي تغيير / تعديل مناهج الخدمة الحالية لتلبية متطلبات العملاء الخاصة							
القيادة التحويلية								
1	ينقل مديرو مصرفي رؤية واضحة وإيجابية للمستقبل							
2	يعامل مديرو مصرفي الموظفين كأفراد ، ويدعمو ويشجعو تطويرهم							
3	يعزز مديرو مصرفي الثقة والمشاركة والتعاون بين أعضاء الفريق							
4	يشجع مديرو مصرفي على التفكير في المشكلات بأبتكارو دراسه الافتراضات							
5	مديرو مصرفي يغرسون الفخر والاحترام في الآخرين ويلهمون الموظفين كونهم ذوي كفاءة عالية							

يرجى وضع علامة صح في المربع على المقياس 1-7 خلال السنوات الثلاث الماضيه و مقارنتها بالمنافسين من (1 أقل بكثير الى 7 أعلى بكثير).

اداء الشركه		**1**	**2**	**3**	**4**	**5**	**6**	**7**
1	العائد على حقوق المساهمين							
2	العائد على الاصول							
3	العائد على الاستثمار							
4	أداء البنك بشكل عام							

يرجى وضع علامة صح في المربع على المقياس 1-7 لكل فقره من (1) لا أوافق اطلاقا الى (7) أوافق تماما.

		1	**2**	**3**	**4**	**5**	**6**	**7**
		لا أوافق اطلاقا	لا أوافق	لا اتفق الى حدما	محايد	اتفق الى حدما	أوافق	أوافق تماما
5	يتمتع مصرفي بسمعة جيدة							
6	العملاء الحاليون يودينون بالولاء لمصرفي							
7	مصرفي صورته جيدة							

هل ترغب في اضافه او اقتراح أي شي..

9.5 QUESTIONNAIRE (ENGLISH VERSION)

QUESTIONNAIRE

(ENGLISH VERSION)

Firm performance, organisational culture and innovation: The case of Jordanian banks

Dear Sir/Madam

The purpose of the study is to examine the influence of service innovation on firm performance within the banking industry in Jordan and the impact of market, technology and learning orientations on service innovation. The findings of this study will benefit banks by identifying different variables that can impact service innovation and firm performance. We wish to request 10 minutes of your time to complete the enclosed survey. The questionnaire should be filled in by bank managers in the first, second and third lines. All responses will be kept confidential. We thank you in advance for your cooperation and contribution to this study. Ultimately, we ask you for your contact details so that we can provide feedback on our findings. Thank you for your time.

General Background

Please answer the following questions by marking the relevant box with tick (√)

Q1- What is your level of education?

□ Diploma □ Graduate degree □ Post graduate degree
□ Doctoral degree □ Prefer not to say

Q2- Position held in the bank?

□ CEO □ CFO □ Chief manager □ Branch manager
□ Associate manager □ Senior manager □ Manager □ Director of the department

Q3- Number of years in position?

□ 1-5 □ 6-10 □ 11-15 □ 16-20 □ 20- or above
□ Prefer not to say

Q4- Age of your bank?

□ 5-10 □ 11-15 □ 16-20 □ 21-25 □ 25- or above

Q5- Number of employees in your branch/headquarters?

□ Less than 10 □ 10-20 □ 21-30 □ 31-40 □ 40- or above

Please mark by ticking (√) in box on scale 1-7 for each item from (1) strongly disagree to (7) strongly agree.

Items		1 Strongly Disagree	2 Disagree	3 Somewhat Disagree	4 Neutral	5 Somewhat Agree	6 Agree	7 Strongly Agree
Market Orientation								
Customer Orientation								
1	Our bank measures customer satisfaction on a regular basis.							
2	Our bank has regular measures for improving customer service.							
3	Our bank exists primarily to serve customers.							
4	Our bank's practices and procedures consistently focus on delivering customer satisfaction.							
Competitor Orientation								
1	Our bank is more competent as compared to other banks.							
2	Our bank targets customers where it has an opportunity for competitive advantage.							
3	Our bank managers regularly evaluate competitors' strengths.							
4	Our bank rapidly responds to competitive actions that threaten us.							
Interfunctional Coordination								
1	All of our bank functions are responsive to each other's needs.							
2	Our bank managers understand how employees can contribute to value of customers.							
3	Our bank managers from every function regularly review the bank's current customers.							
4	All of our bank functions are integrated into serving the needs of our customer markets.							
Technology Orientation								
1	R&D activities are very important in our bank.							
2	Advanced technologies and methods are constantly used to develop new services in our bank.							
3	New technologies are integrated into our bank rapidly.							
4	Our bank intends to develop new technologies in order to respond to the changing expectations of customers.							

5	Our bank is very active in developing new technologies.							
Learning Orientation								
Commitment to Learning								
1	The basic values of our bank include learning as an essential key to improvement.							
2	The sense around here is that employee learning is an investment, not an expense.							
3	Learning in our bank is seen as a key commodity necessary to guarantee organisational survival.							
4	Our bank managers basically agree that bank's ability to learn is the key to its competitive advantage.							
Shared Vision								
1	All employees are committed to the goals of our bank.							
2	There is a commonality of purpose in our bank.							
3	There is total agreement on our bank's vision across all levels, functions, and divisions.							
4	As a manager, I make sure that employees view themselves as partners in charting the direction of the bank.							
Open-Mindedness								
1	Our bank continually reviews the quality of decisions and activities taken over time.							
2	Employees in our bank realise that the very way they perceive the marketplace must be continually questioned.							
3	Our bank is not afraid to critically reflect on the shared assumptions we have made about our customers.							
Service Innovation								
1	Innovation is readily accepted in program/project management.							
2	Innovation in our bank is encouraged.							
3	Our bank managers give special emphasis to service innovation.							
4	Our bank constantly seeks new ways to provide better services to customers.							
5	Our bank is able to change/modify our current service approaches to meet special requirements from customers.							
Transformational leadership								
1	Our bank managers communicate a clear and positive vision of the future.							

2	Our bank managers treat staff as individuals, support and encourage their development.							
3	Our bank managers foster trust, involvement and cooperation among team members.							
4	Our bank managers encourage thinking about problems innovatively and questioning assumptions.							
5	Our bank managers instil pride and respect in others and inspire employees by being highly competent.							

Please mark by ticking (√) in box on scale 1-7 during the last three years and compared to competitors (from 1 "much lower" to 7 "much higher").

Firm performance		**1**	**2**	**3**	**4**	**5**	**6**	**7**
1	Return on assets (ROA).							
2	Return on equity (ROE).							
3	Return on investment (ROI).							
4	Overall of the bank's performance.							

Please mark by ticking (√) in box on scale 1-7 for each item from (1) strongly disagree to (7) strongly agree.

Non-financial performance		**1** Strongly Disagree	**2** Disagree	**3** Somewhat Disagree	**4** Neutral	**5** Somewhat Agree	**6** Agree	**7** Strongly Agree
5	Our bank has a good reputation.							
6	Our bank has loyalty from existing customers.							
7	Our bank has a good image.							

Would you like to add or suggest something……..…….

9.6 EFA of market orientation

9.6.1 KMO and Bartlett's Test

KMO and Bartlett's Test

Kairse-Meyer-Olkin Measures of Sampling Adequacy.		.844
Bartlett's Test of Sphericity	Approx.Chi-Square	883.465
	df	66
	Sig.	.000

9.6.2 Communalities

	Initial	Extraction
Customer orientation Q1	1.000	.608
Customer orientation Q2	1.000	.604
Customer orientation Q3	1.000	.674
Customer orientation Q4	1.000	.562
Competitor orientation Q1	1.000	.670
Competitor orientation Q2	1.000	.630
Competitor orientation Q3	1.000	.511
Competitor orientation Q4	1.000	.657
Interfunctional coordination Q1	1.000	.651
Interfunctional coordination Q2	1.000	.741
Interfunctional coordination Q3	1.000	.591
Interfunctional coordination Q4	1.000	.545

9.6.3 Total Variance Explained

Total Variance Explained

		Initial Eigenvalues		Extraction Sums Squared Loading			Rotation Sums Squared Loading		
Component	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	4.692	39.103	39.103	4.692	39.103	39.103			
2	1.672	13.936	53.038	1.672	13.936	53.038			
3	1.077	8.978	62.016	1.077	8.978	62.016			
4	.800	6.665	68.682						
5	.735	6.123	74.805						
6	.626	5.215	80.020						
7	.569	4.740	84.760						
8	.482	4.017	88.776						
9	.429	3.572	92.349						
10	.335	2.789	95.138						
11	.319	2.654	97.792						

12	.265	2.208	100.000

9.6.4 Rotated Component Matrix

Rotated Component Matrix

	Component		
Market orientation	1	2	3
Competitor orientation Q1	.816	.026	.052
Competitor orientation Q2	.734	.189	.236
Competitor orientation Q4	.722	.067	.362
Competitor orientation Q3	.616	.253	.260
Customer Orientation Q3	.229	.788	.031
Customer Orientation Q2	.196	.746	.090
Customer Orientation Q1	-.118	.741	.212
Customer Orientation Q4	.159	.714	.166
Interfunctional coordination Q2	.334	.252	.752
Interfunctional coordination Q4	.035	.048	.736
Interfunctional coordination Q3	.263	.115	.713
Interfunctional coordination Q1	.407	.245	.652

9.6.5 Component matrix

Component matrix

	Component		
Market orientation	1	2	3
Interfunctional coordination Q2	.781	-.142	.333
Interfunctional coordination Q1	.763	-.153	.210
Competitor orientation Q4	.695	-.369	-.195
Competitor orientation Q2	.691	-.236	-.310
Competitor orientation Q3	.665	-.135	-.223
Interfunctional coordination Q3	.643	-.215	.362
Customer Orientation Q3	.569	.557	-.201
Customer Orientation Q4	.567	.489	-.046
Customer Orientation Q2	.562	.520	-.132
Competitor orientation Q1	.549	-.362	-.487
Customer Orientation Q1	.437	.625	.163
Interfunctional coordination Q4	.480	-.176	.532

9.6.6 Component Transformation Matrix

Component Transformation Matrix

Component	1	2	3
1	.618	.519	.590
2	-.453	.849	-.272
3	-.642	-.099	.760

9.7 EFA of technology orientation

9.7.1 KMO and Bartlett's Test

KMO and Bartlett's Test

Kairse-Meyer-Olkin Measures of Sampling Adequacy.		.874
Bartlett's Test of Sphericity	Approx.Chi-Square	615.435
	df	10
	Sig.	.000

9.7.2 Communalities

	Initial	Extraction
Technology orientation Q1	1.000	.772
Technology orientation Q2	1.000	.709
Technology orientation Q3	1.000	.787
Technology orientation Q4	1.000	.721
Technology orientation Q5	1.000	.642

9.7.3 Total Variance Explained

Total Variance Explained

	Initial Eigenvalues			Extraction Sums Squared Loading		
Component	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	3.631	72.628	72.628	3.631	72.628	72.628
2	.485	9.701	82.328			
3	.362	7.235	89.563			
4	.287	5.744	95.307			
5	.235	4.693	100.000			

9.7.4 Component Matrix

Component Matrix

	Component
Technology orientation	1
Q3	.887
Q1	.879
Q4	.849
Q2	.842
Q5	.801

9.8 EFA of learning orientation

9.8.1 KMO and Bartlett's Test

KMO and Bartlett's Test

Kairse-Meyer-Olkin Measures of Sampling Adequacy.		.877
Bartlett's Test of Sphericity	Approx.Chi-Square	1035.335
	df	55
	Sig.	.000

9.8.2 Communalities

Communalities

	Initial	Extraction
Commitment to learning Q1	1.000	.779
Commitment to learning Q2	1.000	.752
Commitment to learning Q3	1.000	.719
Commitment to learning Q4	1.000	.727
Shared Vision Q1	1.000	.644
Shared Vision Q2	1.000	.704
Shared Vision Q3	1.000	.615
Shared Vision Q4	1.000	.582
Open minedness Q1	1.000	.673
Open minedness Q2	1.000	.786
Open minedness Q3	1.000	.626

9.8.3 Total Variance Explained

Total Variance Explained

	Initial Eigenvalues			Extraction Sums Squared Loading			Rotation Sums Squared Loading		
Component	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	5.252	47.745	47.745	5.252	47.745	47.745			
2	1.301	11.825	59.570	1.301	11.825	59.570			
3	1.054	9.584	69.154	1.054	9.584	69.154			
4	.684	6.221	75.375						
5	.585	5.318	80.693						
6	.478	4.346	85.039						
7	.435	3.954	88.993						
8	.377	3.432	92.425						
9	.308	2.798	95.223						
10	.293	2.662	97.885						
11	.233	2.115	100.000						

9.8.4 Component Matrix

Component Matrix

	Component		
	1	2	3
Commitment to learning Q4	.810	-.267	.003
Commitment to learning Q2	.774	-.288	.265
Commitment to learning Q3	.740	-.381	.162
Shared Vision Q2	.736	.124	-.383
Commitment to learning Q1	.723	-.443	.244
Shared Vision Q4	.693	.084	-.309
Shared Vision Q3	.687	-.120	-.357
Shared Vision Q1	.633	.242	-.429
Open mindedness Q1	.620	.533	.067
Open mindedness Q3	.588	.284	.447
Open mindedness Q2	.550	.587	.373

9.8.5 Rotated Component Matrix

Rotated Component Matrix

	Component		
	1	2	3
Commitment to learning Q1	.856	.173	.124
Commitment to learning Q3	.796	.259	.134

Commitment to learning Q2	.795	.218	.270
Commitment to learning Q4	.709	.445	.162
Shared vision Q2	.262	.769	.209
Shared vision Q1	.099	.764	.226
Shared vision Q4	.287	.678	.201
Shared vision Q3	.401	.673	.024
Open mindedness Q2	.109	.163	.865
Open mindedness Q3	.361	.072	.701
Open mindedness Q1	.078	.430	.694

9.8.6 Component Transformation Matrix

Component Transformation Matrix

Component	1	2	3
1	.656	.614	.438
2	-.661	.189	.726
3	.363	-.766	.530

9.9 EFA of service innovation

9.9.1 KMO and Bartlett's Test

KMO and Bartlett's Test

Kairse-Meyer-Olkin Measures of Sampling Adequacy.		.800
Bartlett's Test of Sphericity	Approx.Chi-Square	362.290
	df	10
	Sig.	.000

9.9.2 Communalities

Communalities

	Initial	Extraction
Q1	1.000	.556
Q2	1.000	.765
Q3	1.000	.446
Q4	1.000	.666
Q5	1.000	517

9.9.3 Total Variance Explained

Total Variance Explained

	Initial Eigenvalues			Extraction Sums Squared Loading		
Component	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	2.949	58.988	58.988	2.949	58.988	58.988
2	.756	15.123	74.112			
3	.611	12.214	86.326			
4	.384	7.681	94.007			
5	.300	5.993	100.000			

9.9.4 Component Matrix

Component Matrix

	Component
Service innovation	1
Q2	.875
Q4	.816
Q1	.746
Q5	.719
Q3	.668

9.10 EFA of transformational leadership

9.10.1 KMO and Bartlett's Test

KMO and Bartlett's Test

Kairse-Meyer-Olkin Measures of Sampling Adequacy.		.872
Bartlett's Test of Sphericity	Approx.Chi-Square	612.165
	df	10
	Sig.	.000

9.10.2 Communalities

Communalities

	Initial	Extraction
Q1	1.000	.602
Q2	1.000	.792
Q3	1.000	.801
Q4	1.000	.735
Q5	1.000	.670

9.10.3 Total Variance Explained

Total Variance Explained

	Initial Eigenvalues			Extraction Sums Squared Loading		
Component	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	3.601	72.019	72.019	3.601	72.019	72.019
2	.529	10.575	82.594			
3	.374	7.482	90.076			
4	.264	5.282	95.358			
5	.232	4.642	100.000			

9.10.4 Component Matrix

Component Matrix

	Component
Transformational leadership	1
Q3	.895
Q2	.890
Q4	.858
Q5	.819
Q1	.776

9.11 EFA of firm performance

9.11.1 KMO and Bartlett's Test

KMO and Bartlett's Test

Kairse-Meyer-Olkin Measures of Sampling Adequacy.		.815
Bartlett's Test of Sphericity	Approx.Chi-Square	1075.872
	df	21
	Sig.	.000

9.11.2 Communalities

	Initial	Extraction
Financial performance (ROA)	1.000	.867
Financial performance (ROE)	1.000	.908
Financial performance (ROI)	1.000	.877
Overall performance	1.000	.766
Non-financial performance Q1	1.000	.803
Non-financial performance Q2	1.000	.677
Non-financial performance Q3	1.000	.836

9.11.3 Total Variance Explained

Total Variance Explained

Component	Total	Initial Eigenvalues		Extraction Sums Squared Loading			Rotation Sums Squared Loading		
		% of variance	Cumulative %	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	4.011	57.304	57.304	4.011	57.304	57.304			
2	1.724	24.622	81.926	1.724	24.622	81.926			
3	.451	6.439	88.364						
4	.302	4.310	92.674						
5	.237	3.381	96.055						
6	.171	2.445	98.500						
7	.105	1.500	100.000						

9.11.4 Component Matrix

Component Matrix

	Component	
	1	2
Financial performance Q3 (ROI)	.879	-.324
Financial performance Q4 (Overall)	.873	-.065
Financial performance Q2 (ROE)	.817	-.491
Financial performance Q1 (ROA)	.758	-.541
Non- Financial performance Q3	.678	.614
Non- Financial performance Q2	.623	.573
Non- Financial performance Q1	.623	.644

9.11.5 Rotated Component Matrix

Rotated Component Matrix

	Component	
	1	2
Financial performance Q2 (ROE)	.947	.102
Financial performance Q1 (ROA)	.931	.026
Financial performance Q3 (ROI)	.896	.273
Q4 (Overall performance)	.735	.476
Non-Financial performance Q3	.169	.899
Non-Financial performance Q1	.108	.890
Non-Financial performance Q2	.172	.805

9.11.6 Component Transformation Matrix

Component Transformation Matrix

Component	1	2
1	.797	.604
2	-.604	.797

9.12 Common method variance (CMV)

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.883
Bartlett's Test of Sphericity	Approx. Chi-Square	4836.966
	df	703
	Sig.	.000

Communalities

	Initial	Extraction
Market Orientation (Customer Orientation) Q1	1.000	.610
Market Orientation (Customer Orientation) Q2	1.000	.651
Market Orientation (Customer Orientation) Q3	1.000	.685
Market Orientation (Customer Orientation) Q4	1.000	.800
Market Orientation (Competitor Orientation) Q1	1.000	.753
Market Orientation (Competitor Orientation) Q2	1.000	.514
Market Orientation (Competitor Orientation) Q3	1.000	.512
Market Orientation (Competitor Orientation) Q4	1.000	.651
Market Orientation (Interfunctional Coordination) Q1	1.000	.683
Market Orientation (Interfunctional Coordination) Q2	1.000	.684
Market Orientation (Interfunctional Coordination) Q3	1.000	.639
Market Orientation (Interfunctional Coordination) Q4	1.000	.497
Technology Orientation Q1	1.000	.733

Technology Orientation Q2	1.000	.668
Technology Orientation Q3	1.000	.797
Technology Orientation Q4	1.000	.718
Technology Orientation Q5	1.000	.681
Learning Orientation (Commitment to learning) Q1	1.000	.703
Learning Orientation (Commitment to learning) Q2	1.000	.691
Learning Orientation (Commitment to learning) Q3	1.000	.692
Learning Orientation (Commitment to learning) Q4	1.000	.678
Learning Orientation (Shared vision) Q1	1.000	.570
Learning Orientation (Shared vision) Q2	1.000	.625
Learning Orientation (Shared vision) Q3	1.000	.580
Learning Orientation (Shared vision) Q4	1.000	.626
Learning Orientation (Open mindedness) Q1	1.000	.668
Learning Orientation (Open mindedness) Q2	1.000	.636
Learning Orientation (Open mindedness) Q3	1.000	.802
Service Innovation Q1	1.000	.579
Service Innovation Q2	1.000	.778
Service Innovation Q3	1.000	.702
Service Innovation Q4	1.000	.680
Service Innovation Q5	1.000	.560
Transformational Leadership Q1	1.000	.629
Transformational Leadership Q2	1.000	.791
Transformational Leadership Q3	1.000	.793
Transformational Leadership Q4	1.000	.752
Transformational Leadership Q5	1.000	.701

Extraction Method: Principal Component Analysis

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13.530	35.604	35.604	13.530	35.604	35.604
2	2.519	6.628	42.232	2.519	6.628	42.232
3	2.195	5.777	48.009	2.195	5.777	48.009
4	1.874	4.932	52.941	1.874	4.932	52.941
5	1.671	4.396	57.338	1.671	4.396	57.338
6	1.401	3.686	61.024	1.401	3.686	61.024
7	1.225	3.225	64.249	1.225	3.225	64.249
8	1.098	2.890	67.139	1.098	2.890	67.139
9	.960	2.526	69.665			
10	.943	2.482	72.148			
11	.882	2.321	74.469			
12	.809	2.128	76.596			
13	.728	1.917	78.513			
14	.686	1.805	80.318			
15	.640	1.685	82.003			
16	.561	1.477	83.480			
17	.536	1.409	84.890			
18	.500	1.317	86.207			
19	.468	1.231	87.437			
20	.447	1.177	88.614			
21	.406	1.067	89.682			
22	.389	1.025	90.706			
23	.362	.954	91.660			
24	.340	.894	92.554			
25	.326	.859	93.413			
26	.309	.813	94.226			
27	.288	.759	94.984			
28	.254	.669	95.653			
29	.226	.595	96.249			
30	.222	.584	96.833			
31	.214	.563	97.397			
32	.194	.512	97.908			
33	.170	.446	98.355			
34	.151	.398	98.753			
35	.141	.370	99.123			
36	.136	.357	99.480			

37	.103	.272	99.752				
38	.094	.248	100.000				

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component							
	1	2	3	4	5	6	7	8
Technology Orientation Q3	.784	-.277	-.119	-.171	-.199	-.003	-.136	-.063
Learning Orientation (Commitment to learning) Q4	.762	-.076	-.166	.160	.078	-.170	-.061	.022
Learning Orientation (Commitment to learning) Q3	.739	-.100	-.284	.114	-.143	-.116	.055	.070
Learning Orientation (Commitment to learning) Q2	.717	-.055	-.186	.110	.038	-.121	.033	.332
Technology Orientation Q1	.708	-.286	-.082	-.068	-.305	-.075	-.016	-.202
Technology Orientation Q4	.707	-.243	-.084	-.021	-.211	-.036	-.304	-.114
Technology Orientation Q2	.697	-.220	-.202	-.011	-.140	-.072	-.099	-.241
Market Orientation (Interfunctional Coordination) Q2	.685	-.208	.146	-.045	.096	.290	.124	-.198
Market Orientation (Interfunctional Coordination) Q1	.681	-.215	.188	-.146	.189	.233	.047	-.157
Market Orientation (Competitor Orientation) Q4	.677	-.314	-.166	-.046	-.006	-.141	.165	-.131
Transformational Leadership Q3	.661	.470	-.187	.229	-.150	.145	.058	-.014
Learning Orientation (Shared vision) Q2	.660	.008	.019	.037	.316	-.181	-.213	-.098
Transformational Leadership Q2	.657	.456	-.219	.244	-.086	.170	-.055	-.068
Technology Orientation Q5	.655	-.318	-.071	-.188	-.266	.046	-.138	.135

Learning Orientation (Commitment to learning) Q1	.651	-.115	-.391	.111	-.034	-.157	.117	.248
Market Orientation (Competitor Orientation) Q2	.641	-.242	-.021	-.029	-.070	-.029	.185	-.052
Learning Orientation (Shared vision) Q3	.610	-.016	-.082	.215	.207	-.287	-.168	-.036
Market Orientation (Competitor Orientation) Q3	.608	-.106	.097	-.026	-.133	.019	.295	-.126
Transformational Leadership Q4	.594	.498	-.191	.233	-.108	.212	.060	-.008
Transformational Leadership Q1	.591	.351	-.120	.330	.011	.113	-.134	.043
Learning Orientation (Shared vision) Q4	.584	-.046	-.014	.178	.419	-.203	-.183	.021
Transformational Leadership Q5	.564	.462	-.191	.166	-.058	.264	.177	.027
Service Innovation Q2	.541	.446	.333	-.317	-.046	-.252	.006	-.093
Market Orientation (Interfunctional Coordination) Q3	.538	-.023	.180	-.201	.044	.373	.314	-.190
Learning Orientation (Open mindedness) Q2	.531	.018	.025	-.341	.362	.310	-.096	.010
Learning Orientation (Shared vision) Q1	.528	-.092	.085	.046	.484	-.197	.032	-.009
Service Innovation Q3	.492	.158	.274	-.239	-.392	-.008	-.349	.165
Service Innovation Q1	.490	.349	.193	-.262	-.193	-.233	-.035	-.138
Service Innovation Q5	.483	.354	.329	-.182	.024	-.215	.028	.108
Market Orientation (Interfunctional Coordination) Q4	.473	-.112	.013	-.222	-.119	.376	-.215	.098
Service Innovation Q4	.460	.448	.316	-.338	.010	-.212	-.043	-.087
Market Orientation (Customer Orientation) Q3	.450	.019	.567	.357	-.068	-.098	.097	.097
Market Orientation (Customer Orientation) Q2	.379	-.176	.538	.375	-.005	-.086	.183	-.074

Market Orientation (Customer Orientation) Q4	.373	-.308	.509	.196	-.128	.183	-.013	.467
Market Orientation (Customer Orientation) Q1	.306	-.151	.445	.488	-.056	.172	-.154	-.022
Learning Orientation (Open mindedness) Q1	.532	.043	-.006	-.030	.541	.248	-.143	-.087
Market Orientation (Competitor Orientation) Q1	.543	-.013	-.086	-.167	.015	-.185	.603	.158
Learning Orientation (Open mindedness) Q3	.521	.031	-.084	-.422	.225	.105	.019	.532

9.13 Variance inflation factor (VIF)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	3.016	.693		4.354	.000		
	SI	.033	.127	.021	.258	.797	.673	1.486
	TL	-.067	.090	-.066	-.745	.457	.594	1.682
	MO	-.036	.164	-.023	-.222	.824	.424	2.358
	LO	.617	.159	.433	3.888	.000	.375	2.664
	TEO	-.119	.108	-.115	-1.110	.268	.433	2.309

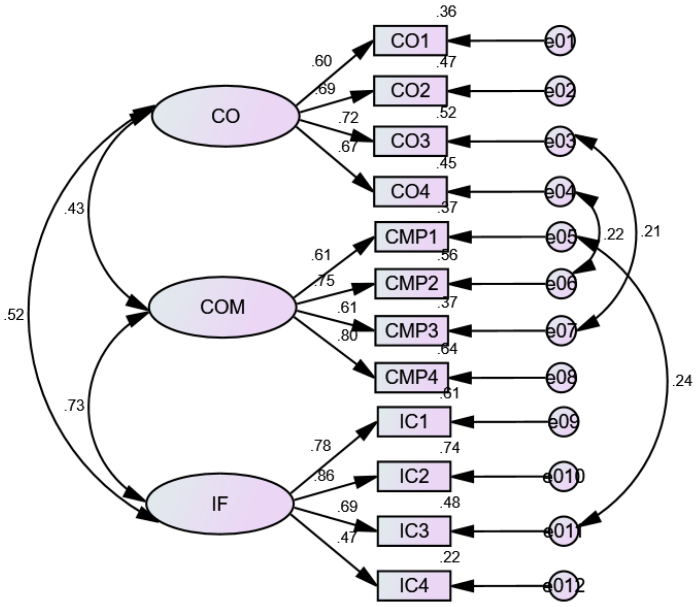
a. Dependent Variable: FIP

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	2.996	.403		7.429	.000		
	SI	.055	.074	.053	.746	.457	.673	1.486
	TL	.039	.053	.055	.732	.465	.594	1.682
	MO	-.007	.095	-.007	-.076	.940	.424	2.358
	LO	.366	.092	.376	3.966	.000	.375	2.664
	TEO	.143	.063	.202	2.286	.023	.433	2.309

a. Dependent Variable: NFIP

9.14 CFA of market orientation



Model fit summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	42	80.274	48	.002	1.672
Saturated model	90	.000	0		
Independence model	24	905.571	66	.000	13.721

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.911	.878	.962	.947	.962
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.727	.663	.699
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	32.274	11.453	60.977
Saturated model	.000	.000	.000
Independence model	839.571	746.069	940.498

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.405	.163	.058	.308
Saturated model	.000	.000	.000	.000
Independence model	4.574	4.240	3.768	4.750

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.058	.035	.080	.257
Independence model	.253	.239	.268	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	164.274	170.176		
Saturated model	180.000	192.649		
Independence model	953.571	956.944		

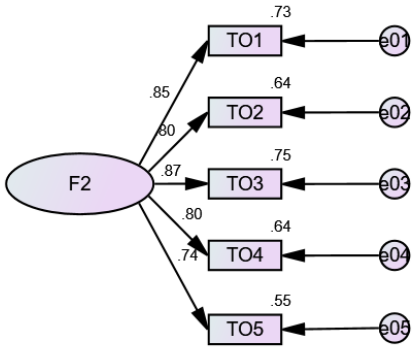
ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	.830	.725	.975	.859
Saturated model	.909	.909	.909	.973
Independence model	4.816	4.344	5.326	4.833

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	161	182
Independence model	19	21

9.15 CFA of technology orientation



Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	10	14.909	5	.011	2.982
Saturated model	15	.000	0		
Independence model	5	623.305	10	.000	62.331

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.037	.972	.917	.324

Model	RMR	GFI	AGFI	PGFI
Saturated model	.000	1.000		
Independence model	.842	.365	.048	.243

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.976	.952	.984	.968	.984
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.500	.488	.492
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	9.909	1.900	25.504
Saturated model	.000	.000	.000
Independence model	613.305	535.165	698.848

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.075	.050	.010	.129
Saturated model	.000	.000	.000	.000
Independence model	3.148	3.098	2.703	3.530

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.100	.044	.161	.068
Independence model	.557	.520	.594	.000

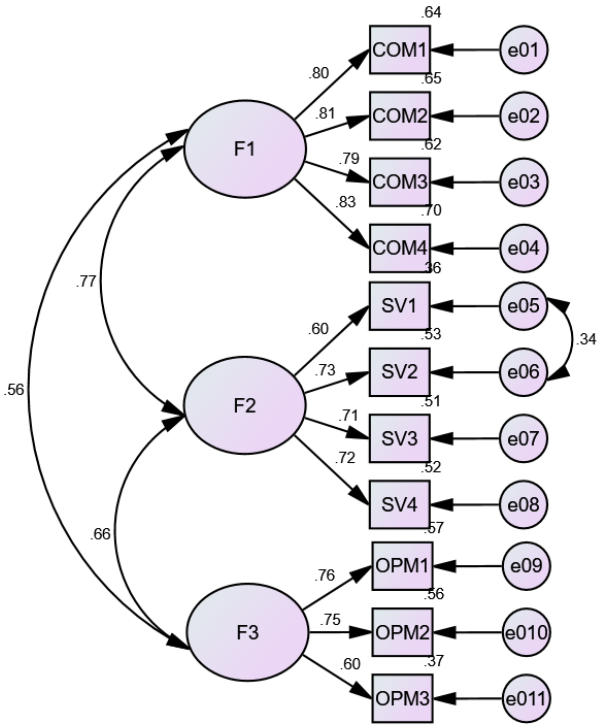
AIC

Model	AIC	BCC	BIC	CAIC
Default model	34.909	35.534	67.842	77.842
Saturated model	30.000	30.938	79.400	94.400
Independence model	633.305	633.618	649.772	654.772

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	.176	.136	.255	.179
Saturated model	.152	.152	.152	.156
Independence model	3.199	2.804	3.631	3.200

9.16 CFA of learning orientation



Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	26	88.725	40	.000	2.218
Saturated model	66	.000	0		
Independence model	11	1059.413	55	.000	19.262

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.068	.923	.872	.559
Saturated model	.000	1.000		
Independence model	.525	.344	.213	.287

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.916	.885	.952	.933	.951
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.727	.666	.692
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	48.725	25.236	79.947
Saturated model	.000	.000	.000
Independence model	1004.413	902.399	1113.833

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.448	.246	.127	.404
Saturated model	.000	.000	.000	.000
Independence model	5.351	5.073	4.558	5.625

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.078	.056	.100	.019
Independence model	.304	.288	.320	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	140.725	144.080	226.351	252.351
Saturated model	132.000	140.516	349.358	415.358

Model	AIC	BCC	BIC	CAIC
Independence model	1081.413	1082.832	1117.639	1128.639

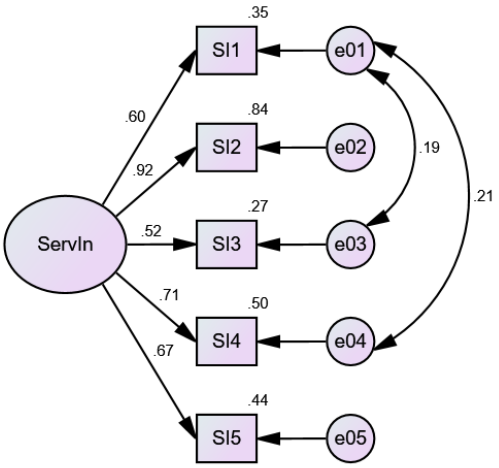
ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	.711	.592	.868	.728
Saturated model	.667	.667	.667	.710
Independence model	5.462	4.946	6.014	5.469

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	125	143
Independence model	14	16

9.17 CFA of service innovation



Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	17	8.498	3	.037	2.833
Saturated model	20	.000	0		
Independence model	10	366.923	10	.000	36.692

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.977	.923	.985	.949	.985
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.300	.293	.295
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	5.498	.269	18.269
Saturated model	.000	.000	.000
Independence model	356.923	298.000	423.262

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.043	.028	.001	.092
Saturated model	.000	.000	.000	.000
Independence model	1.853	1.803	1.505	2.138

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.096	.021	.175	.122

Model	RMSEA	LO 90	HI 90	PCLOSE
Independence model	.425	.388	.462	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	42.498	43.561		
Saturated model	40.000	41.250		
Independence model	386.923	387.548		

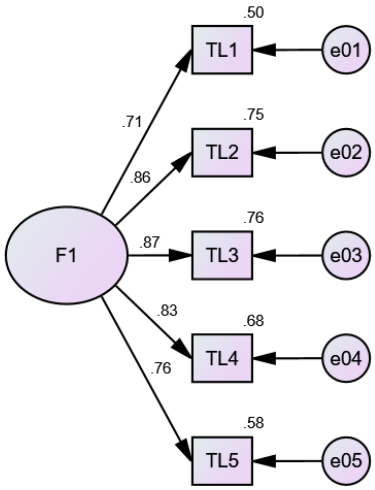
ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	.215	.188	.279	.220
Saturated model	.202	.202	.202	.208
Independence model	1.954	1.657	2.289	1.957

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	183	265
Independence model	10	13

9.18 CFA of transformational leadership



Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	15	13.682	5	.018	2.736
Saturated model	20	.000	0		
Independence model	10	619.993	10	.000	61.999

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.978	.956	.986	.972	.986
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.500	.489	.493
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	8.682	1.259	23.709
Saturated model	.000	.000	.000
Independence model	609.993	532.070	695.316

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.069	.044	.006	.120
Saturated model	.000	.000	.000	.000
Independence model	3.131	3.081	2.687	3.512

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.094	.036	.155	.095
Independence model	.555	.518	.593	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	43.682	44.620		
Saturated model	40.000	41.250		
Independence model	639.993	640.618		

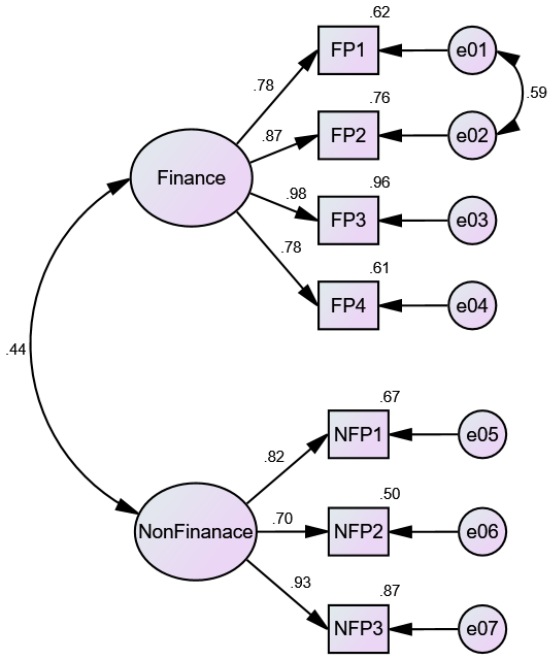
ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	.221	.183	.297	.225
Saturated model	.202	.202	.202	.208
Independence model	3.232	2.839	3.663	3.235

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	161	219
Independence model	6	8

9.19 CFA of firm performance



Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	24	43.334	11	.000	3.939
Saturated model	35	.000	0		
Independence model	14	1093.359	21	.000	52.065

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.960	.924	.970	.942	.970
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.524	.503	.508
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	32.334	15.756	56.472
Saturated model	.000	.000	.000
Independence model	1072.359	967.759	1184.346

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.219	.163	.080	.285
Saturated model	.000	.000	.000	.000
Independence model	5.522	5.416	4.888	5.982

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.122	.085	.161	.001
Independence model	.508	.482	.534	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	91.334	93.355		
Saturated model	70.000	72.947		
Independence model	1121.359	1122.538		

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	.461	.378	.583	.471

Model	ECVI	LO 90	HI 90	MECVI
Saturated model	.354	.354	.354	.368
Independence model	5.663	5.135	6.229	5.669

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	90	113
Independence model	6	8