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**THE EFFECT OF MARKETING KNOWLEDGE
MANAGEMENT ON BANK PERFORMANCE THROUGH
FINTECH INNOVATIONS: A SURVEY STUDY OF
JORDANIAN COMMERCIAL BANKS**

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ABSTRACT

Aim/Purpose	This study aimed to examine the effect of marketing knowledge management (MKM) on bank performance via the mediating role of the Fintech innovation in Jordanian commercial banks.
Background	An extensive number of studies found a significant relationship between Marketing knowledge management and bank performance (e.g., Akroush & Al-Mohammad, 2010; Hou & Chien 2010; Rezaee & Jafari, 2015; Veismoradi et al., 2013). However, there remains a lack of clarity regarding the relationship between marketing knowledge management (MKM) and bank performance (BP). Furthermore, the linkage between MKM and BP is not straightforward but, instead, includes a more complicated relationship. Therefore, it is argued that managing marketing knowledge management assets and capabilities can enhance performance via the role of financial innovation as a mediating factor on commercial banks; to date, however, there is no empirical evidence.
Methodology	Based on a literature review, knowledge-based theory, and financial innovation theory, an integrated conceptual framework has been developed to guide the

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study. A quantitative approach was used, and the data was collected from 336 managers and employees in all 13 Jordanian commercial banks using online and in hand instruments. Structural equation modeling (SEM) was used to analyze and verify the study variables.

Contribution	This article contributes to theory by filling a gap in the literature regarding the role of marketing knowledge management assets and capabilities in commercial banks operating in a developing country like Jordan. It empirically examined and validated the role of Fintech innovation as mediators between marketing knowledge management and bank performance
Findings	The main findings revealed that marketing knowledge management had a significant favorable influence on bank performance. Fintech innovation acted as partial mediators in this relationship.
Recommendations for Practitioners	Commercial banks should be fully aware of the importance of knowledge management practices to enhance their financial innovation and bank performance. They should also consider promoting a culture of practicing knowledge management processes among their managers and employees by motivating and training to promote innovations.
Recommendations for Researchers	The result endorsed Fintech innovation's mediating effect on the relationship between the independent variable, marketing knowledge management (assets and capabilities), and the dependent variable bank performance, which was not addressed before; thus, it needs further validation.
Future Research	The current designed research model can be applied and assessed further in other sectors, including banking and industrial sectors across developed and developing countries. It would also be of interest to introduce other variables in the study model that can act as consequences of MKM capabilities, such as financial and non-financial performance measures
Keywords	marketing knowledge management, Fintech innovation, bank performance

INTRODUCTION

Knowledge is regularly quoted as power; it turns to be an irrefutable truth in the current time as organizations and individuals live in the “knowledge-based society,” where the knowledge is the most crucial source of quality and power (Lungu, 2019). Today's management and marketing scholars appreciate the ability to create and employ knowledge as the essential source of a firm's better performance (Fidel et al., 2016; Muddaha et al., 2018). Knowledge brings awareness and expertise as the cornerstones for economic interests.

Consequently, strategic knowledge should be appreciated as a treasured resource for the organizations despite the sector and business they are working in (Foumani & Chirani, 2012). In addition to the agreed-upon benefits, the marketing studies agree that the marketing knowledge mirrors both explicit as well as tacit knowledge. It involves strategies with rivals, collaborations tactics, and customer relationships. Furthermore, marketing knowledge (MK) indicates the learned lessons from the earlier marketing experiences to be employed when developing new products or while retaining the relationships with existing customers (Foumani & Chirani, 2012). Thus, this knowledge ought to be managed effectively (Kermally, 2019). The innovation is considered a crucial factor in the wealth creation and the organizational competitiveness since it is now outdated to compete based only on the financial capital or based on copying others (Efrat et al., 2017)

Knowledge management and competitive advantage are significantly related to each other. This relationship is mainly beneficial for business organizations. It is argued that this relationship's

importance emanates from the fact that organizing knowledge empowers employees in organizations to enhance their performance in accomplishing their tasks and activities (Ritala et al., 2018). Competency and incremental innovations indicate a solution to reduce sustainable development pressures. Besides, innovation serves to develop new capabilities to remove any unwanted business practices and to capture the business value successfully (Foumani & Chirani, 2012; Massa & Tucci, 2013). On the one hand, the merger between innovation and existing business settings is hard to achieve (Chesbrough, 2010; Massa & Tucci, 2013). On the other hand, as the success of any innovation effort is not only the accountability of the innovativeness/actor, the role of social and business contexts need to be improved and systemic at all levels (Foumani & Chirani, 2012; Massa & Tucci, 2013).

The knowledge-based view stated that the knowledge owned by any organization is under the risk of being imitated or transmitted (Lungu, 2019). The marketing knowledge as a strategic resource is an excellent example; in this case, the banking sector, as well, is running under jeopardy as there is unmatched knowledge in the industry, and a variety of capabilities are using knowledge (Lungu, 2019; Massa & Tucci, 2013). The implication of such an unmatched knowledge problem is related to the corporate image, reputation, copyright, profits, market share, shareholders' wealth, and bank performance. This sheds light on the necessity to utilize the management practices aimed to support efficient management of marketing knowledge as it is more likely to achieve higher financial performance (Ben Zaid et al., 2015). The marketing knowledge management serves in reducing the risks when knowledge is effectively managed, and this effectiveness creates distinctive capabilities that provide improved bank performance through innovation (Leal-Rodríguez et al., 2013). Hence, superior bank performance is accomplished. Despite the growing recognition of the importance of knowledge management's contribution to the promotion of innovation, most of the existing studies have not made clear guidance on individual knowledge processes that are believed to have the most significant effects (Bueno et al., 2008, Rahimi et al., 2018). Further, research on the interaction between knowledge management and innovation is highly needed (Andreeva & Kianto, 2011; Dahiyat, 2015)

In Jordan, the banking sector is one of the cornerstones to the economy, as it contributes noticeably to the gross domestic production (GDP); it offers job opportunities. Moreover, it serves in funding individuals, corporations, and governmental projects. In addition to that, this sector proved its stability even in the most critical situations such as the Gulf Wars I and II, also during the global economic recession of 2008 (Jordanian Banks Association, 2020). The banks' core business and competences are mainly based on explicit and tacit knowledge. It involves the list of customer details, retention strategies, business strategies, policies and procedures, and financial and non-financial accounts information collaborations with external and domestic banks. However, according to the importance of marketing as a significant competition source, the marketing strategies are the most vital knowledge because they are the generator of other ones. Banks spend and allocate huge capital to protect their knowledge from being hacked or used in unauthorized usage by any external or internal party. Otherwise, the failure to protect and manage the marketing knowledge by documenting and sharing it will cost the banks huge losses that are not limited to the financial impact, customer base, reputation, market share, and international position in the global industry.

Greater use of technology in banks is allusive to an industry leveraging knowledge management (KM), and this is ideal for this study. Banks have realized the crucial role of knowledge management in gaining an edge in this competitive field. On the other hand, disruptive innovation has potential in empowering the bank industry to face unprecedented challenges reflected in the decline of the value provided to clients and shareholders through innovative delivery services/technologies that replace outdated ones. These innovations are neither imitative nor incremental; however, existing services/technologies should be substituted by ones with more benefits, namely, those that are more valuable, more accessible, and more affordable; thereby making them available for much larger segments of customers which might be previously ignored by current competitors (Bolen et al., 2009; Wessel & Christensen, 2012).

Despite the growing body of studies that examined the relationship between marketing knowledge management and bank performance (e.g., Akroush & Al-Mohammad, 2010; Hou & Chien 2010; McIver & Lepisto, 2017; Rezaee& Jafari, 2015; Veismoradi et al., 2013), there remains a lack of clarity regarding the relationship between marketing knowledge management (MKM) and bank performance (BP). Furthermore, the linkage between MKM and BP is not straightforward but, instead, includes a more complicated relationship. Therefore, it is argued that managing marketing knowledge management assets and capabilities can enhance performance *via* the role of financial innovation as a mediating factor on commercial banks; to date, however, there is no empirical evidence. Therefore, this study attempts to answer the following questions:

1. Does marketing knowledge management (assets and capabilities) influence bank performance in commercial banks operating in Jordan?
2. Does marketing knowledge management (assets and capabilities) influence Fintech innovation in the Jordanian banking sector?
3. Does Fintech innovation mediate the relationship between marketing knowledge management (assets and capabilities) and bank performance?

Based on the study questions, the first step of this paper is to develop the rationale for its model by reviewing relevant theories and literature about MKM and providing arguments supporting it. Second, the methodology and statistical findings, as well as discussion of its findings in comparison with previous studies, are then presented. Third, the paper's conclusions, implications, and contributions to knowledge are explained, and fourth, limitations and future research are outlined.

LITERATURE REVIEW

MARKETING KNOWLEDGE MANAGEMENT

Akroush and Al-Mohammad (2010) stated that the marketing knowledge management is “*a discipline that involves the recognition and analysis of obtainable and required marketing-related knowledge assets and capabilities, and the ensuing planning and control of actions to develop both the marketing assets and capabilities to fulfil organizational objectives.*” (p. 42). Marketing knowledge management also refers to that specific scope of knowledge related to the organizational marketing processes (Fang et al., 2010). On the other hand, other researchers relate marketing knowledge management to the efforts towards analyzing the trends of the market to understand social aspects, customer behavior, cultural aspects, and developing brands, products, and the different marketing activities (e.g., Fang et al., 2010; Leposky et al., 2017; Muddaha et al., 2018; Veismoradi et al. (2013).

A marketing process is viewed as a series of steps that allow organizations to identify customer problems, analyze market opportunities, and develop marketing mix to reach the desired audience (Fang et al., 2010). For instance, the marketing mix includes various activities designed for the development and management of an organization. Other events are designed to develop, disseminate, and utilize marketing information (Ellis, 2010). However, more developed and advanced activities are used to implement marketing philosophy and other marketing approaches (Falahati et al., 2013). Some activities are also designed to make operational marketing philosophy and other marketing methods throughout the organization. Such a variety of marketing activities requires the existence and optimization of relevant assets and the growth abilities of MKM to achieve organizational goals. Faraji (2011) argued that if the financial firms are moving slower than their surroundings, they will collapse.

An organization's marketing assets and capabilities have been described as a significant determinant of bank performance and are a potential source of achieving a competitive advantage. The built-in marketing assets are these assets acquired by the organizations over time. Examples of built-in marketing assets are the organization name and image, which may drive customers' purchasing decisions, satisfaction levels, and improved loyalty (Falahati et al., 2013). Therefore, investments in developing

an organization's name and brand image should undeniably influence its competitive situation in the market, thereby positively impacting its performance (Fang et al., 2010). The invested-in marketing assets refer to the assets expected to be developed through investments extended by the organizations. This concept is viewed as the existing assets receiving substantial investments or new assets being invested-in (Akroush & Al-Mohammad, 2010; Morgan, 2012). In other words, even though most of the assets must be built in the organizations, the continuous investment is needed to develop them to deal with the changes in the market environment (Akroush & Al-Mohammad, 2010).

Internal marketing capabilities are viewed as the internal processes associated with providing value-added products that meet competitive requirements. Internal marketing capabilities motivate functional integration, finances, strategic management, marketing management, and lasting operations management (Akroush, 2006). Internal marketing capabilities have a positive impact on bank performance. These capabilities provide organizational skills and distribute high-quality products and services that positively impact customer satisfaction, improve their loyalty, and improve performance (Akroush & Al-Mohammad, 2010; Morgan, 2012). External marketing capabilities are viewed as the external processes concerned with understanding the organization's external environment with all its factors. Examples of external marketing capabilities are opponents, customers, service suppliers, and distributors. The organizations must carry a comprehensive analysis of the macro-industry characteristics through analyzing and understanding the dimensions (Morgan, 2012).

FINTECH INNOVATION

Mansur et al. (2018) defined organizational innovation as the competitive advantage that can be obtained from qualified human resources; the marketing knowledge enables the organizations to compete, based on quality and innovation. Crossan and Apaydin (2010) argued that innovation is the "production or adoption, assimilation, and exploitation of value-added novelty in economic, social spheres; renewal and enlargement of products, services, and markets; development of new methods of production, and establishment of new management systems. It is both a process and an outcome." Organizations tend to expand their innovative actions to leverage their performance and profitability. Such expansion needs a different kind of strategies, such as managing the knowledge within the organization and using such knowledge in their different operations. In other words, innovation is associated with introducing new techniques, methods, techniques, or processes into the production chain to provide remarkable benefits and advantages to customers in terms of products and services (Oliva & Kotabe, 2019). When we talk about financial innovation in a broad sense, it is evident that it encompasses establishing new financial institutions, technologies, instruments and tools, processes, products, and services. Examples are online banking, phone banking, and different information and communication technology (ICT) applications (Edwards-Schachter, 2018). Gomber et al. (2017) argued that the term digital finance innovation includes a wide variety of innovative financial software programs business, products, and services, aiming at enabling customers to interact and communicate with financial institutions more quickly and efficiently. Something similar was stated by Korir et al. (2015). They indicated that Fintech innovation has to do with introducing new tools to be utilized by financial institutions to raise the level of effectiveness and efficiency of these institutions' services to their customers. According to Desai et al. (2019) Fintech is an innovative way to use technology in the design and delivery of financial services and it is transforming the banking world by bringing in artificial intelligence, big data, block chain, crowd funding, digital payments, and so on.

Fintech covers a wide range of financial fields. Examples are payments, remittances, savings and investments, personal financial management, trade, and invoice finance. Fintech innovative services can be made available to large firms, SMEs, and individuals. According to Klapper et al. (2016), Fintech innovation also encompasses diverse financial processes such as capital market activities, banking system connectivity; credit scoring, asset securitization, risk management, and trade processing. It also extends to cover other financial processes, like middle- and back-office reporting, customer service, collections, and recovery, as well as compliance with the so-called Anti-Money

Laundering-Know Your Customer (AML-KYC). It can be argued that financial institutions, particularly banks, have improved their performance and profitability, relying on financial innovations (Al-Dmour et al., 2020; Scott et al., 2017). Banking has witnessed a real revolution in performed financial transactions, as stated by Yin and Zhengzheng (2010), who found out that Chinese commercial banks have remarkably enhanced their financial operations by utilizing Fintech innovations. It was revealed that the Tunisian banking industry has benefited from the positive, significant relationship between return on assets and financial product innovations (Abir & Chokri, 2010). In this study, Fintech innovations can be grouped as new products, such as subprime mortgages or services, internet banking, and others. Fintech services (FS) are significant financial resolutions for cultivating financial inclusion (Akhisar et al., 2015; Buckley & Malady, 2015). Fintech innovation (FI) provides services to the underprivileged using advanced skills, digital platforms, and electronic money models (David-West et al., 2018; Nguena, 2019; Scott et al., 2017)

KNOWLEDGE MANAGEMENT, CORPORATE PERFORMANCE, AND FINTECH INNOVATION

The relationship between effective knowledge management and corporate performance has been tackled in the management literature (e.g., Faraji, 2011; Hou & Chien, 2010; Rezaee & Jafari, 2015). Some voices also advocate the need to manage these sorts of knowledge as part of excellent strategic awareness (Hou & Chien, 2010). The rationale behind this claim is that using knowledge as a significant strategic component provides companies with the capacity to reach better competitiveness and innovation (Torabi & El-Den, 2017). The literature shows that there was a gap in this regard or not being aware of the importance of knowledge management. For example, Torabi and El-Den (2017) investigate the organizational efforts to share tacit knowledge on the enhancements of organizational productivity. A survey instrument was administered to a sample of employees in the Koosa Bank of Iran. Their work results indicate that the bankers' intention to share tacit knowledge has a positive impact on teams' productivity. Also, this sharing improved innovation as a result of knowledge and experience exposure. Marketing knowledge management researchers agree that it plays an essential role in creating competitive advantage and better bank performance. The level of impact of innovation on bank performance differs according to the innovation type (Gunday et al., 2011), whether such innovation is done for a product, process, or marketing innovation. Furthermore, the impact of innovation may vary according to industry and the company size (Rezaee & Jafari, 2015; Rosenbusch et al., 2011). Different studies attempted to investigate the impact of innovation on bank performance. Inusa and Bambale (2017), for example, concluded that since change is inevitable, innovation facilitates the process of adaptation of this change by almost all organizations, including banks.

Rezaee and Jafari (2015) examined the relationship between MKM and sustainable competitive advantage for the banking industry. It was indicated that MKM implementation contributes significantly and positively to sustainable competitive advantage of the bank. Kheiri et al. (2012) examined the effect of marketing knowledge management on organizational performance and found that knowledge management marketing can improve organizational performance. Rezaee and Jafari (2015) examined the impact of marketing knowledge management on the Iranian banking industry's sustainable competitive advantage. They found that marketing knowledge management contributes significantly and positively to sustainable competitive advantage, which means that marketing knowledge management implementation can improve the sustainable competitive advantage of the bank.

Veismoradi et al. (2013) investigated the relationship between the banking industry's performance and marketing knowledge management assets and capabilities. They used the descriptive research method and found that there is a significant relationship between assets (skills of IT) and abilities (creativity, innovation, internal and external process) of marketing knowledge management and performance of Saderat Bank in the West of Iran. Falahati et al. (2013) conducted research that aimed at investigating the effect of marketing knowledge management on organizational performance of

Iranshahr Insurance of Kermanshah. The sample consisted of 82 employees in this company who answered items in a questionnaire. The research results showed that marketing knowledge management's assets and capabilities have a significant effect on general performance, market-related performance, customers' performance, and financial performance of the Iranshahr Insurance Company of Kermanshah. Morgan (2012) developed a model to connect marketing in general and bank performance. The research argues that managements need to pay attention and focus on the internal analysis of their marketing strategies in the same way they focus on the external factors. Managers use marketing tools and strategies geared toward researching the external environment and competitor, rather than adding the external factors within the organizations. Kheiri et al. (2011) were also motivated to evaluate the influence of marketing knowledge management on organizational performance. Therefore, they adopted a reliable questionnaire from previous studies and shared it with a random sample of 400 workers in pharmaceutical companies. The collected data was analyzed using Lisrel and SPSS, and the results indicate that the marketing knowledge management advantage improves the competitive edge, thus enhancing the organizational performance in the target sector.

In Iran and a sample of developing countries, Faraji (2011) argued that using knowledge management helps reduce errors and duplication and increases the speed of problem-solving and decision making, which will influence the cost and produce healthier relationships with customers. These conclusions were shaped based on comprehensive evaluating different views interested in marketing knowledge management. The study employed a valid questionnaire instrument and administrated it to one hundred and fifty managers working in Mellat bank; the decent response rate of 81.3% brought more reliability to the results. Hou and Chien (2010) examined the impact of market knowledge management competence on performance via the "dynamic capabilities" perspective among a sample of Taiwanese companies. The results showed that the dynamic capabilities have a definite effect on the marketing knowledge management competence, and marketing knowledge management competence has a positive impact on market performance and financial performance.

Tsai and Shih (2004) examined the impact of knowledge-based capabilities among managers on marketing capabilities and bank performance and found that they can impact on organizational performance. It has to be acknowledged that implementing MKM has been a matter of significance to an organization. Akroush and Al-Mohammad (2010) examined the effect of MKM on performance in the Jordan Telecommunication Company and showed that it could impact on the performance of this telecommunication company. Moustaghfir (2008) explained that organizational knowledge assets are significant for competitive advantage, and organizations should pay attention to their impact on their performance. It is believed that efficient management of the company's knowledge assets will play a significant role in shaping strategies that lead to better operations, products, and services delivery. Battor et al. (2008) examined knowledge-based capabilities and their impact on performance and showed that successful companies are configurations of management practices that enable the development of knowledge-based capabilities.

Several scholars have widely discussed the relationship between knowledge management and technological innovation (e.g., Kör & Maden, 2013; Talat, 2018; Waribugo et al., 2016). Most researchers have agreed that the innovation process depends heavily on the knowledge and the way of managing it. Today, knowledge management becomes an essential managerial task that helps organizations in shaping a sound innovation strategy. Knowledge management has been recognized as a tool to assist an organization in identifying gaps in knowledge and providing ways to fill these gaps to aid organizational innovation (Akram et al., 2011). Through knowledge management, managers can use pre-programmed models based on integrative knowledge of past experiences and ask for updated information while considering alternative solutions and stimulating innovative proposals. Alrubaiee et al. (2015) researched to develop a better understanding of the relationships between organizational performance, organizational innovation, and knowledge management processes in the context of the telecommunication and information technology industry in Amman. The research was exploratory and quantitative. The study results revealed a positive and robust impact of knowledge management

processes on organizational innovation and organizational performance. The study of Muthinja (2016) examined the relationship between financial innovation and financial performance of commercial banks in Kenya and the drivers of financial innovations at both firm and macro levels. The study's main objective is to establish a link between financial innovations usage and bank performance in Kenya. The study makes some other findings. Firstly, financial innovations significantly contribute to firm financial performance, and firm-specific factors are more critical to the firm's current financial performance than industry factors. Secondly, firm-specific variables significantly drive financial innovations at the firm level, with firm size being the most significant driver of financial innovation at the firm level. In a similar vein, Elseed and Elzain (2018) emphasized the relationship between financial innovation and banks' financial performance. The study found that the use of risk forecasting strategy contributes to raising the efficiency of the financial performance of banks and found that the use of options contracts contributes to raising the financial efficiency of the financial performance of banks.

RESEARCH MODEL

This study is based on investigating the relationship between marketing knowledge management (MKM) assets and capabilities components (built-in marketing assets, invested-in marketing assets, internal marketing capabilities, and external marketing capabilities; Akroush & Al-Mohammad, 2010; Muddaha et al., 2018) and bank performance via Fintech innovation as a mediating factor. This research is based on knowledge-based theory (Grant, 1996) and financial innovation theory (Silber, 1993). The knowledge-based theory assumes that knowledge, as an intangible asset resource, is an essential strength whose proper utilization could go a long way in offering long term sustainable competitiveness. An essential aspect of this theory is that the primary source of competitiveness is found within the application of knowledge and not just the possession of knowledge in itself. On the other hand, financial innovation theory viewed that improving corporate performance is critical for financial institutions to engage in Fintech innovation through the efficiency of delivery service (Siber, 1993). Innovation harnesses the ICT capabilities to create new banking services and new media for offering service. Theoretical background and knowledge-based theory and the relevant literature on marketing knowledge management, bank performance, and Fintech innovation were reviewed and integrated to develop a model to guide this study. The research model illustrated is proposed to validate and to examine the relations between research variables: independent variables marketing (components of marketing knowledge management: built-in marketing assets; invested-in marketing assets; internal marketing capabilities, and external marketing capabilities), dependent variable (bank performance), and the mediating variable (Fintech innovation). These hypothetical relationships are diagrammed in Figure 1.

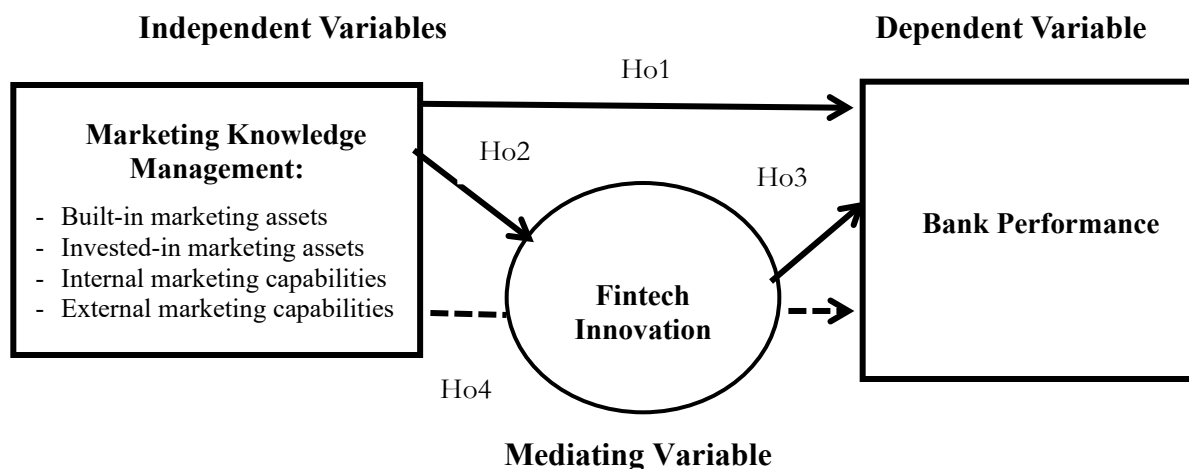


Figure 1. Study Model

Based upon the above model and the study questions, the following hypotheses are suggested:

Ho1: The marketing knowledge management assets and capabilities have significant influence on bank performance in Jordanian commercial banks.

Ho2: The marketing knowledge management assets and capabilities have significant influence on Fintech innovation in Jordanian commercial banks.

Ho3: Fintech innovation has significant influence on bank performance in Jordanian commercial banks.

Ho4: Fintech innovation is significantly mediating the relationship between marketing knowledge management and bank performance in Jordanian commercial banks.

METHODOLOGY

SAMPLE AND DATA COLLECTION PROCEDURE

The research employs a quantitative method with an exploratory and descriptive design. To confirm the research's conceptual model and to investigate the research hypotheses, a survey questionnaire was employed to collect the data. The target population consisted of all Jordanian commercial banks registered at the Association of Banks in Jordan up to 2019. 13 of those commercial banks agreed to participate in this study. The participants in this research were specified as all the marketing managers at banks' headquarters and branch managers working for those banks. The rationale for choosing these managers is that they have the necessary knowledge to provide answers and are in the best position to complete the questionnaires. The researchers distributed a total of 602 surveys using both online and paper-based questionnaires. The number of the returned instruments was 492, and after eliminating any in completed or improperly filled questionnaires, the valid usable questionnaires for further analysis were 336 (55.8% of the total), which is the decent rate in comparison with the lengthy approvals and authorization process to distribute and share the survey to the targeted bankers (Saleh & Bista, 2017).

The questionnaire's content (measures) was mainly selected and adopted from relevant previous studies. The independent variables (components of marketing knowledge management) were measured using a 5-point scale developed by Akroush and Al-Mohammad (2010), Davoudi et al. (2018), and Prifti and Alimehmeti (2017). The dependent variable (bank performance) was measured using a 5-point scale developed by Al-Dmour et al. (2020) and Byukusenge et al. (2016), and the mediating variable was measured using a 5-point scale developed by Girniene (2013), Leon and Bolisani (2016), Kör and Maden (2013), and Al-Dmour, et al. (2020). Table 1 summarizes these constructs and their related items measures. For construct validation, the questionnaire content was modified to the practice of Jordanian business culture context based on the results of a pilot study and feedback from five professional academic staff members in this field.

Table 1. Variables and measurement items

Variables	Code	Measurement Items
Marketing Knowledge Management (MKM)		
Built-in marketing assets (BMA):	BMA1	Developing new banking products
<u>Investing in</u>	BMA2	We are developing customer service quality.
	BMA3	Developing Customer service relationship
	BMA4	We are building a sharp brand image of the bank.
	BMA5	We are developing bank promotion and customer education.
	BMA6	Improving the banking channel of distribution
	BMA7	Building employees' skills, capabilities, and knowledge.

Variables	Code	Measurement Items
Invested-in marketing assets (IMS): Distinctive bank's ability	BMA8	We are building technological abilities.
	IMS1	Strategic marketing planning.
	IMS2	Market segmentation.
	IMS3	Building reputation or image.
	IMS4	Services quality.
	IMS5	Technological processes.
	IMS6	Services delivery process activities.
	IMS7	Market place and customer knowledge.
Internal marketing capabilities(IMC): Bank capabilities	IMS8	Serving customers and handle their complaints.
	IMC1	Integrated marketing programs
	IMC2	Innovating and develop new banking services
	IMC3	Superior pricing capabilities
	IMC4	Marketing communications capabilities
	IMC5	Distribution capabilities
	IMC6	Superior skills, abilities, and knowledge of marketing and technical specialists
External marketing capabilities (EMC): Capabilities	IMC7	Superior financial and human resources and capabilities
	EMC1	Understanding of the customer wants and needs
	EMC2	Creating, sustaining, and enhancing relationships with the firm's customers, financial institutions, ...etc.
	EMC3	Conducting a comprehensive analysis of the external business environment
	EMC4	Analyze information to anticipate market requirements
	EMC5	We are matching the bank's unique competencies with external opportunities in the marketplace.
	EMC6	Identifying the strategic leader activities
Bank Performance (BP)		
Financial and non-Financial Performance	BFP1	Return on investment compared with our competitors.
	BFP2	Bank's profitability compared with our competitors
	EFP3	Bank's market share compared with our competitors
	EFP4	Bank's financial assets, e.g., stock prices
	ENP5	Bank's non-financial assets, e.g., customer service
	BNP6	Improving customer satisfaction
	BNP8	Improving customer loyalty to our bank
	BNP8	Attracting new customers within a specified period
	BNP9	Improve the bank's image or reputation in the marketplace
Fintech Innovation (FI)		
	FI1	We are releasing new Fintech innovations (product or service) regularly.
	FI2	We are adapting existing Fintech innovations to meet specific customer requirements.
	FI3	We are investing heavily in Fintech innovations.
	FI4	Be a leader in Fintech innovation.

Variables	Code	Measurement Items
	FI5	We are systematically monitoring technology development trends.
	FI6	We are considering the firm's long development strategy and core technology level when introducing external technologies.
	FI17	The connection between technology strategy and business strategy
	FI18	Centralizing resources on innovation activity quickly

RESPONDENTS DEMOGRAPHIC PROFILE

In this study, 57% of the respondents were male and 33% in the age group between 40 and 49 years and in terms of their education, about 75% of the respondents have bachelor's degree, while 39% of them have an experience of fewer than ten years and about 47% of them were acting as divisional/branch level managers in Jordanian's commercial banks. Table (2) summarizes the demographic characteristics of the respondents.

Table 2. The demographic characteristics of the respondents

Characteristics	Category	Frequency	Per cent
Age	24- 29 years	84	0.25
	30-39 years	95	0.28
	40-49 years	110	0.33
	50 years and above	47	0.14
Sex	Male	193	0.57
	Female	143	0.43
Education	Secondary and /or diploma	27	0.08
	Bachelor's degree	254	0.75
	Graduate degree (MA or PhD)	57	0.17
Experience	Less than 10 years	132	0.39
	11-15 years	121	0.36
	16 years and above	83	0.25
Position	Divisional /branch manager/	157	0.47
	Head of department/executive	99	0.29
	Chief officer/lower level	80	0.24

DESCRIPTIVE ANALYSIS

In order to illustrate the extent of the significance of variables to the sampled respondents, the mean, standard deviation, and level of importance, skewness, and kurtosis were calculated for all the measurements. The descriptive statistics offered in Table 3 pointed to a positive disposition towards the items measured. The mean values indicate a narrow spread around the mean. The mean values of the majority items were greater than the midpoint (3) and ranged from 4.11 to 4.38. The level of every item was calculated by the follow method: (highest point in Likert scale - lowest point in Likert scale) / the number of the levels used = $(5-1) / 5 = 0.80$, where (1-1.80) reflected by "very low", (1.81-2.60) reflected by "low", (2.61-3.40) reflected by "moderate", (3.41-4.20) reflected by "high", and (4.21-5) reflected by "very high".

Table 3. The mean and standard deviation for constructs

Constructs	Mean	Standard Deviation	Level of importance	Skewness	Kurtosis
Marketing Knowledge Management	4.34	0.534	86.8%	-1.697	5.661
Built-in marketing assets	4.38	0.591	87.6%	-1.806	5.090
Invested-in marketing assets	4.34	0.575	86.8%	-1.774	5.280
Internal marketing capabilities	4.32	0.572	86.4%	-1.501	4.682
External marketing capabilities	4.33	0.611	86.6%	-1.402	3.364
Bank performance	4.32	0.588	86.4%	-1.376	2.996
Financial measures	4.30	0.648	86%	-1.238	2.241
Non-Financial measures	4.33	0.599	86.6%	-1.271	2.320
Fintech innovation	4.11	0.551	82.0%	-1.565	4.631

After that, the items were ordered by their means (Pallant, 2005; Sekaran & Bougie, 2013). For the normality test, after careful assessment using skewness and kurtosis, the data were normally distributed. Indeed, skewness and kurtosis were normally distributed since most of the values were inside the adequate ranges for normality (i.e., -1.0 to +1.0) for skewness, and less than 10 for kurtosis (Hair et al., 2010).

DATA ANALYSIS

This study applies the structural equation modeling (SEM) technique to test the proposed relations between the constructs in the model (Hooper et al., 2008). A two-stage SEM (measurement model and structural model) was employed to analyze the empirical data. The model fitness and constructs' reliability and validity were assessed by running AMOS21.

THE EXPLORATORY FACTOR ANALYSIS (EFA)

Exploratory Factor Analysis is often used to gather information regarding the research's interrelationships and to reduce the large number of variables (Pallant, 2007) that underlie constructs into orthogonal (uncorrelated) indices; this enables further analysis by regression. It is also considered an appropriate method to overcome multicollinearity's potential problems among the variables that pertain to each construct. The results indicate that the variance inflation factor for each variable was below 3, suggesting that multicollinearity was not a problem for further analysis. The findings also indicate the absence of common method bias in that the first factor did not account for the majority of the variance, and no single factor occurred from the factor analysis (Podsakoff et al., 2003).

The outcome of the Kaiser-Meyer-Olkin (KMO) test was 0.914, and all items were higher than 0.60; consequently, all items were used in the data analysis to capture the investigated latent variables. The Bartlett's test of Sphericity checks the extents of homogeneity of the variances by comparing the identity matrix to the correlation matrix to summarize the factors into one factor. Its value must be statistically significant (Hair et al., 2011). The results in Table 5 indicate that the items are loaded into one latent factor, the factor loading values are more than 0.4 as well, which means that none of the factors (items) will be deleted. The KMO values of all dimensions are higher than the accepted value of 0.800; its results are significant, indicating sample adequacy. The Bartlett's test of Sphericity is significant (p -value = 0.000), indicating a homogeneity among the variances. Therefore, the instrument is of apparent validity.

CONFIRMATORY FACTOR ANALYSIS

CFA is the step after the EFA to check the factor structure of any dataset. EFA explores how variables can be grouped (factor structure), and the CFA factor confirms the structure. Bagozzi and Yi (1988) and Hair et al. (2006) discussed that the measurement model shows how latent variables or hypothetical variables are evaluated in the conditions of observed variables and represents the validity and reliability of the observed variables answers for the latent variables. The CFA has many fit indices; Table 4 summarizes them and shows the cut off points (Hair et al., 2011). Confirmatory factor analysis was performed to confirm the properties of the research items.

Table 4. CFA Index summary

Criteria	MKM	Performance	Innovation
GFI	0.860	0.810	0.850
CFI	0.969	0.971	0.961
NFI	0.868	0.951	0.850
RMSEA	0.056	0.030	0.017
χ^2/df	2.097	2.599	2.353
(χ^2)	812.932	339.422	799.045
Sig	0,00	0.00	0.00
DF	399	134	347

The initial CFA model provided an acceptable fit without eliminating any items to achieve an enhanced fitting measurement model; Table 4 demonstrates the goodness of fit indices in evaluating the initial research model. Thus, the findings of the initial model deemed as the final model. CFA showed that the value of chi-square (χ^2) is (812.932, 339.422, and 799.045), and all values are significant at ($\alpha \leq 0.05$), which implied that the measurement model fitted the data. **GFI** reflects the harmonization of quality, the GFI optimal value > 0.90 , the initial values of this model are (0.860, 0.810, and 0.850) as close values to the optimal value; this means acceptable model (Taasoobshirazi and Wang, 2016). **RMSEA**: it is the mean square root of the covariance residuals; its optimal value is less than 0.08, which is the case of this model. **NFI** values are between (0-1); the NFI values are 0.868, .951, and .850; this means that the model improves the fit by the NFI values. The values in the model reflect significant improvements. The regression weights for all variables are significant.

To determine the reliability and validity of the research model, factor loadings, Cronbach alpha, composite reliability, and Average Variance Extracted (AVE) for the variables were calculated (Table 5). The entire research indicator (i.e., factor loadings) surpassed 0.50 (Bagozzi & Yi, 1988); hence, it represented confirmation of convergent validity. All of the composite reliability values surpassed 0.60, representing a high internal consistency for the latent variables. Also, as each AVE value surpassed 0.50 (Hair et al., 2006), the convergent validity was proved.

Table 5. Properties of the final measurement model

Variables & Items	Factor Loadings		Cronbach Alpha	Composite Reliability*	AVE**
	EFA	CFA			
BMA			0.760	0.88	0.91
BMA1	0.658	0.681			
BMA2	0.645	0.664			
BMA3	0.712	0.721			
BMA4	0.739	0.741			
BMA5	0.707	0.732			
BMA6	0.744	0.765			
BMA7	0.663	0.681			
BMA8	0.719	0.733			
IMS			0.831	0.92	0.93
IMS1	0.699	0.722			
IMS2	0.645	0.676			
IMS3	0.709	0.712			
IMS4	0.680	0.687			
IMS5	0.764	0.771			
IMS6	0.805	0.821			
IMS7	0.749	0.754			
IMS8	0.730	0.775			
IMC			0.856	0.91	0.92
IMC1	0.704	0.712			
IMC2	0.741	0.743			
IMC3	0.729	0.731			
IMC4	0.585	0.604			
IMC5	0.740	0.765			
IMC6	0.721	0.732			
IMC7	0.707	0.712			
EMC			0.894	0.938	0.94
EMC1	0.697	0.701			
EMC2	0.757	0.762			
EMC3	0.808	0.821			
EMC4	0.778	0.781			
EMC5	0.715	0.721			
EMC6	0.619	0.621			
BP			0.845	0.890	0.91
BP1	0.734	0.744			
BP2	0.823	0.753			
BP3	0.739	0.741			
BP4	0.670	0.681			
BP5	0.629	0.631			
BP6	0.795	0.801			
BP7	0.734	0.741			
BP8	0.737	0.738			

Variables & Items	Factor Loadings		Cronbach Alpha	Composite Reliability*	AVE**
BP9	0.654	0.666			
FI			0.87	0.88	0.92
FI1	0.757	0.767			
FI2	0.688	0.689			
FI3	0.680	0.690			
FI4	0.718	0.721			
FI5	0.735	0.736			
FI6	0.760	0.770			
FI7	0.777	0.781			
FI8	0.752	0.761			

HYPOTHESES TESTING

As pointed out in Table 6, the SEM analysis showed that H1, H2, H3 are supported with ($\beta_1 = 0.811$, $t_1 = 63.127$, $p_1 = 0.000$; $\beta_2 = 0.715$, $t_2 = 37.096$, $p_2 = 0.000$; $\beta_3 = 0.565$, $t_3 = 22.138$, $p_3 = 0.000$) respectively.

Table 6. Path analysis results

Hypotheses	Path	Standardized effect	Robust t-value	Result
H₁	MKM →DFI	0.811***	63.127	Supported
H₂	DFI→BP	0.715***	37.096	Supported
H₃	MKM→BP	0.565***	22.138	Supported

Notes: *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$ MKM:
Marketing knowledge Management, DFI: Fintech Innovation, BP: Bank performance.

In order to explore the mediating effects of DFI on the impact of MKM on DFI, the study examined both the direct and indirect effects via the mediatory path. It was found that DFI affected BP significantly both directly ($\alpha=0.169$ for H₄) and indirectly ($\alpha_5=0.565$), resulting in a total effect size of $\alpha_5=0.724$ for H₄ and (see Table 7), as a result, the data is supporting partial mediations.

Table 7. Mediating effect

Hypothesis	From	Mediation	To	Direct Effect	Indirect Effect	Total Effect
H₄	MKM	DFI	BP	0.169	0.565	0.724

Further, to investigate the structural model, path analysis was conducted. We examined the research hypotheses via the statistical significance of the standardized regression weights (i.e., t-value) (Table 7) and the coefficient of determination R^2 for the endogenous research variables. The coefficient of determination for DFI and BP were 0.72, and 0.55, respectively, which shows that the model does actively account for the variation of the research model.

CONCLUSIONS AND FINDINGS

This study aimed to examine the effect of marketing knowledge management assets and capabilities on bank performance through Fintech innovation as a mediating factor in Jordanian commercial banks. To achieve the study objectives and conduct the research using a systematic approach, a conceptual framework was developed based on a literature review and knowledge-based theory (Grant, 1996) and financial innovation theory (Silber, 1993). The data was collected from 336 senior

managers and employees in all Jordanian commercial banks using online and in hand instruments. Structural equation modeling (SEM) was used to analyze and verify the study variables. The analysis provides empirical evidence regarding the effect of marketing knowledge management on Fintech innovation and bank performance hypotheses H₁, hypothesis H₂, and H₃ sequentially. These three hypotheses are significantly and positively supported the linkage between marketing knowledge management and Fintech innovation and bank performance. Numerous research studies have explored the relationship between marketing knowledge management and Fintech innovation, such as Al-rubaiee et al. (2015), Byukusenge et al. (2016), Kör and Maden (2013), Rezaee and Jafari (2015), Nawab et al. (2015), and Nowacki, and Bachnik (2016). In today's 'banking industry environment, which is characterized by rapid and continuous changes, empirically analyzing knowledge management and innovation concepts is critical because of the importance of these concepts in creating competitive advantages. The findings showed a positive and significant impact of marketing knowledge management assets and capabilities on bank performance. These findings support the literature (e.g., Akorash, 2006; Morgan, 2012). For example, Veismoradi et al. (2013) found a significant relationship between marketing assets and the abilities and performance of Saderat Bank in the West of Iran. Also, Falahati et al. (2013) showed that marketing knowledge management's assets and capabilities have a significant effect on general performance, market-related performance, customers' performance, and finances.

The fourth hypothesis (H₄) was developed to determine whether there was a mediating effect of Fintech innovation on the relationship marketing knowledge management (assets and capabilities) on bank performance. The results showed clearly that Fintech innovation mediated the effect of relationship marketing knowledge management on bank performance, but the mediating effect was partial. Besides, the results indicated a significant and positive indirect effect of marketing knowledge management use on bank performance through Fintech innovation with a standardized indirect effect of 0.565 at a p-value of 0.000 ($p < 0.001$). The results showed a significant and statistical effect of marketing knowledge management on bank performance without the mediating effect of Fintech innovation. The total standardized effect was 0.169, which was significant at $p\text{-value} = 0.000$, but it is weak. This discussion shows that the standardized direct effects between marketing knowledge management and bank performance with Fintech innovation as mediators increased to 0.724 and that the standardized direct effect of the same relationship in the absence of mediators was (0.169) indicated that the mediation was partial. Thus, this result supported hypothesis H₄.

Moreover, the indirect effect between marketing knowledge management and bank performance through Fintech innovation as a mediator was positive and significant, with a standardized indirect effect at a p-value of 0.000 ($p < 0.001$). The mediating effect of Fintech innovation between marketing knowledge management and bank performance may, therefore, be a new relationship. The results indicated that marketing knowledge management had a significant and direct positive effect on bank performance. Marketing knowledge management also had a direct effect on Fintech innovation, and this effect was also significant, as was the effect of Fintech innovation on bank performance. However, no previous empirical research studies have examined the mediating effect of Fintech innovation on the relationship between marketing knowledge management and bank performance.

The findings confirm that Fintech innovation has a vital mediation effect on the relationship between marketing knowledge management assets and capabilities and bank performance, and the degree of mediation was partial. Therefore, hypothesis H₄ was supported. Furthermore, the main statistical results also supported the predictive validity of the study's conceptual model. Overall, the study validated marketing knowledge management assets and capabilities to improve bank performance through Fintech innovation. Therefore, it is concluded that marketing knowledge management is closely related to Fintech innovation and bank performance. In contribution, this study fills the gap within the literature regarding a comprehensive understanding of the relationships between marketing knowledge management (assets and capabilities), Fintech innovation, and bank performance. Besides, the study contributes to the literature and knowledge-based theory and a radical innovation

theory by empirically analyzing the relationship between knowledge management functions and Fintech innovation. Through managing knowledge effectively, commercial banks can improve Fintech innovation. Therefore, marketing knowledge management (MKM) assets and capabilities (built-in marketing assets, invested-in marketing assets, internal marketing capabilities, and external marketing capabilities) should be considered as means for enhancing product/service innovations and bank performance.

This study also significantly contributes to supporting knowledge-based theory, a resource-based view, financial innovation theory by supporting the links marketing knowledge management (assets and capabilities) and bank performance via the mediating role of Fintech innovation. The present study provides many theoretical contributions to the literature on marketing knowledge management on business Fintech innovation and performance, one of which is to validate the research framework applied in Jordan. Through managing knowledge effectively, commercial banks can improve bank performances through Fintech innovation. Therefore, marketing knowledge management (assets & capabilities) has been considered an effective means of enhancing bank performance through Fintech innovation. The results endorse the mediating effect of Fintech innovation on the relationship between the independent variable, marketing knowledge management (assets and capabilities), and the dependent variable bank performance, which is another gap addressed by this research. Furthermore, this study has extended the literature that considers marketing knowledge management (assets and capabilities), by providing the following:

First, the structural path analysis provided empirical support for all four proposed hypotheses in this study, explaining and verifying the unexplored path between managing marketing knowledge (assets & capabilities) and bank performance via Fintech innovation. Previous research examined and linked marketing knowledge management with bank performance and between marketing knowledge management and Fintech innovation. These findings are of particular importance since they underline the validity of the proposed constructs of MKM, which envisaged marketing capabilities as the processes under which marketing assets are utilized to achieve better organizational performance.

Second, it validates and tests the impact of Fintech innovation as a mediating factor between marketing knowledge management (assets and capabilities) and bank performance, which can be considered another contribution to the literature.

In practice, the relationships among the constructs provide managerial implications for the need to strengthen marketing knowledge assets and capabilities to enhance financial innovation and bank performance in commercial banks. Marketing knowledge management is seen as essential to increasing innovation and, as a result, bank performance. Therefore, marketing managers of commercial banks in Jordan should understand and focus on their available marketing assets and capabilities as significant components of any effort to manage such a critical knowledge scope. They should also use and manage their knowledge marketing management assets and capabilities more efficiently and be more technologically innovative, improving its performance. Marketing knowledge management (MKM) assets and capabilities should be fully integrated and combined to enhance Fintech innovation and bank performance in commercial banks. The managers of commercial banks should improve marketing knowledge assets and capabilities in their organizations. They should apply intellectual capital development and knowledge dissemination to a greater extent because of their strong influence on Fintech innovation. The managers of commercial banks of Jordan should integrate and fully utilize knowledge management in order to develop and enhance the effectiveness of Fintech innovation in their organizations. Hence, managers in commercial banks need to recognize the importance of effective knowledge management practices in an arrangement in order to enhance their level of Fintech innovations. They need to focus on their available marketing assets and capabilities as major components of any effort to manage such an important scope of knowledge to enhance their bank performance through innovations.

Furthermore, in similar countries, the commercial banking sector can use this study to understand better the practices of knowledge management in banks and the skills acquired or existing in the individuals working in the organization and is also helpful in cultivating a knowledge-oriented environment. They should consider promoting a culture of practicing knowledge management processes among their managers and employees by motivating and training to promote innovations.

LIMITATIONS

Although this study has achieved its objectives, the authors of this article recognize that this study has its limitations: First, the generalizability of this study's findings is limited to the banking sector in Jordan. Second, the researchers have used the cross-sectional surveys, where all data are collected in a particular period, and analysis is restricted to this specified period.

FUTURE STUDIES

Future research should use other financial service sectors (e.g., insurance, real estate services, telecommunication, and hospitality) in order to validate and generalize the study's model in Jordan and other developing and developed countries. Future research also can use a longitudinal survey where data are gathered over a longer time period. Finally, it would be of interest to include other variables in the model that can act as consequences of MKM capabilities, such as financial and non-financial performance measures.

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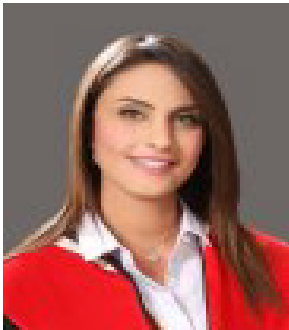
BIOGRAPHIES



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