



WWJMRD 2022; 8(01): 91-95  
www.wwjmr.com  
International Journal  
Peer Reviewed Journal  
Refereed Journal  
Indexed Journal  
Impact Factor SJIF 2017:  
5.182 2018: 5.51, (ISI) 2020-  
2021: 1.361  
E-ISSN: 2454-6615  
DOI: 10.17605/OSF.IO/NMKVH

**Baha Aldeen Mohammad  
Fraihat**

First author, Assistant  
Professor, Faculty of Business,  
Jerash University, Jerash,  
Jordan.

**Mohammad Abdel Mohsen Al-  
Afeef**

Associate Professor, Faculty of  
Business, Jerash University,  
Jerash, Jordan.

**Correspondence:**

**Mohammad Abdel Mohsen Al-  
Afeef**

Associate Professor, Faculty of  
Business, Jerash University,  
Jerash, Jordan.

## **The Moderating Effect of Financial Technology (Fintech) Innovation between Knowledge Management Infrastructure and Institutions Performance**

**Baha Aldeen Mohammad Fraihat, Mohammad Abdel Mohsen Al-Afeef**

### **Abstract**

The study aimed to investigate the impact of Knowledge Management infrastructure (KMI) on the institution's performance of the financial institutions in Jordan. In addition, examined the moderating role of (Fintech Innovation) in the effect of Knowledge Management infrastructures (KMI) on the institution's performance of the financial institutions in Jordan. This study is a Quantitative based cross-sectional designs research, conducted by using an online questionnaire. The study uses purposive sampling accordingly this research is only interested in the institutions which are implemented or using Knowledge Management practices or Fintech Innovation. The data was analyzed using Partial Least Square (PLS), the findings indicate that Knowledge Management infrastructure and its components have significant effects on IP, financial technology Innovation moderates the effect of BMI on IP.

**Keywords:** Innovation, (Fintech, Knowledge Management, infrastructure (KMI), Institutions Performance (IP).

### **1. Introduction**

Institutions ability to effectively adjust to changing environments will be greater when it has a well-developed knowledge management capability (Collins, Worthington, Reyes & Romero, 2010). Researchers, practitioners, and policymakers emphasized the important role of KM for Institutions and countries (Schniederjans, Curado & Khalajhedayati, 2020). Countries around the world are emphasizing the importance to move to a knowledge-based economy and they related the paradigm shift to increase the income of the nation and achieve the status of the developed nation (Schniederjans, Curado & Khalajhedayati, 2020; Shin & Nordtvedt, 2020). In a similar vein, the notion of linking the knowledge to the operational cost and the profitability of the organizations (Shin & Nordtvedt, 2020).

Jordan is one of the developing countries and it has been exposed to major performance reduction due to the instability in the region of Middle East as the Arab Spring in 2011 which refer the refugees from Syria and other Arab countries to Jordan, At the fiscal level, the global Financial crisis of (2008)

and the pandemic of COVID-19 in (2019) is exacerbating the fiscal deficit in Jordan, regarding the World Bank, economic activity in the Middle East was expected to decrease by more than 4 % in 2020 (World Bank, 2020), and specifically, the central bank of Jordan mentions that the growth rate of GDP was (-1.5 % in 2020), therefore, it expected long term impact on the Jordanian economy, which leads Jordanian Institutions setting up a complete long and medium-term financial recovery to address the results of the COVID-19 crisis on Institutions (Central Bank of Jordan, 2020).

While the growth of Gross Domestic Product (GDP) of Jordan in May 2021 is (-1.60 %) (Trading Economics, 2021) The Specialized financial institutions in Jordan are considered as the largest institutions which play an important role in the economy by providing financing

and technical support to small and medium economic projects as well as its contribution to the economic growth and the GDP and the employment rate (Jordan Bank Association, 2020).

The knowledge-based view theory by Grant (1996) pointed out that in order for institutions to have superior performance and competitive advantage, they have to master the management of their own knowledge. Thus, Fintech is a new creative financial industry method that applies innovation and the ICT to develop financial functions also fintech can be defined as any creative functions led to developing the financial service by proposing innovation arrangements as per different business circumstances (Leong & Sung, 2018). Advances in electronic finance and versatile technology for financial institutions This improvement were portrayed by integration in electronic finance, Internet technology, social networking services, social media, artificial intelligence, and big analytic data, these difficulties numerous conventional traditional financial institutions, like banks, to foster their plans of action a more reasonable way (Ashta & Paquerot, 2018). Moreover, new businesses considered this to be a chance to enter the financial innovation services

industry (Suryono, Purwandari & Budi, 2019). Fintech is quite possibly the main advancement in the financial innovation services industry and is driven by monetary sharing, guidelines, strategy, and data innovation. Like banks, the plan of action of fintech likewise centers on installment and credit administrations. Also, it incorporates individual financial counseling administrations, virtual monetary forms, and security (Suryono, Budi, & Purwandari, 2020).

## 2. Material and Methods

The research employs a quantitative method as well as a survey questionnaire was employed to collect the data, thus the sample of this research is the financial institutions in Jordan which include banks, foreign exchange markets, and orange money, and Zain personal wallet, thus purposive sampling techniques were used. Accordingly, this research is only interested in the institutions which are implemented or using KM.

Figure (1) shows the Conceptual Framework and the variables of the study:

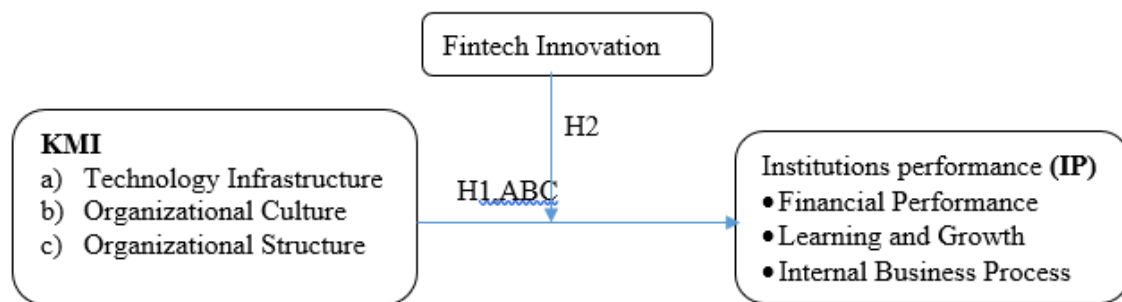


Fig. 1: Conceptual Framework.

## 3. Development of propositions

Based on the literature of the knowledge-based view theory which proposed that knowledge, as an intangible asset resource, is an essential strength whose proper utilization should move a protracted way in supplying a long-time sustainable competitiveness. A crucial thing of this principle is that the primary supply of competitiveness is located within the application of information and now not simply the possession of information in itself, and regarding the financial innovation theory the improving of overall Institutions performance is critical for financial establishments to interact in Fintech innovation via the efficiency of shipping service, Innovation harnesses the Technology skills to create new financial services and new media for supplying carrier. Thus, the conceptual framework of this study, have direct effect propositions and moderating propositions; these hypothetical relationships are:

**H1:** KMI has a significant effect on the IP.

**H1a:** Technology infrastructure has a significant effect on IP.

**H1b:** Organizational culture has a significant effect on IP.

**H1c:** Organizational structure has a significant effect on IP.

Regarding the financial innovation theory improving Institutions, performance leads to revolve the financial institutions to attract with Fintech Innovation in turn to

improve the service efficiency (Siber, 1983). Thus Fintech Innovation needs information communication technology capabilities to empower the role of services in financial institutions. Fintech Innovation led the attempt to make changes and leads the institutions to achieve its visions (Elseed & Elzain, 2018; Muthinja, 2016; Obay, 2000). While several researchers noted the relationship between KMI and Fintech innovation (Kör & Maden, 2013; Waribugo, Ofoegbu & Akpan 2016; Talat, 2018), However, researchers found that Fintech innovation upon closely on KMC, a study of telecommunication industry in Amman investigated the relationship between Fintech innovations and KM the study found a positive impact of KM on Fintech innovations (Alrubaiee, Alzubi & Hanandeh, 2015). On the other side, previous studies instigate the relation between Fintech innovation and institutions' performance. A study done by Muthinja (2016) explore the relationship between financial innovation and financial performance found a positive impact of Fintech innovation on financial performance, as well as this impact is more critical on financial institutions than industry institutions. Also, a study by Elseed and Elzain (2018) explored the relation between Fintech innovation and banks performance, thus the study notes that using forecasting strategy and options contracts as factors of Fintech innovation will lead to improve the banks performance. Accordingly, this study proposed that:

**H2:** Fintech innovation moderates the effect of KMI on the IP.

#### 4. Result

##### 4.1 Background information of the respondents

A total of 319 respondents have participated in this study. Thus 65% of the respondents were male and 45% in the age group between 40 to 49 years old and holders of bachelor degree (70.5%) with experience more than 10 years (70%).

##### 4.2 Measurement Model

Table (1) shows the result of measurement model. It shows that all the factor loading greater than 0.70 as well as the Cronbach's Alpha (CA) and Composite reliability (CR) are greater than 0.70. The AVE must be greater than 0.50.

**Table 1:** Result of Measurement Model

Construct	Variable	Item	FL >0.70	CA > 0.70	CR >0.70	AVE > 0.50
KMI	Organizational culture	OC1-OC8	0.882-0.897	0.962	0.968	0.789
	Organizational structure	OS1-OS6	0.826-0.909	0.942	0.954	0.775
	Technology infrastructure	TI1-TI8	0.834-0.875	0.946	0.955	0.725
FI	Fintech innovation	FI1-FI5	0.807-0.874	0.971	0.973	0.710
IP	Financial performance	FP1-FP4	0.914-0.935	0.944	0.960	0.857
	Internal business process	IBP1-IBP4	0.935-0.947	0.956	0.968	0.883
	Learning and growth	LG1-LG5	0.883-0.923	0.947	0.960	0.826

##### 5. Structural Model

Researchers pointed out that there are four criteria to evaluate the structural model. These are the R-square (R<sup>2</sup>), the predictive relevance (Q<sup>2</sup>), path coefficient ( $\beta$ ), and effect size (F<sup>2</sup>). In this study, the findings of the structural model showed the R<sup>2</sup> of each model. It shows that the direct effect model has an R<sup>2</sup> of 0.77, which is considered substantial. For the moderating effect of FI, the R<sup>2</sup> is 0.83. A blindfolding analysis was used to obtain the Q<sup>2</sup>. The findings indicated that the value of Q<sup>2</sup> is greater than zero for all models. Thus, the values present an acceptable cross-validated redundancy. The effect size for each path model can be determined by calculating Cohen's f<sup>2</sup> and can determine such that 0.02, 0.15, and 0.35 represent small, medium, and large effects, respectively (Cohen, 1988). In

Smart PLS, the value of f<sup>2</sup> is given in the outcome of the analysis as well as all the effect sizes are acceptable

##### 5.1 Hypotheses Testing

This study has developed direct and moderating hypotheses. In this section, the results of hypotheses are discussed.

##### 5.2 Direct Effect Hypotheses

In this study, four direct hypotheses were proposed. Table 2 shows the result of direct effect hypotheses testing. The table presents the hypothesis number (H), path, coefficient ( $\beta$ ), standard deviation (STDEV), T-values (T), P-values (P), and the remark.

**Table 2:** Effects of KMI on OP

H	Path	B	STDEV	T	P	Remark
H1	KMI-> IP	0.527	0.083	6.368	0.000	Supported
H1a	Technology infrastructure -> IP	0.221	0.054	4.117	0.000	supported
H1b	Organizational culture -> IP	0.130	0.062	2.105	0.035	Supported
H1c	Organizational Structure -> IP	0.111	0.047	2.348	0.019	Supported

The main hypothesis (H1) was supported ( $\beta=0.527$ ,  $P<0.05$ ). However, as shown in Table 2, for the three remaining sub-hypothesis of KMI (H1a, H1b, H1c), they were supported. Technology infrastructure is the most important components of KMI followed by organizational

culture and organizational structure respectively. Moderating Effect of Fintech innovation

Table 3 shows the result of hypotheses testing of the moderating effect of FI.

**Table 3:** Result of Moderating Effect of FI

H	Path	B	STDEV	T	P	Remark
	KMI -> IP	0.527	0.083	6.368	0.000	
H2	KMI *FI -> IP	0.189	0.092	2.066	0.039	supported

For the second main hypothesis (H2), the findings in Table 3 indicated that Fintech innovation moderated the effect between KMI and IP. The moderating effect (KMI \*FI -> IP) is significant ( $\beta= 0.189$ ,  $P\text{-value} < 0.05$ ). Thus, H2 is supported.

##### 6. Discussion and Conclusion

The findings of this study indicated that KMI has a direct

and significant effect on IP. The Technology infrastructure is the most important component followed by culture, structure. The findings also indicated that the moderating effect of FI was confirmed for the effect of KMI on IP.

Thus, the research hypotheses have positively supported the relationship between KMI and Fintech innovation and institutions' performance. The findings of similar studies agreed with this research findings, for example, Nawab,

Nazir, Zahid, & Fawad (2015), and Nowacki, and Bachnik (2016). KMI and Fintech innovation is important because these terminologies led to creating a competitive advantage. The findings showed a positive and significant impact of KMI on institutions' performance. Thus Falahati Jamshidi Navid, Khosravi, and Koolivand, (2013) found a link between knowledge management, performance, internal and external customers performance, and finances performance, as well as a study by Paais and Pattiruhu, (2020), found that organizational culture had a positive and significant impact on organizational performance, and this agreed with the component were used for measuring performance in this research as the Financial performance and non-Financial performance as Learning and growth and Internal business process. As well as improving the organizational structure, culture and Technology leads to improvement in IP (Bititci et al., 2015; Chang & Chuang, 2011; Mills and Smith, 2011). Technology infrastructure could not be itself helps the organization to improve its performance, but it could help indirectly the activities that lead to better IP as well as Fintech innovation is integrated with institutions Technology

The second hypothesis (H2) was developed to highlight the moderating role of Fintech innovation on the relationship between knowledge management infrastructure which includes (technology, culture, and structure) on financial institutions' performance. The results showed clearly that Fintech innovation moderated the effect between knowledge management infrastructure and institutions performance, thus this result supported hypothesis H2, However, no previous empirical research studies have examined the moderating role of Fintech innovation on the relationship between knowledge management infrastructure and bank performance. The findings confirm that Fintech innovation has a vital moderation effect on the relationship between knowledge management infrastructure and financial institutions' performance.

In conclusion, the Fintech innovation is close to KMI and institutions performance. In contribution, this study fills the gap within the literature and added a comprehensive meaning to the structure, culture, and Technology knowledge infrastructure, also to the Fintech innovation and the financial performance and non-financial performance as Learning and growth and Internal business process. In other words, if institutions controlling the knowledge infrastructure with highly efficient this will lead to improve the Fintech innovation. Therefore, KMI should be considered as means for enhancing product and service innovations and institutions' performance.

## Reference

- Ahmed, E. R., Abdul Rahim, N. F., Alabdullah, T. T. Y & Thottoli, M. M. An Examination of Social Media Role in Entrepreneurial Intention among Accounting Students: A SEM Study. *Journal of Modern Accounting and Auditing*, Vol. 15, no. 12, pp. 577-589, 2019.  
<https://doi.org/10.17265/1548-6583/2019.12.003>
- Alrubaiee, L., Alzubi, H. M., Hanandeh, R. E., & Al Ali, R. (2015). Investigating the relationship between knowledge management processes and organizational performance. The mediating effect of organizational innovation. *International Review of Management and Business Research*, 4 (1), 989-1009.
- Ashta, A., & Biot-Paquerot, G. (2018). FinTech evolution: Strategic value management issues in a fast-changing industry. *Strategic Change*, 27(4), 301-311.  
<https://doi.org/10.1002/jsc.2272>
- Bititci, U. S., Mendibil, K., Nudurupati, S., Turner, T., Garengo, P., & Turner, T. (2015). Dynamics of Performance Measurement and Organisational Culture. *International Journal of Operations & Production Management*, 26(12), 1325-1350.  
<https://doi.org/10.1108/01443570610710579>
- Central Bank of Jordan (2020)  
<https://www.cbj.gov.jo/Pages/viewpage.aspx?pageID=115>
- Chang, H. H., & Chuang, S. S. (2011). Social capital and individual motivations on knowledge sharing: Participant involvement as a moderator. *Information & management*, 48(1), 9-18.  
<https://doi.org/10.1016/j.im.2010.11.001>
- Cohen, J. (1988). The Effect Size index: d. In *Statistical Power Analysis for the Behavioral Sciences* (pp. 20-26).
- Cohen, J. F., & Olsen, K. (2015). Knowledge management capabilities and firm performance: A test of universalistic, contingency and complementarity perspectives. *Expert Systems with Applications*, 42(3), 1178-  
<https://doi.org/10.1016/j.eswa.2014.09.002>
- Collins, J. D., Worthington, W. J., Reyes, P. M., & Romero, M. (2010). Knowledge management, supply chain technologies, and firm performance. *Management Research Review*.  
<https://doi.org/10.1108/01409171011083969>
- Dayadhar, R.S. (2015), "Financial inclusiveness: the role of mobile money and digital financial services", *Socrates*, Vol. 3 No. 1, pp. 95-112.
- Donate, M. J., & Sánchez de Pablo, J. D. (2015). The role of knowledge-oriented leadership in knowledge management practices and innovation. *Journal of Business Research*, 68(2), 360-370.  
<https://doi.org/10.1016/j.jbusres.2014.06.022>
- Elseed, A. A. K., & Elzain, S. M. (2018), Role of financial innovation in increasing the efficiency of banks' financial performance. *International Journal of Business Management and Economic Review*, 2(1), 20-30
- Falahati, A., Jamshidi Navid, B., Khosravi, S., & Koolivand, P. (2013). Effect of marketing knowledge management on organizational performance: A Case study in Iran insurance of Kermanshah. *European Online Journal of Natural and Social Sciences*, 2(4), pp-609.
- Grant, R. (1996). Toward a knowledge-based theory of the firm. *Strategic Management Journal*, 17(S2), 109-122. <https://doi.org/10.1002/smj.4250171110>
- Jordan Bank Association. (2020). Association of banks in Jordan.  
<https://www.jordanfinancialservices.com/aboutsector/association-banks-Jordan>
- Kör, B., & Maden, C. (2013). The relationship between knowledge management and innovation in Turkish service and high-tech firms. *International Journal of Business and Social Science*, 4(4).
- Korir, M.C., Sang, W., Shisia, A. and Mutung'u, C. (2015), "Financial innovations and performance of commercial banks in Kenya", *International Journal of*

- Economics, Commerce and Management, Vol. 3 No. 5, pp. 1242-1265.
18. Leong, K., & Sung, A. (2018). FinTech (Financial Technology): what is it and how to use technologies to create business value in fintech way? *International Journal of Innovation, Management and Technology*, 9(2), 74-78.  
<https://doi.org/10.18178/ijimt.2018.9.2.791>
19. 27. Meher, J. R., & Mishra, R. K. (2019). Assessing the influence of knowledge management practices on organizational performance: an ISM approach. *VINE Journal of Information and Knowledge Management Systems*.  
<https://doi.org/10.1108/VJIKMS-04-2019-0050>
20. Mills, A. M., & Smith, T. A. (2011). Knowledge management and organizational performance: a decomposed view. *Journal of knowledge management*.  
<https://doi.org/10.1108/13673271111108756>
21. Muthinja, M. M. (2016). Financial innovations and bank performance in Kenya: Evidence from branchless banking models [PhD thesis, School of Economic and Business Sciences, University of the Witwatersrand, Johannesburg].  
<https://doi.org/10.4102/sajems.v21i1.1681>
22. Nawab, S., Nazir, T., Zahid, M. M., & Fawad, S. M. (2015). Knowledge management, innovation and organizational performance. *International Journal of Knowledge Engineering*, 1(1), 43-48.  
<https://doi.org/10.7763/IJKE.2015.V1.7>
23. Nowacki, R., & Bachnik, K. (2016). Innovations within knowledge management. *Journal of Business Research*, 69(5), 1577-1581.  
<https://doi.org/10.1016/j.jbusres.2015.10.020>
24. Obay, L. (2000), *Financial Innovation in the Banking Industry: The Case of Asset Securitization* (Garland Publishing, New York).
25. Obeso, M., Hernández-Linares, R., López-Fernández, M. C., & Serrano-Bedia, A. M. (2020). Knowledge management processes and organizational performance: the mediating role of organizational learning. *Journal of Knowledge Management*.  
<https://doi.org/10.1108/JKM-10-2019-0553>
26. Paaís, M., & PATTIRUHU, J. R. (2020). Effect of motivation, leadership, and organizational culture on satisfaction and employee performance. *The Journal of Asian Finance, Economics, and Business*, 7(8), 577-588.  
<https://doi.org/10.13106/jafeb.2020.vol7.no8.577>
27. Schniederjans, D. G., Curado, C., & Khalajhedayati, M. (2020). Supply chain digitisation trends: An integration of knowledge management. *International Journal of Production Economics*, 220, 107439.  
<https://doi.org/10.1016/j.ijpe.2019.07.012>
28. Shin, K., & Pérez-Nordtvedt, L. (2020). Knowledge acquisition efficiency, strategic renewal frequency and firm performance in high velocity environments. *Journal of Knowledge Management*.  
<https://doi.org/10.1108/JKM-04-2020-0287>
29. Silber, W. L. (1983). The process of financial innovation. *The American Economic Review*, 73(2), 89-95.
30. Suryono, R. R., Budi, I., & Purwandari, B. (2020). Challenges and trends of financial technology (Fintech): a systematic literature review. *Information*, 11(12), 590  
<https://doi.org/10.3390/info11120590>
31. Suryono, R. R., Purwandari, B., & Budi, I. (2019). Peer to peer (P2P) lending problems and potential solutions: A systematic literature review. *Procedia Computer Science*, 161, 204-214.  
<https://doi.org/10.1016/j.procs.2019.11.116>
32. Talat, M. A. (2018). The impact of knowledge management on innovation: an empirical study of private sector industries (Master's thesis, Nord universitet).
33. Trading Economics. (2017). Jordan GDP Annual Growth Rate. Retrieved February 20, 2017, from <http://www.tradingeconomics.com/jordan/gdp-growth-annual>
34. Trading Economics. (2021). Jordan GDP Annual Growth Rate. Retrieved February 20, 2017, from <http://www.tradingeconomics.com/jordan/gdp-growth-annual>
35. Waribugo, S., Ofoegbu, W., & Akpan, E. (2016). The impact of knowledge management on product innovation of manufacturing firms in Nigeria.
36. World Bank (2020b). World Bank DataBank. Retrieved from <http://data.worldbank.org/>