“The influence of technological innovative capabilities on firm performance: Moderating effect of strategic agility”

AUTHORS	Hamza Khraim

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Hamza Khraim (Jordan)

THE INFLUENCE OF TECHNOLOGICAL INNOVATIVE CAPABILITIES ON FIRM PERFORMANCE: MODERATING EFFECT OF STRATEGIC AGILITY

Abstract

This study investigates the influence of technological innovative capabilities (TICs) on firm performance (FP) in the IT sector, with strategic agility as a moderator variable. This paper analyzes the TICs at the firm level in the service sector using the functional approach. An online structured questionnaire was adapted and refined to collect the required information on the influence of TICs dimensions on FP in the IT sector to achieve the objectives. The unit of analysis consists of top management staff and heads of departments from IT firms in Amman, Jordan. A sample of 67 IT firms was selected, and 300 questionnaires were distributed. A total number of returned responses was 223, producing a 74% response rate. Structural equation modeling was used to test the hypotheses. The revealed findings show that learning capability, marketing capability, organizational capability, and strategic planning capability had a significant influence on FP, whereas resource allocation capability was not significant. In addition, multiple hierarchical regression was used to test the moderating effect of strategic agility on the relationship between TICs and FP. Revealed results of the overall model to examine the moderating effect show that strategic agility is not significant in moderating the relationship between TICs dimensions and FP.

Keywords firm capabilities, functional approach, performance, agility, IT sector, Jordan

JEL Classification M10, M20, M31

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Hamza Khraim, Ph.D., Associate Professor, Business Administration Department, Faculty of Business, Amman Arab University, Jordan.

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INTRODUCTION

In today's fast-changing environment, businesses must be flexible and innovative to respond to more unsettled and complicated circumstances. Firms should continually adjust their services and processes to accommodate fast-evolving clients' needs, and their capacity to create an innovative and distinctive service offering becomes essential to enhance performance and gain a long-term competitive edge. Innovation is critical for economic growth, extending, and supporting businesses' exceptional performance, expanding industrial competitiveness, raising living standards, and improving quality of life (Siallagan et al., 2019).

Technological innovation capabilities (TICs) are a powerful strategic resource that allows companies to attain a long-term competitive edge in a changing environment (Cheng & Lin, 2012). Firms with higher levels of TICs can perform more effectively in more volatile scenarios than those with lower levels of TICs (Rahim & Zainuddin, 2017). As a result, TICs can help a firm gain a competitive edge while exceeding the market average in financial returns (Verdu et al., 2012). To sustain and improve their performance, firms must use both resources and TICs (Rahim & Zainuddin, 2017).

According to Zahra (2020), "technological capabilities allow firms to develop unique products and attract clients in emerging markets, laying the groundwork for growth and profitability." Moreover, there is an increasing tendency in research to investigate how technological innovation skills enhance a company's competitive advantages and performance (Rahim & Zainuddin, 2017). Paulraj and Chen (2007) assert that "technological capabilities need thorough examination because they can explain both advantages and disadvantages."

Due to the growth and success of service sectors and the expanding dominance of the service sector in the global economy, the need to explore and examine the significance of this paradigm has started to evolve (Ferraz & Santos, 2016). Moreira et al. (2016) deliberate that "the immense strategic significance of TICs in the service sector and the high level of contention in this industry is clear to spend more attention investigating the relationship between TICs and competitive performance in service firms." Therefore, the problem of this study is to identify if TICs have the same influence on FP in the service sector as in other sectors. In addition, it analyzes what TICs can be more valuable in enhancing FP in the service sector.

1. LITERATURE REVIEW AND HYPOTHESES

1.1. Technological innovation capabilities (TICs)

Zahra (2020) defined capability as "a set of competencies and unique skills that firms could deploy in their markets in the pursuit of their goals." Burgelman et al. (2004) asserted that "technological capabilities are fundamental for companies to acquire competitive advantage." They also defined TICs as "a varied number of firm features that enhance and support the firm's technological innovation strategies." Guan and Ma (2003) and Rahim and Zainuddin (2017) described TICs as "a remarkable asset of a firm, including product, process, technology, organization, knowledge, and experience."

Regarding firms' TICs conceptualization, Wang et al. (2008) and Shafia et al. (2016) used the multidimensional approach. From a miscellany perspective, such a high level of interrelation with capacities has been investigated. Guan et al. (2006) argued, "TICs are firmly grounded in varied organizational activities like manufacturing, marketing, strategy planning, learning, and resource allocation." TICs apply a continuous and extensive series of managerial functions in innovation development.

Considerable empirical research to examine TICs to explain and apprehend their essence, features, and measurements in a comprehensive viewpoint is relevant. The bulk of literature on TICs studies indicates that the constructs of TICs are complicated and multidimensional (Markard & Truffer, 2008; Wang et al., 2008; Yam et al., 2011). Furthermore, many techniques were used to conceptualize TICs, resulting in several skills for analyzing firm's TICs.

Yam et al. (2011) outlined the three approaches: the asset approach, the process approach, and the functional approach. According to Yam et al. (2004), the functional approach is uncomplicated and simple to grasp and helps the survey's multi-informant approach. The asset and process approach, on the other hand, are more complex to comprehend (Yam et al., 2011).

The functional approach to TICs has lately gained traction. Yam et al. (2004) created a seven-dimensional framework for assessing a firm's TICs ability, including "learning, R&D, resource allocation, production, marketing, organizational, and strategic planning capabilities." Furthermore, Yam et al. (2004) provided a paradigm incorporating capacity and performance perspectives. Contemporary research by Guan et al. (2006) and Yam et al. (2004) has maintained, "TICs may integrate learning, R&D, resource allocation, manufacturing, marketing, organization, and decision-making."

Research also focused on technological innovation capabilities at firm-level capabilities. For example, Chen et al. (2020), Wang and Zhang (2018),

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and Shafia et al. (2016) emphasized that such capabilities include "resource allocation, research, and development, learning, manufacturing, organizational, financial, marketing, and strategic planning capabilities." Based on these findings, the effects of TICs at the firm level should be the focus of this paper.

TICs are essential to enhance and elevate FP. According to Yam et al. (2004) and Burgelman et al. (2004), "TICs of a company have repeatedly been recommended as a tool to facilitate and enhance an innovation strategy to maintain a firm's competitiveness." As a result, Teece (1986) asserted, "TICs are the most significant source of firm's competitive advantages." In addition, firms employ TICs to improve their total innovation skills, which leads to higher performance (Chandy et al., 2003; Yam et al., 2011). As a result, it is predicted that well-developed TICs contribute significantly to firm performance.

When TICs combine a variety of innovative resources, as Teece (1986) points out, they promote improved firm-level performance. According to Guan et al. (2006), the constituents of TICs interact to impact business competitiveness performance. Yam et al. (2011) found that "TICs are interactive and complement organization's innovative capabilities, possibly reinforcing its innovation outputs." Therefore, the relationship between TICs and FP is clear and promising; hence, TIC implementation will improve performance results. Since all features, functions, and traits are relevant to one another and inherently complimentary, it is predicted that holistic TICs will have a significant influence on firm performance. Since all the components and components of TICs are interdependent, they are more presumably to encourage creative interfaces and actions that improve company performance. Siallagan et al. (2019) asserted, "in many cases, high-performance businesses have more capabilities than low-performance businesses."

The two categories of performance indicators utilized align with businesses primarily classified as service businesses. Innovation and sales performance are the two sorts of performance metrics. Yam et al. (2004) maintained, "over the previous three years, sales success has been examined based on the average annual sales growth rate owing to technologically advanced items." The growth rate in sales is also a measure of a company's market penetration (Razavi et al., 2016). Olanipekun et al. (2015) affirmed, "the concept of firm performance is fundamental to businesses as the key objective for business organizations is profit-making."

Syafarudin (2016) describes firm performance as "the outcome or accomplishment affected by the company's operations utilizing the resources owned." Based on Azubuike (2013) and Shan and Jolly (2012), this paper will measure firm performance by non-financial performance measures like market share, firm profitability, and firm efficiency. According to Siallagan et al. (2019) and Rahim and Zainuddin (2017), "high-performance companies have stronger capabilities than low-performance firms." Finally, Razavi et al. (2016) "supported the expected positive relationship between TICs and the competitive performance of ICT firms."

1.2. Strategic agility

Chan and Muthuveloo (2022) asserted, "in today's turbulent business landscape, organizations need strategic agility to acquire the dynamism to achieve their goals." Sherehiy and Karwowski (2014) described agility as an "organization's capability to respond quickly and flexibly to changes in the internal and external business environment to exploit all available opportunities." Doz and Kosonen (2008) defined strategic agility as "the ability to rediscover or review the organization and the organization's strategy dynamically with rapid changes in the external business environment." Vitality in modern business settings has led to the accumulative significance of agility as an instrument to continually adapt to external threats and opportunities (Weber & Tarba, 2014).

According to Pucciarelli and Kaplan (2016), "strategic agility enables organizations to have flexibility and fluidity in developing and deploying resources to address the occurrences of dynamic changes." Furthermore, Sherehiy et al. (2007) asserted, "strategic agility allows organizations to be flexible, adapt, and respond quickly to market fluctuations, as well as practice actions to control market ambiguity and risk." Sampath (2015)

"acknowledged strategic agility to be about being dynamic to innovation in the business context, designating opportunities, threats, and risks." As Tallon and Pinsonneault (2011) declared, "strategic agility can advance the quality of relevant responses to environmental fluctuations and, hence, can enhance performance." Alahyari et al. (2017) asserted that superior management of strategic agility by companies could create a distinction in the market and achieve enhanced performance both internally and externally. Queiroz et al. (2018) affirmed, "strategic agility is a charismatic capability directed by IT that improves firm performance." Finally, Ashrafi et al. (2019) contemplate that strategic agility performs a fundamental part in revamping the company and boosting its performance.

From the above literature, it can be concluded that TICs is a multidimensional concept consisting of distinctive and essential capabilities that enhance competitive advantage and ultimately upsurge FP. Researchers used many approaches to examine and grasp the influence of TICs on FP, and many adopted the functional approach because it was easy to apply and understand. Furthermore, strategic agility can be supportive in reacting to fluctuations in the business environment and market structure.

The purpose of this study is to identify the influence of TICs on FP in a new context that extends the TICs model in an innovative field of research in the IT service sector. The IT service sector is witnessing rapid growth and expansion in all aspects of Jordan. Thus, this study can boost this growth by exploring and concentrating on the most valuable and significant TICs that maximize the firms' resources and reduce cost, subsequently improving FP. According to the pertinent literature, the following hypotheses are elaborated, and accordingly, the research model is presented in Figure 1:

H1: Learning capability has a significant positive influence on firm performance.

H2: Resource allocation capability has a significant positive influence on firm performance.

H3: Marketing capability has a significant positive influence on firm performance.

H4: Organization capability has a significant positive influence on firm performance.

H5: Strategic planning capability has a significant positive influence on firm performance.

H6: Strategic agility moderates the relationship between technological innovation capabilities and firm performance.

2. METHODS

This study utilizes the quantitative approach by designing and using a structured questionnaire that encompasses questions about TICs, firm performance, and strategic agility. The number of firms specializing in IT in Amman is 85. The firms were selected from the top software developers in Jordan

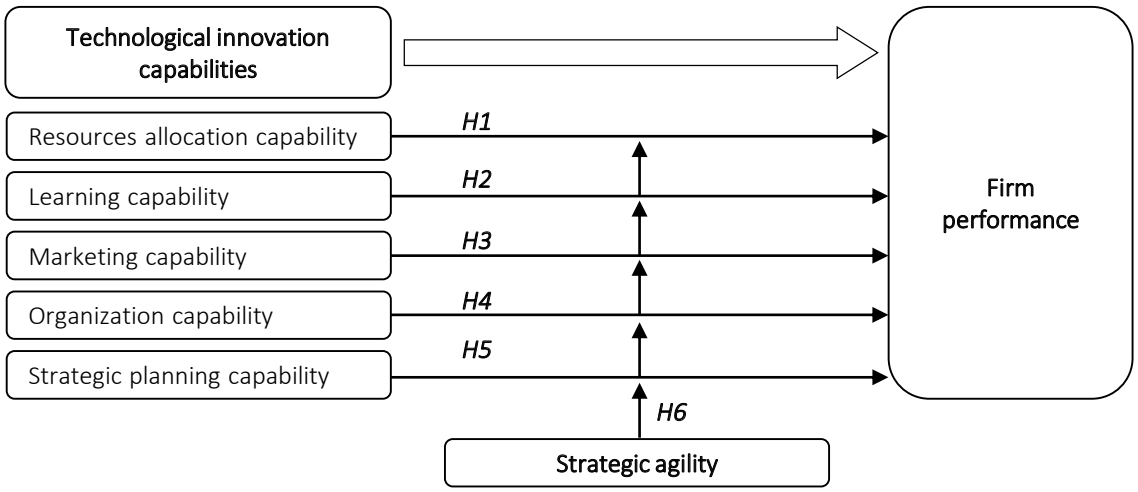

Figure 1. Research model

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Directory, 2022. Only the firms that use more than 50% of their IT managed services were included in the sample, which cut the number of firms to 67.

The questionnaire was distributed to 67 IT firms in Amman, as presented in Table 1. TICs dimensions were measured with twenty-nine questions adapted from Chiesa et al. (1996), Yam et al. (2004), and Guan et al. (2006). For strategic agility, six questions were adapted from Worley et al. (2014) and Lee (2015). Finally, firm performance was measured by four questions adapted from Yam et al. (2004) and Guan and Ma (2003).

A five-point Likert-type scale, ranging from 5 = Strongly Agree to 1 = Strongly Disagree, was used to solicit respondents' answers. According to the Ministry of Digital Economy and Entrepreneurship (MoDEE), the total number of IT companies was 67 firms dispersed in many business fields, as shown in Table 1. The units of analysis were top management and heads of departments. An online questionnaire was sent to the email directory of the selected companies. The process took approximately two months to achieve an acceptable response. In addition, a regular follow-up with companies' managers to motivate other members to complete the questionnaire was done. Finally, the number of usable responses was 223 out of 300, which produced a 74% response rate. Table 2 present the respondents' demographic profile. It shows that 69.5% of respondents are males, and 82.5% hold an undergraduate degree. Concerning age, the results show that young people dominate the IT companies, with 75.7% of the respondents being less than 39 years old.

Table 1. Number and type of IT firms in Amman, 2022

Source: Clutch (2022).

Business type	No.
Business services	8
Automotive	2
Marketing and advertisement	3
Consumers' products and services	5
E-commerce	8
Financial services	3
Hospitality and leisure	7
Media	7
Information technology	11
Medical	4
Telecommunications	3
Retail	4
Supply chain, logistics, and transport	2

Table 2. Demographic profile

Items	Frequency	Percentage
Gender		
Male	155	69.5
Female	68	30.5
Total	223	100
Education		
Bachelor	184	82.5
Master	39	17.5
Total	223	100
Age		
less than 29 years	73	32.7
30-39 years	96	43
40-49 years	43	19.2
more than 50 years	11	4.9
Total	223	100
Position		
General Manager	49	22
Marketing, PR Manager	34	15.2
Finance Manager	46	20.6
HR Manager	35	15.7
IT Manager	59	26.5
Total	223	100

3. RESULTS

To identify the underlying dimensions of the TIC concept, confirmatory factor analysis was performed. Factor analysis helps align interrelated items into related factors that improve the examination of their effects on firms' performance. The current study utilized a principal component analysis applying Varimax rotation. Bartlett's test of sphericity was conducted to check the suitability of data for factor analysis to confirm that ($P < 0.05$). In addition, the Kaiser-Meyer-Olkin test demonstrates that the values are over 0.8. The selected factors are those factors extracted with "Eigenvalue" over one. The Eigenvalues of the TICs factors were 4.561**,** 3.622, 2.358, 1.825, and 1.121, respectively.

The TICs' five-factor structure accounted for 75.69% of the total variance, which was deemed appropriate compared with the 60% stipulated by Malhotra (2010). Table 3 indicates the loadings for the factors on which the items loaded the highest. According to Hair et al. (2010) and Malhotra (2010), item loadings should be above 60 to retain them for subsequent analysis. As presented in Table 3, all items are above the minimum acceptable level.

3.1. Reliability and validity

Convergent validity was measured by testing the average variance extracted (AVE). The minimum level of accepted AVE is 0.5 (Hair et al., 1998). Table 3 shows that all dimensions were higher than the minimum threshold and possessed adequate convergent validity. Cronbach's alpha was used to verify the internal consistency of the TICs. For the learning capability, Cronbach's alpha was (0.781), resource allocation capability (0.740), organization capability (0.788), and strategic planning capability (0.760). The reliability of the dimensions' is above the value of 0.70 or more, which is considered above the accepted level (Malhotra, 2010).

For the dependent variable, firm performance, Cronbach's alpha was (0.820), and for the moderator, strategic agility, it was (0.778). To ensure the suitability of the data for measuring the structural model, the collinearity problem was tested among the constructs. The data is considered free from the collinearity problem if the correlation coefficient values are less than (0.80). This problem was verified by calculating the variance inflation factor (VIF) and tolerance. The tolerance value and variation inflation factor (VIF) for all constructs met the criteria of more than 0.2 and less than 0.5, respectively, and hence no collinearity issue was found.

Table 4 presents the descriptive statistics and correlation coefficients, including correlation matrices for the research variables. The correlation matrix shows a stable significant correlation between the DV and IV, as well as for the moderator variable strategic agility and dependent variable FP.

Table 3. Factor analysis

Technological Innovation Capabilities (TICs)	Item	Factor loadings	Mean	Cronbach's Alpha α	AVE
Learning Capability	LC1	0.665	3.97	0.781	0.65
	LC2	0.884	3.87		
	LC3	0.714	3.78		
	LC4	0.84	3.8		
	LC5	0.847	3.65		
	LC6	0.832	3.8		
Resource Allocation Capability	RAC1	0.842	3.9	0.74	0.69
	RAC2	0.642	3.85		
	RAC3	0.808	3.79		
	RAC4	0.848	3.92		
	RAC5	0.952	3.64		
	RAC6	0.607	3.6		
Marketing Capability	MC1	0.626	3.77	0.79	0.63
	MC2	0.886	3.4		
	MC3	0.79	3.25		
	MC4	0.701	3.42		
	MC5	0.832	4.08		
Organization Capability	OC1	0.886	3.11	0.788	0.67
	OC2	0.822	2.95		
	OC3	0.756	3.22		
Strategy Planning Capability	SPC1	0.65	3.8	0.76	0.68
	SPC2	0.797	3.58		
	SPC3	0.747	3.6		
	SPC4	0.694	3.7		
	SPC5	0.705	3.65		
Firm Performance	FP1	0.884	3.8	0.82	0.71
	FP2	0.714	3.65		
	FP3	0.84	3.8		
	FP4	0.832	3.7		
Strategic Agility	SA1	0.842	3.43	0.778	0.6
	SA2	0.616	4.02		
	SA3	0.808	4.01		
	SA4	0.848	4.06		
	SA5	0.954	4.11		

Note: Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

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Table 4. Correlations of TICs dimensions and FP

Variable	Firm Performance	Learning Capability	Resource Capability	Market Capability	Organ Capability	Strat. P Capability	LC & Agility	Resource & Agility	Marketing & Agility	Organization & Agility	Strat. Plan & Agility
Firm Performance	1.000	–	–	–	–	–	–	–	–	–	–
Learning Capability	.984	1.000	–	–	–	–	–	–	–	–	–
Resource Capability	.392	.378	1.000	–	–	–	–	–	–	–	–
Market Capability	.763	.735	.567	1.000	–	–	–	–	–	–	–
Organ Capability	.134	.125	.275	.518	1.000	–	–	–	–	–	–
Strat. P Capability	.851	.823	.580	.821	.189	1.000	–	–	–	–	–
LC & Agility	.684	.680	.296	.568	.217	.572	1.000	–	–	–	–
Resource & Agility	.301	.280	.708	.457	.317	.413	.720	1.000	–	–	–
Marketing & Agility	.555	.521	.430	.761	.476	.589	.872	.790	1.000	–	–
Organization & Agility	.133	.116	.249	.463	.898	.175	.485	.568	.693	1.000	–
Strat. Plan. & Agility	.632	.597	.452	.657	.267	.730	.911	.794	.911	.514	1.000

Table 5. Path coefficients and their significance

DV		ID	Estimate	S.E.	C.R.	P	Label
Firm Performance	←	Learning Cap	.906	.012	72.731	***	Accepted
Firm Performance	←	Resource all. Cap	.042	.049	.863	.388	Rejected
Firm Performance	←	Marketing Cap	.080	.011	6.658	***	Accepted
Firm Performance	←	Organizational Cap	–.021	.008	–2.675	.007	Accepted
Firm Performance	←	Strategic plan Cap	.099	.011	9.142	***	Accepted

Note: *** – Significant at the 0.01 level.

3.2. Measurement model

The first step in the PLS model is to assess the measurement model (outer model). After ensuring that the validity of the measurement scale is positive and significant, the model fit was examined as recommended by Hair et al. (2010). The results indicate that CFI = 0.913, TLI = 0.889, NFI = 0.813, RMSEA = 0.061, RMR = 0.064, PClose = 0.001. Since the sample size is larger than 150, these results are deemed satisfactory, as noted by Yadama and Pandey (1995). Hence, the overall model fit indicators designate that this model is accepted.

3.3. Structural model

The second step is to assess the structural model (inner model). Structural equation modeling was used to test the hypotheses, as presented in Table 5. The results reveal that learning capabilities had a positive influence on firm performance ($\beta = 0.906$, $t = 2.051$, $p < 0.00$), accepting *H1*. In terms of resource allocation capabilities, results show no positive influence on firm performance ($\beta = 0.042$, $t = 1.051$, $p < 0.00$), rejecting *H2*. For marketing capabilities, the result shows a positive influence on firm performance ($\beta = 0.080$, $t = 2.051$, $p < 0.00$), and hence *H3* is accepted. The results also revealed a positive influence of organizational capabilities on firm performance ($\beta = 0.021$, $t = 2.051$, $p < 0.007$); accordingly, *H4* is accepted. Finally, results reveal that strategic planning had a positive influence on firm performance ($\beta = 0.099$, $t = 2.051$, $p < 0.007$), accepting *H5*.

3.4. Testing the moderating effect

The last hypothesis of this study was to investigate the possible moderating effect of strategic agility on the relationship between TICs and FP. To test hypothesis 6, the multiple hierarchical regression analysis was applied to see if strategic agility moderates the relationship between TICs and FP, as depicted in Table 6.

Table 6 presents the hierarchical multiple regression results according to the two models. The first step in the model reflects the direct influence of

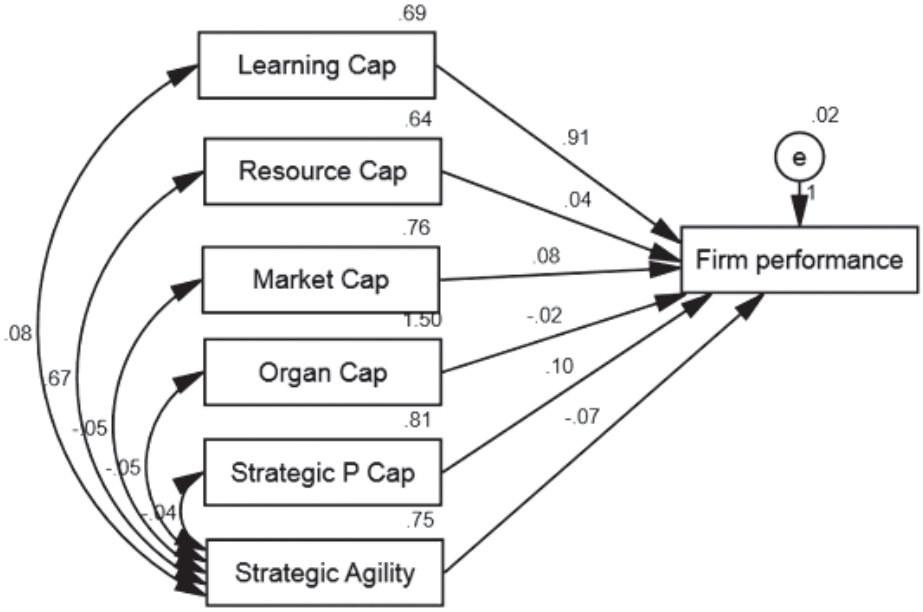

Figure 2. Structural model

independent variables symbolized by learning, resources allocation, marketing, organization, and strategic planning capabilities on IT companies' FP in Amman city. The second step represents the influence of strategic agility as a moderator variable on the relationship between the independent and dependent variables.

The second step demonstrates that strategic agility influences the relationship between learning capability dimension and FP (β = 0.860, t = 40.085, p < 0.00). Concerning the second dimension, resource allocation capability, the result was β = 0.038, t = 0.834, p < 0.00, which indicates no significant influence. Strategic agility has a positive influence on the relationship between marketing capability dimension and FP (β = 0.750, t = 2.795, p < 0.06). Regarding the fourth dimension, strategic agility shows a positive influence on the relationship between organization capability and FP (β = –0.800, t = –2.110, p < 0.045).

Finally, strategic agility indicates a positive influence on the relationship between strategic planning capability and FP (β = 0.101, t = 3.843, p < 0.000). As shown in Table 6, the overall model in step two (R2 = 0.860) for all dimensions shows no significant difference from the model in step one (R2 = 0.856), and this means that strategic agility has no significant influence on the relationship between TICs dimension and FP; hence, *H6* is rejected.

Table 6. Multiple hierarchical regression analysis

	Independent variables	First step			Second step		
		B	t	Sig	β	t	Sig
Dependent variable	Learning capability	.853	40.6	.000	.860	40.082	.000
	Resources allocation Capability	–.030	–2.08	.038	.038	.834	.405
	Marketing capability	.080	2.984	.000	.075	2.795	.006
	Organization capability	–.026	–1.716	.088	-.080	-1.110	.054
	Strategic planning capability	.105	3.981	.000	.101	3.843	.000
Firm Performance	Strategic Agility (Moderating V)				–.068	–1.564	.119
R			0.908			0.910	
R2			0.856			0.860	
R2 Δ			0.856			0.153	
F Δ			539.3			2.445	
F Δ Sig			.000			.119	

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4. DISCUSSION

This study was implemented to examine the role of TICs' influence on FP and investigate the role of strategic agility in affecting this relationship. This paper is a critical attempt to study key business concepts in a new context, such as the service sector and especially the high IT rivalry sector. TICs are essential for building and sustaining the firm competitive advantage that supports the high market performance. This study followed the multidimensional design in measuring TICs. The result of this study complies with the literature review and the conceptual model, which signify that the TICs dimension influences FP.

It was revealed that learning capability has the highest effect on FP. That refers to the fact that learning capability is positively associated with other capabilities that can boost the competitive FP. This finding is coherent with prior research revealing that a firm with lofty and strong learning capability is more competent in developing complementary capabilities to revamp product and process innovativeness (Freeman, 2002; Yam et al., 2004; Yam et al., 2011; Razavi et al., 2016).

The second influential dimension was strategic planning capability, designed to recognize and deal internally with strengths and weaknesses and externally with opportunities and threats. Yam et al. (2010) asserted, "a firm with resilient strategic planning capability could adequately carry out its technological and marketing strategies with excellent performance that captures customer satisfaction." This result is consistent with Chen et al. (2020), Yam et al. (2011), and Ince et al. (2016). Yam et al. (2010) argued, "one of the most influential factors in competitiveness is marketing capability." Lau et al. (2010) contended, "marketing capability has one of the most robust relationships with FP among all types of capabilities." The results show that marketing capability is a critical dimension of the TICs that affect FP, and that is in line with Yam et al. (2004), Razavi et al. (2016), and Chan and Muthuveloo (2020).

The last significant dimension is organization capability. In contrast to Yam et al. (2004), the results confirm the influence of organization capability on FP in the IT sector. However, this finding could be attributed to a different context since this study is applied in the service sector. In contrast to Chen et al. (2020) and Zahra (2020), there was no effect of resource allocation capability on FP in the IT sector. Furthermore, applying the TICs model in the service sector has implications for future research. Based on the results, the study can designate the variable type's essential to incorporate in forthcoming empirical examinations of the relationship between TIC and FP in a new area in the service industry.

CONCLUSION

The study focuses on TICs related to services. However, it also uses many dimensions such as learning, resource allocation, marketing, organization, and strategic planning capabilities. The proposed model for this study extends the understanding of the moderating effect of new settings such as strategic agility on the relationship between TIC and FP. However, there is a dearth of research devoted to examining the influence of TICs on FP and the moderating effects of strategic agility on this relationship.

The results show that learning, marketing, organization, and strategic planning capabilities have a significant influence on PF. On the contrary, resource allocation capability was not significant. The overall model of the moderating variable, strategic agility, shows no significant effect. The second step in the hierarchical multiple regression shows that strategic agility moderates learning, marketing, and strategic planning capabilities. Those results can benefit practitioners by helping them refine their decisions about critical TICs with available strategic resources.

AUTHOR CONTRIBUTIONS

Conceptualization: Hamza Khraim.
Data curation: Hamza Khraim.
Formal analysis: Hamza Khraim.
Funding acquisition: Hamza Khraim.
Investigation: Hamza Khraim.
Methodology: Hamza Khraim.
Project administration: Hamza Khraim.
Resources: Hamza Khraim.
Software: Hamza Khraim.
Supervision: Hamza Khraim.
Validation: Hamza Khraim.
Visualization: Hamza Khraim.
Writing – original draft: Hamza Khraim.
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