REVIVING THE PAKISTANI SYSTEM – E-BUSINESS CAPABILITIES AND FIRM PERFORMANCE

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ARTICLE INFO	ABSTRACT
	In today's turbulent environment, we have observed a considerable increase in the volume of E-business and E-commerce locally and globally. These two factors have changed the whole business spectrum. The purpose of this research is to identify the factors that can improve firm's performance in the present IT-oriented scenario. This study explains how firm's performance is dependent on IT. The factors of E-business capabilities are IT infrastructure, IT expertise, strategic IT alignment, market orientation, and business process. The literature review provides the framework for the research model and hypotheses. Data was gathered from the services and manufacturing sectors through a questionnaire consisting of 31 items. This research is especially designed for firms. 400 questionnaires were distributed among managers. Data from 310 respondents were used to estimate the proposed model. Regression analysis was carried out for testing hypotheses. This study acknowledges the appropriate description of E-business capabilities for firm's performance, that is, how IT resources affect the firm's performance in the service and manufacturing sectors. This study has practical implications that could be beneficial for the services and manufacturing sectors to enhance their firm's performance.

1. INTRODUCTION

Puriwat and Tripopsakul (2021) argued that the COVID-19 pandemic has affected the lives of people tremendously and has forced enterprises to develop new ways of doing business. Businesses are now quickly adapting into the systems of information to increase the number of transactions within the chain of business activities, and to achieve goals about communication in real-time. They are also striving to minimize cost of transaction and improvement in flexible IT system by the firms (Asad, Shaheen, & Aftab, 2021). Research about information system highlights the significance of usage of technology in enhancing the performance of the firms (Liang et al., 2010; Bharadwaj et al., 2013). Now technological advancements have forced small- and medium-sized enterprises to change their payment systems to online (Kwabena et al., 2021). It is an essential part for growth of every firm and business. Building a reputable research domain should consist of adoption, usage, and value of e-business (Baker, 2012).

This study examines the impact of E-business capabilities on firm's performance. It also investigates the E-business capabilities in the form of usage of IT infrastructure, availability of IT expertise, performance in marketing level, and business process. The research is done in the service and manufacturing sectors of Pakistan to check whether there is any impact of these variables or not. The main focus of this study is to investigate the impact of the usage of IT along with other key factors on the firm's performance.

2.   REVIEW OF LITERATURE AND HYPOTHESES DEVELOPMENT

This study is related to the firm's performance that is affected by IT infrastructure, IT capabilities, strategic alignment, market capability, and business process competencies in the services and manufacturing sector of Pakistan. This section covers the theoretical foundation of this study, definitions of the variables studied, concepts regarding studied variables, and their relationships. There is a vital role of business strategy encompassing marketing activities in any business activity (Jamal et al., 2021). This section also provides a review of the previous research, which is relevant to this study.

2.1 Theoretical Foundation

The resource-based view (RBV) in strategic management describes how the firms achieve their goals and succeed in business by assembling their recourses and by true use of capabilities (Barney et al., 2001). The sources and capabilities are differentiated by RBV; for generating products, firms use their resources efficiently (Sanchez & Mahoney, 1996). In this research, RBV theory is applied to E-business with reference to the firm's performance, which can be studied in the light of strategic management techniques for a successful business by using multiple capabilities.

2.2. IT Infrastructure

For decades, policymakers argue that through IT systems, firm's profitability can grow rapidly (Lee, Kim, Kim, & Oh, 2012). Investment in IT can increase the profitability of any firm and also improve the performance of the firm, but investment in IT has limits (Ghasemaghaei, Hassanein, & Turel, 2017). Thus, it is important to manage IT to realize its full potential. For the execution of IT resource management, the process comprising planning, organizing, controlling, and directing the use of IT within the boundaries of the organization is followed (Boynton & Zmud, 1987). We have seen that countries are developing via the implementation of IT. China is now recognized as the world's manufacturing center. It has increased the size of its economy considerably through the enhanced usage of IT systems (Vorobyova, Osman, & Alhajjar, 2021).

2.3. IT Expertise

In the recent IT literature, various researchers have identified sources that increase firm's performance. These include mankind (human), technology, and relationship resources (Ravichandran, Lertwongsatien, & Lertwongsatien, 2005).

2.4. Strategic IT alignment

In E-business, to adopt complicated technological innovations companies add capabilities. Once a higher level of IT experience is achieved, it increases the firm's propensity to adopt IT to implement technologies. Rare availability of IT experience is a serious issue forbidding the evolution of IT implementation. High-level advantages of E-business doubtlessly give in-depth incentives for firms to use it. For SME adoption of E-business, the vital role of strategic vision had been documented by a number of empirical studies (Mkansi, 2021).

2.5. Market Orientation

2.5.1. Competitor Orientation

Due to the strong competition, all the companies have to work more effectively and efficiently to be sustainable in the market. As the firms grow, they take into account the IT strategies adopted by their competitors.

2.5.2. Customer Orientation

Customer orientation deals with the customer's needs. It implies understanding the customers' preferences. Customer orientation literature argued that, for the sake of long-term relationships between the customers and the firm, it is necessary to build strong communication with the customers (Brown & Eisenhardt, 1995).

2.6. Business Process Competency

2.6.1. Information Sharing

Information sharing proved helpful as markets, firms, companies and their partner's coordination bring awareness regarding the latest situation. For time and resource-saving, information sharing is very effective (Kim, Cavusgil, & Calantone, 2006).

2.6.2. Coordination

Coordination is the understanding among the partners and firms to guide all needs of customers, shoppers and retailers (Seggie et al., 2006). SME's ability to utilize resources, and being capable to bring good results can be enhanced through effective coordination. The coordination links may be fashioned through smart market transactions, sometimes between extremely autonomous consumers and sellers represent comparatively short negotiation relationships through signing contracts. Firms develop policies for serving with efficiency.

2.6.3. Responsiveness

Responsiveness is the technique that makes the partners aware of the latest levels of market competition (Kim, Cavusgil, & Calantone, 2006). Responsiveness additionally guides the use of all new methods for the progress of firms (Yu, Chavez, Jacobs, Wong, & Yuan, 2019). Responsiveness additionally takes innovative steps to strive for market share and also to get the know-how about the requirements of the purchasers.

2.7. Firm's Performance

Researchers have judged the firm's performance on the basis of the consequences of IT investment. In the early 1980s, studies analyzing this connection pointed out that investments in IT were not related to the productivity of a firm, which is called "Productive Paradox" (Wamba, Gunasekaran, Akter, Ren, Dubey, & Childe, 2017). Later technical studies, pointed at a stronger influence of IT on the firm's performance (Del Monte & Papagni, 2003). These included the issues of excellent knowledge, time lags, and additionally inconvenience of resources (Kohli & Devaraj, 2003; Sabherwal & Jeyaraj, 2015).

2.8. Hypotheses

H1: IT infrastructure has a significant impact on firm's performance.
H2: IT expertise has a significant impact on firm's performance.
H3: Strategic IT alignment has a significant impact on firm's performance.
H4: Market orientation has a significant impact on firm's performance.
H4a: Competitor's orientation has a significant impact on firm's performance.
H4b: Customer's orientation has a significant impact on firm's performance.
H5: Business process competence has a significant impact on firm's performance.
H5a: Information sharing has a significant impact on firm's performance.
H5b: Coordination has a significant impact on firm's performance.
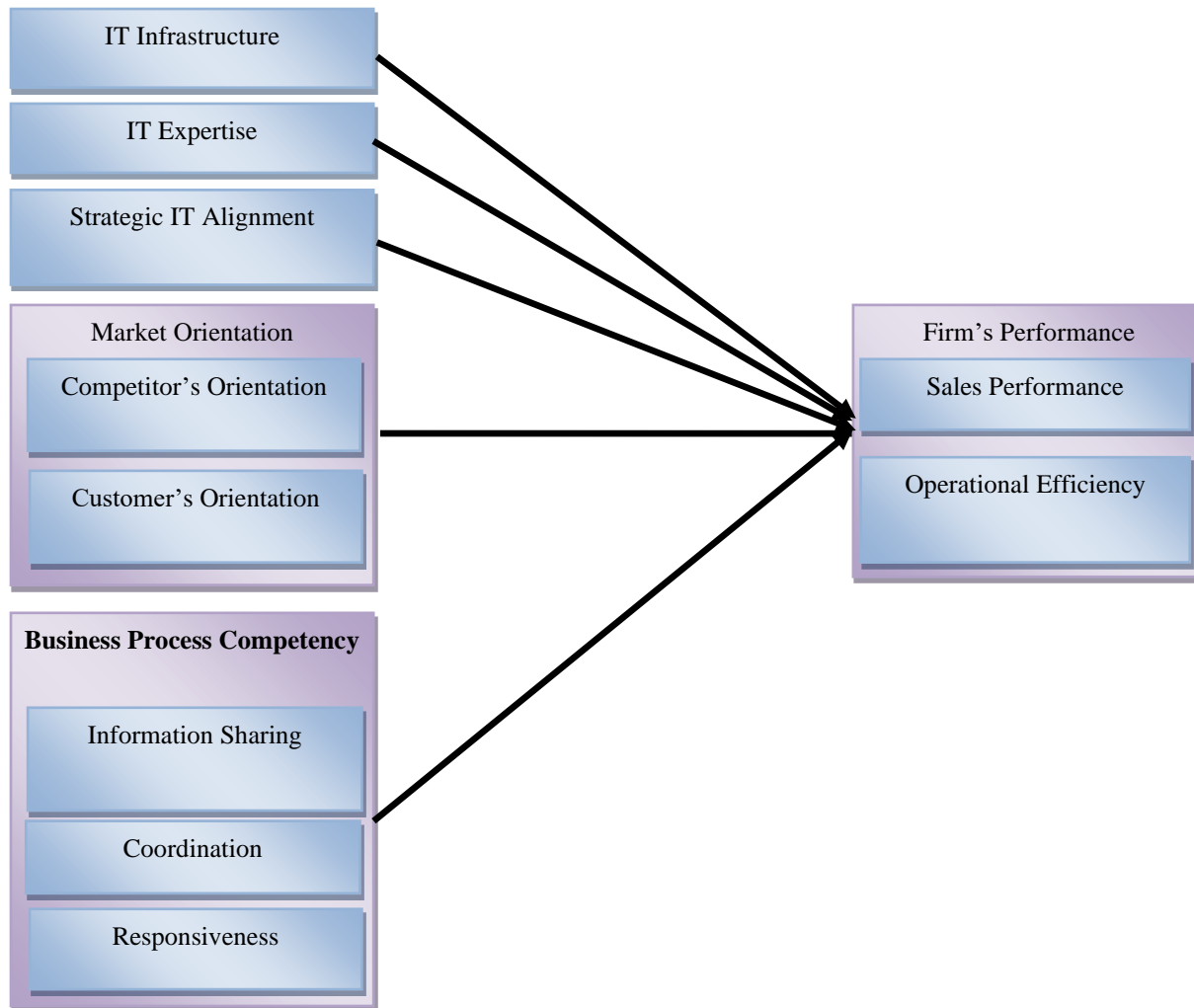*H5c: Responsiveness has a significant impact on firm's performance.*

Figure 1.   Theoretical framework

3. METHODOLOGY

Below is the explanation of the methodology followed to explain the firm's performance with reference to the infrastructure based on Internet technology, capabilities based on Internet technology, strategic IT alignment, orientation in the market, and process of business competencies is the purpose of this research study.

3.1. Research Design

This is a quantitative study based on cross-sectional data. Quantitative research is the collection of data in numerical form for showing specific quantitative phenomena along with the statistical method. Quantitative research is numerical in nature and its specialty is to allow a number of statistical analyses. In this method, we analyze hypotheses, examine causes and effects, and study connections and possibilities. This is an explanatory study based on hypothesis testing. The study was conducted in the service and manufacturing sectors without diverting the normal workflow. The interference of the researchers was minimal, because researchers have not interfered in the normal circulation of work activities beyond personally questioning the employees of different sectors. It means that was no interference in the common working areas of the different sectors selected for data collection.

3.2. Population and Sample

In this study, the population comprises the employees working at managerial or IT level in the services and manufacturing sectors of Pakistan. In this study, employees of all ages, gender, experiences and qualifications are included in the population. For this study services (Education, Banking, Restaurants) and manufacturing (Textile, Food, Manufacture) sectors were selected because they are related to customer services. So, there would be a high usage of IT resources.

A sample of 310 employees working at the managerial level in the firms of service and manufacturing sectors of Pakistan was chosen. Three-stage sampling was used for selecting the sample. In the first stage, we selected 78 services (Education, Banking, Restaurants) and 78 manufacturing (Textile, Food, Manufacture) firms by using the proportionate sampling technique. In the second stage, we selected 200 departments from the services sector and 200 departments from the manufacturing sector by using the convenience sampling technique. Altogether 400 questionnaires were personally administered. Data from 310 respondents were used for analysis. The remaining 90 responses were discarded due to more than fifty percent missing observations.

3.3. Data Analysis Tool

For data analyses, SPSS v-22 software was used. The data, collected through a questionnaire, was coded and recorded in the computer. In this study, we have used 5-point Likert scale. The mid-point of the scale is neutral for blank responses.

4. RESULTS AND DISCUSSION

Table 1 shows the reliability of the constructs in the questionnaire. The questionnaire consists of nine items/variables and the sample size is 310. The values of Cronbach's alpha indicate the internal consistency or the reliability of the scales used. This table shows the reliability coefficients for all variables. IT infrastructure (ITIF) is measured using three items and the value of Cronbach's alpha is 0.772. IT expertise (ITEP) is also measured using three items and the value of Cronbach's alpha is 0.815. The variable Strategic IT Alignment (SITA) is measured using three items. The value of Cronbach's alpha was estimated to be 0.779. The variable Competitor's orientation (COMO) was measured using three items. The value of Cronbach's alpha was estimated to be 0.808. Customer Orientation (CUSO) consisted of three items and its Cronbach's alpha value is 0.768. Business Process Competency (BPC) was measured through three dimensions. These are information sharing (INFS), coordination (COOR) and responsiveness (RESP). Three items were used to measure each of the three items. The values of Cronbach's alpha for the three scales were calculated as 0.804, 0.776 and 0.765. Firm's performance (PE) is the dependent variable, it includes seven items measuring sales performance (SP) and operational efficiency (OE). The reliability coefficients for sales performance (SP) and operational efficiency (OE) were estimated to be 0.767. It is pertinent to note that the value of Cronbach's alpha greater than 0.7 indicates that the scales used to measure the nine variables are reliable.

Table 1.   Reliability Coefficient of each Variable

Variable	Number of Items	Cronbach's Alpha
ITIF	3	0.772
ITEP	3	0.815
SITA	3	0.779
COMO	3	0.808
CUSO	3	0.768
INFS	3	0.804
COOR	3	0.776
RESP	3	0.765

PF	7	0.767

The study is based on a total of 310 employees, out of which 23.9% (N=74) are females; 76.1% (N=236) are males. This shows that more contribution comes from males. It also shows that male managers form a greater proportion of the total.

Table 2.   Mean, SD and Correlations

VAR	MEAN	SD	ITIF	ITEP	SITA	COMO	CUSO	INFS	COOR	RESP	PF
ITIF	3.9784	.9364	1								
ITEP	3.7323	.8025	-.005	1							
SITA	3.9118	.6380	.008	.117*	1						
COMO	3.7172	.7589	.062	.323**	.139*	1					
CUSO	3.6860	.6928	-.014	.261**	.450**	.350**	1				
INFS	3.8054	1.055	-.078	.069	.314**	.118*	.376**	1			
COOR	4.7150	1.8662	.020	-.068	-.030	.001	-.039	-.067	1		
RESP	3.6677	.70825	.024	.230**	.521**	.242**	.510**	.355**	-.115*	1	
PF	3.7756	.78834	.044	.236**	.446**	.205**	.483**	.373**	.040	.551**	1

*. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed).

Table 2 shows the relationship between different variables. The ITEP is negatively and weakly correlated with ITIF because the correlation coefficient is negative and also less than 0.05. SITA is positively but weakly correlated with ITIF. SITA is positively and weakly correlated with ITEP with correlation coefficient of 0.117. COMO is positively correlated with ITIF and ITEP.

Table 3 shows the model summary of regression analysis. R-Square is the coefficient of determination. R-Square indicates the percentage change in the dependent variable due to the independent variables. R Square value is 0.412, it means that 41% change in firm's performance (dependent variable) is due to the independent variables (ITIF, ITEP, SITA, COMO, CUSO, INFS, COOR, and RESP). The value of F is 26 with $p<0.0001$. This indicates that the estimated model is a good fit.

This table shows that cooperation (COOP) has a positive relationship with firm's performance. The value of beta is 0.004, which is positive and the level of significance is (0.02). The relationship is significant. The relationship between responsiveness (RESP) with firm's performance is positive. And the relationship is highly significant with p-value < 0.00. Beta value is 0.357, which is positive and shows positive relation. IT expertise (ITEP) has a positive relationship with firm's performance with beta value of 0.096 is positive, significant at 0.05 level. IT infrastructure (ITIF) has a positive relationship with firm's performance with beta of 0.041, but insignificant.

Table 3. Coefficients *(R-square =0.412; F= 26, p<.0001)*

Model	Beta	Std. Error	Sig.	Tolerance	VIF
(Constant)	.079	.320	.806		
SITA	.177	.067	.008	.672	1.489
COMO	-.008	.051	.872	.811	1.233
CUSO	.204	.065	.002	.603	1.658
INFS	.113	.037	.002	.803	1.245
COOR	.004	.002	.021	.980	1.020
RESP	.357	.064	.000	.598	1.672
ITEP	.096	.047	.042	.856	1.168
ITIF	.041	.037	.279	.985	1.015

H1: IT infrastructure has a significant impact on firm's performance.

The results of this hypothesis show that there is no impact of IT infrastructure on firm's performance. The result of regression analysis shows there is a positively insignificant relationship between IT infrastructure and firm's performance as the p-value >0.05. Hence, H1 is rejected. It implies that there is no change in firm's performance by changing IT infrastructure.

H2: IT expertise has a significant impact on firm's performance.

The results of this hypothesis show that there is an impact of IT expertise on firm's performance. The result of regression analysis shows there is a positive and significant relationship between IT expertise and firm's performance as the p-value <0.05. Hence, we accept H2. It implies that increase in IT expertise improves firm's performance.

H3: Strategic IT alignment has a significant impact on firm's performance.

The result of regression analysis regarding strategic IT alignment is positive and significant. It shows that there is an impact of strategic IT alignment on firm's performance. The value of P is less than 0.05 so we accept H3. It means that any positive change in IT strategies affects firm's performance positively.

H4a: Competitor's orientation has a significant impact on firm's performance.

The results of this hypothesis show that there is no impact of competitor's orientation on firm's performance. There is a negative but insignificant relationship between competitor's orientation and firm's performance as the p-value >0.05. Hence, we reject H4a. It implies that increase in competitor's orientation has no impact on firm's performance.

H4b: Customer's orientation has a significant impact on firm's performance.

Customer orientation has a positive impact on firm's performance according to the results of this study. Regression analysis of this study shows that there is a positive and significant relationship between customer orientation and firm's performance with p-value < 0.05. It shows that positive change in customer orientation helps in enhancing firm's performance.

H5a: Information sharing has a significant impact on firm's performance.

According to the results information sharing system has a positive impact on firm's performance. The results of regression analysis show p-value < 0.05. We can conclude that there is a positive and significant relationship between information sharing and firm's performance. It means that improvement in information sharing flow is associated with improvement in firm's performance.

H5b: Coordination has a significant impact on firm's performance.

The result for this hypothesis show that there is an impact of coordination on firm's performance. The results of regression analysis show that there is a positive and significant relationship between coordination and firm's

performance as the p-value <0.05. Hence, we accept H5b. The result implies that an increase in the coordination among firms is associated with an increase in firm's performance.

H5c: Responsiveness has a significant impact on firm's performance.

Responsiveness has a positive impact on firm's performance according to the results of this study. The results of regression analysis show that there is a positive and significant relationship between responsiveness and firm's performance. It shows that an increase in responsiveness improves firm's performance. Hence, we accept H5c.

Table 5.   Results of Hypotheses

Hypotheses Statements	Coefficients	Results
H1: IT infrastructure impacts positively on firm's performance.	0.041	Rejected
H2: IT expertise impacts positively on firm's performance.	0.096	Accepted
H3: Strategic IT alignment impacts positively on firm's performance.	0.177	Accepted
H4a: Competitor's orientation impacts positively on firm's performance.	-0.008	Rejected
H4b: Customer's orientation impacts positively on firm's performance.	0.204	Accepted
H5a: information sharing impacts positively on firm's performance.	0.113	Accepted
H5b: coordination impacts positively on firm's performance.	0.004	Accepted
H5c: responsiveness impacts positively on firm's performance.	0.375	Accepted

5. CONCLUSION AND LIMITATIONS

This study aims at explaining the effect of various determinants of firm's performance in today's highly competitive and IT-oriented environment. First, a theoretical model based on Resource-Based View (RBV) was developed. Then a questionnaire was developed to generate data for the estimation of the proposed data. Data was collected from managers from services and manufacturing concerns. After collecting and analyzing the data comprehensive results have been arrived at.

This study is a cross-sectional study in which we have estimated the impact of IT technologies on the firm's performance. In future, deeper analysis can be done on longitudinal data. This study shows the results regarding the relationship between dependent and independent variables. Findings of this research are helpful for service and manufacturing sectors selected for this study. Every sector or even every organization wants to improve their firm's profitability or performance. The results of the present study indicate that by adopting the latest technology in the working environment, firm's performance can be enhanced. It can also reduce the cost of production and would be beneficial for increasing the operational productivity.

Our research findings have some theoretical implications. In future, comparative analysis can be done to estimate the relative effectiveness of IT usage in different sectors in terms of gaining cost and operational efficiencies. The results of our study has implications for the firms also. Firms can enhance their performance by emphasizing on IT implementation and usage. Firms should use the latest technology for better performance. Firms should be investing more in their IT infrastructure for improvement in their production.

In the beginning of the 1980s, research on IT investment showed that there is no link between IT investment and firm's performance. Firm's productivity is not influenced by IT investment. However, later on the concept of "IT Productive Paradox" was launched (Wamba et al., 2017). With the passage of time and technological advancements, the studies showed that IT investment has a huge impact on the firm's performance (Kohli & Devaraj, 2003). It has been found that development in IT brought a revolutionary change in the business field. E-business has an effective role in increasing the efficiency of firms. The results showed that the role of IT and its implemention play a remarkable role in firms' growth. Regression analysis has been done and it has been found that there is a change in firms' performance by changing coordination among customers, marketers and firms. An increase in the usage of IT can lead to an increase in the productivity and profitability of the firms. The positive changes in responsiveness brought positive enrichment in firms' performance and development.

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