

**RESEARCH ARTICLE****Information Technology Acceptance and E-business Adoption in Organizations**

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**ABSTRACT**

The key forces which are bringing changes in e-business sector are caused mainly by Information Technology (IT) Services. E-business technologies are considered as the latest in the line of new information communication technologies (ICTs). It is found that the increment in competitiveness through the rise in the efficiency of organization as well as the ease in the development of new products and services is facilitated by ICTs when utilized effectively. Many large organizations along with small-, medium-, and micro-sized companies have shown keen interest toward e-business adoption (EBA). This study is conducted to analyze the impacts of IT on EBA and to understand the effects of quality IT strategy in e-business performance. The focus of this study is Chinese users through an online survey. The measurement instrument of this research model developed from various studies has determined the factors in a multi-dimensional manner which shows these effects of these factors in real e-business behaviors of China and their relations. The companies which adopted e-business have achieved success in business and have expanded sales in wide geographical areas as per the findings of the study. It was found that organizational factors such as profitability, size of operation, and investment at the corporate level did not affect the strength of the adoption of e-business tools. The key challenges found were the definition of web activities for leading to achieve strategic objectives and training workshop to work on the internet. The results of these findings are then drawn together in the concluding section of the paper.

**Key words:** Adoption, e-business, information technology, online platform

**INTRODUCTION**

Revolutionary development in information communication technology (ICT) in the past 20 years has impacted individuals as well as businesses in an insightful way. It is an invaluable and powerful tool driving development, supporting growth, promoting innovation, and enhancing competitiveness.<sup>[47]</sup> E-business is a process of conducting business on the Internet, not only buying and selling but also serving customers and collaborating with business stakeholder. Organizations realize that putting up simple websites for customers, employees, and partners do not create an e-business. Businesses similar are turning to IT to improve business competence, service quality (SQ), and attract new customers.<sup>[47,49]</sup> E-business allows businesses to

adjust to new markets and business opportunities by increasing their sales, reducing their cost of transactions, and increasing flexibility in communicating with business partners.<sup>[75]</sup> The major benefits of e-business in the literature are mentioned as increased sale,<sup>[24,69]</sup> improved distribution channels,<sup>[69,75]</sup> and improved customer services.<sup>[29,58,69,75]</sup> E-business, derived from the term e-commerce, is the conducting of business on the Internet, not only buying and selling but also serving customers and collaborating with business partners. The organization should decide what it is or will be that sets them apart from competitors. One of the main challenges for e-businesses is the rise of social media networking platforms such as Facebook, Twitter, YouTube, and MySpace allowing individuals and people to interact and share their views and experiences with unrestricted virtual environments.<sup>[56]</sup>

Customer satisfaction and customer retention are increasingly developing into key success factors in e-business.<sup>[1]</sup> Although customer acceptance

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is a key driver determining the rate of change in the e-business sector, empirical studies on what is holding customers from acceptance of e-business services have been few. To implement e-business successfully, a unified internal e-business integration environment must be established to integrate the internal system and thus realize a unified internal mechanism within the enterprise e-business system. The service-oriented architecture (SOA), however, can well meet the above requirements. The integration of SOA-based applications can reduce the dependency of different types of IT systems, reduce the cost of system maintenance and the complexity of the IT operation, increase the flexibility of the system deployment, and at the same time exclude the barrier of service innovation.<sup>[49]</sup> The capability of information systems has a direct and significant effect on the quality of IT strategy implementation, and the quality of this process could affect e-business adoption (EBA).<sup>[11,27]</sup> It is found that e-business is used more intensively by the medium-sized and large firms. It may seem that medium-sized and large organizations are somewhat similar, but there are differences between small- and medium-sized firms. The use of IT outsourcing is mainly used by small firms as a key factor to use e-business.<sup>[82]</sup> A moderate e-delivery policy is associated with increased order frequency, decreased average value of purchased items, increased probability of return, and increased average value of returned items.<sup>[45]</sup> E-business as a huge prospective in the developing countries has been possible by Internet diffusion.<sup>[55]</sup>

Today, large organizations are found to have adopted e-business concept widely while small- to medium-sized companies are slowly adopting it.<sup>[1]</sup> The emergence of e-business has changed our traditional concept of buying and selling process into an online-based process. In fact, it is a new way of conducting a business. Organizations are also looking forward for a better way to adopt the e-business concept and to improve their business operations.<sup>[29,60,66]</sup> A number of Internet strategies for small businesses allows the business owners to perform study on the industries, competitors, and the potential market as well as looking for information on suitable products or services. Clegg and Tan<sup>[14]</sup> claim that a micro-sized company needs to develop the way it communicates with suppliers and customers as well as to come out

with a well-designed, well-executed plan and strategies to face the challenges of e-business.

The investigation of the effect of IT on EBA and implementation strategy with the view to understand the influence of quality IT strategy on e-business performance is the chief objective of this paper. Reduction in coordination costs as well as the path to efficient electronic markets is possible through the adoption of IT in e-business according to the literature.<sup>[18,29]</sup> Manufacturing using e-business tools adds qualitatively new levels of complexity and requires additional competencies for functions such as computer-aided manufacturing. E-business has the potential to benefit not only producers but also users of services and products, and numerous benefits from its adoption have been cited in the literature.<sup>[22,71]</sup> E-business is also expected to reduce operational costs since electronic information tends to be more accurate, timely, and easily available. Another benefit of e-business could be the higher efficiency obtained in business transactions due to prompt and accurate processing of information. Web-based services are likely to strengthen the competitiveness of organizations as these technologies may change the relationship with customers by creating a stronger link between firms and their clients.

The structure of this paper is organized as follows: The next section provides a theoretical background of this study. Then, conceptual framework and hypothesis development of the research are presented. Methodology and results are provided in the next section. Subsequently, the study is followed by a discussion of findings. After that, it follows discussion and implications. Finally, conclusion and possible future work of this study are provided with recommendation.

## THEORETICAL BACKGROUND

This section mainly focuses on organizational innovation, e-business, and business models. External and internal forces are the driving innovative processes. External forces are related to institutional, technological, managerial, social, and professional factors that influence activity. Internal forces are established by formal structures dedicated to novelty. Lubeck *et al.*<sup>[52]</sup> stated that some of the forces that persuade innovation are relations between research and innovation

processes, external forces, such as customers, competitors, government, and suppliers. Tidd *et al.*<sup>[76]</sup> argued that a company must have a strong competitive advantage to conduct something that no other companies do it more effectively. Thus, it is very important to identify innovations before their competitors so that company executives can develop different skills and organizational capabilities. The importance of elaborating a business model applies to all companies, so this activity is appropriate for small businesses to improve their results through e-business.

When adopting new technologies, companies must acclimatize the technologies to their own sociotechnical characteristics.<sup>[77,43]</sup> Furthermore, Turban *et al.*<sup>[80]</sup> claim that few innovations in human history have provided as many advantages as e-business. Laudon and Traver<sup>[46]</sup> discussed other advantages derived from adopting e-business, including lower supply-chain costs, lower distribution costs, an ability to reach and serve customers who are spread out over a greater geographical range, and the ability to react quickly to the preferences and demands of consumers. Hartman and Sifonis<sup>[33]</sup> identified several activities that businesses should engage into succeed in e-business. Thus, it is important for companies that are effectively structured for e-business to generate business models that will enable them to accomplish the desired results. According to Osterwalder *et al.*,<sup>[59,54]</sup> a business model should address the relationship between business strategy, the company's organizational structure, and the available technological resources. These factors are influenced by technological changes, customer demands, competitive market forces, the social environment, and the legislation in the jurisdiction where the company is located.

### **The adoption model: Diffusion of innovation**

ICTs have developed due to the adoption and diffusion process of the technology itself. Even if these concepts are quite different theoretically, they are found to have been repeatedly discussed together. The adoption process model was first introduced by Rogers,<sup>[67]</sup> based on the fact that an individual goes through a series of steps which are knowledge, persuasion, decision, implementation, and confirmation. Rogers defines diffusion as a process by which an innovation

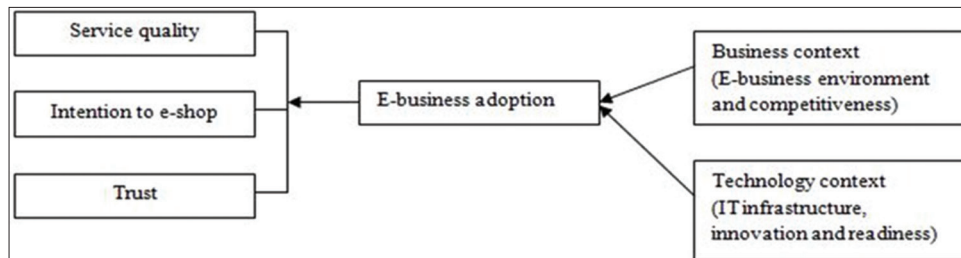
is communicated through certain channels over time among the members of a social system. In addition, innovation has been described as an idea, a product, a technology, or a program that is new to the adopting unit. The diffusion of innovation theory proposes that perceptions of technical characteristics such as its relative advantage, compatibility, complexity, trialability, and observability impact the adoption of any new product including e-business. Roger's theory is used by many researchers in their studies to explain the adoption of Internet, intranet, and extranet technologies for e-commerce applications.<sup>[75]</sup> These studies have depicted that the diffusion of innovation follows an S-curve.<sup>[53]</sup>

## **CONCEPTUAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT**

The logical framework or research model on EBA is shown in Figure 1. A broad literature review is a key factor in the development of this model. The first part of the block is relating to the variables motivating individuals' to use e-business services. The variables are SQ, intention to e-shop (IE), and trust (TR). In this case, these variables act as independent variables while the dependent variable is EBA. The variables of the second block are business context (BC), which is described in terms of e-business environment and competitiveness, and technology context (TC), which is measured in terms of IT infrastructure, innovation, and readiness. These are the variables explaining the EBA effect on their environment. In this case, the variables act as dependent variables and EBA acts as an independent variable.

### **SQ and EBA**

Even if e-service provider is given support, SQ measures the overall support provided by online providers.<sup>[19]</sup> Sun and Lina<sup>[74]</sup> examined the quality of e-business websites and found that it should provide user attractiveness. According to an analysis from the Eastern Integrated consumer profile,<sup>[26]</sup> the consumers' online shopping behavior is greatly affected by the quality of the e-business website design. The services found in websites should be improved to increase market share in the face of high competition. The SQ in EBA is different from the traditionally studied SQ, which



**Figure 1:** Conceptual framework

has been focusing on the services in organizations.<sup>[5]</sup> The quality of e-business website service is related to product promotion, an efficient and rewarding shopping experience, and reliable product or service delivery. The quality of the e-business service is defined by the consumers' feelings about the level of service while browsing the website, placing an order, making a payment, or otherwise interacting with the online store.<sup>[51,83]</sup> Pavlou *et al.*<sup>[61]</sup> confirmed that e-business website characteristics such as information security concerns and information privacy concerns influence users' perception of the uncertainty of their relationship with online service providers. Therefore, sellers are found to have considered high-quality relationships with the online marketplace with high information and system qualities and good services. Bauer and Folk<sup>[6]</sup> developed a transaction process-based model scale for measuring SQ in EBA. Hence, the following hypothesis was developed based on the above-mentioned arguments and explanations:

H1: Service quality positively influences e-business adoption in online platform.

### IE and EBA

It is natural for the consumers to expect support from the website while shopping online. For example, obtaining accurate and accessible information on target products and services is essential for consumers. The perceived information quality, SQ, and system quality are important three factors for evaluating the quality level of a website because they define the success of a website and IE.<sup>[10]</sup> Individual attitudes toward a certain type of behavior are determined by individual beliefs and evaluations about the consequences of the behavior.<sup>[72]</sup> Attitudes are defined as an individual's overall evaluation of performing a behavior. According to the theory of planned behavior, individual attitudes affect the behavioral intentions of users, which in turn influence their actual

behavior. The stronger the positive attitude toward e-shopping, the stronger their attitude in adopting and using it. The gender gap existing in online shopping was the topic of the study performed by Bae and Lee.<sup>[4]</sup> This study examined the effect of online consumer reviews on consumers' purchase intention. Their findings indicate that the outcome of online consumer reviews on purchase intention is stronger for females than males. A number of e-business studies have shown that consumers' intentions to engage in online transaction are significant predictors of their actual participation in e-business transactions.<sup>[41,63]</sup> Thus, we propose the following hypothesis.

H2: Intention to use e-business technology directly influences e-business adoption

### TR and EBA

TR is an emotional phenomenon, and dispositional elements are highly effective in determining the TR's willingness to accept susceptibility.<sup>[21]</sup> Satisfaction and the maintenance of long-term EBA are possible through TR.<sup>[42,84]</sup> Conchie *et al.*<sup>[15]</sup> observed the distrust links to acts such as untruthfulness and wickedness. When consumers recognize that the risks concerning to security, privacy, deception, or reliability are near to the ground, their perceptions of expected benefits increase, thereby increasing their desire to repurchase from the e-business websites that provide satisfaction.<sup>[68,88]</sup> Tomlinson and Mayer<sup>[78]</sup> argued that positive outcome reinforces the trusting beliefs, whereas TR turns back when the TR experiences negative results. Above all, non-deception refers to the consumer belief that an EBA will not use misleading practices to influence consumers to purchase e-products.<sup>[50]</sup> The study suggests that word-of-mouth constitutes a powerful marketing tool<sup>[3,35,68]</sup> for EBA and marketers realize its importance with regard to its implications for TR and associated outcomes. In addition, word-of-mouth influences



customer-employee relationships in organizations, consumer involvements, and activities.<sup>[40]</sup> Vasalou *et al.*<sup>[81]</sup> investigated the cause of TR decline and argued that people tend to evaluate dishonest behavior more seriously than positive behavior. TR management has been considered as one of the most important factors in online platform. Loyal online customers are highly beneficial for e-business service providers. A useful way to realize consumers' orientation toward e-service providers is by investigating their reliability tendencies.<sup>[3]</sup> Therefore, we propose the following hypothesis:

H3: Trust on e-business technology positively and directly influences e-business adoption in online system.

## EBA

Wu *et al.*<sup>[87]</sup> examined two important issues associated with e-business. The first one was on the issue on capabilities that might impact a company's capability to establish e-business success and execute better, where organization level e-business success is evaluated using e-business serviceability and IT-enabled collaborative advantages; and the second one was related to whether the two ways of measuring e-business success provide in a variety of effects on organizational performance. A hybrid method for measuring the performance of e-business investments in high-tech manufacturing can be used.<sup>[85]</sup> Not only the financial figures but also the other measures were used to measure the performance. Many e-business models are created by web-based applications which have brought tremendous changes on the face of economy.<sup>[70]</sup> Koellinger<sup>[44]</sup> investigated the relationship among technology, innovation, and firm performance in an empirical investigation from e-business. Wu and Lu<sup>[86]</sup> investigated the relationship between customer relationship management and e-business performance for real-world case study of hotel industry. A conceptual model for performance measurement in the e-business environment was presented by Bremser and Chung.<sup>[7]</sup> The presentation of a framework for developing performance measurement metrics in the e-business environment using balanced scorecard methodology with existing taxonomies of e-business models is a major focus of this

study. Kim *et al.*<sup>[41]</sup> investigated the effect of strategic positioning on firm performance in the e-business perspective. They found that innovative differentiation strategies along with technological resources can bring strong changes in firm performance in the e-BC. The context has significant instability in technological development. The study performed by Trkman *et al.*<sup>[79]</sup> depicts the impact of business analytics on supply chain performance along with a significant relationship between analytical capabilities and performance. Organizations apply e-business technologies to build up subcontracts, payment costs, better customer service, more efficient production, logistics, and commercial systems. To improve the assets devoted to profitable investments which will be made in e-business technologies, companies should provide special importance in terms of results and costs to be reached.<sup>[9]</sup> Efficiently used e-business technologies have significant contributions in implementation of the perfect integration.<sup>[20]</sup> ITs provide companies the chance of increasing their worldwide markets.<sup>[34]</sup>

## EBA and BC

The BC delivers the external factors needed to adopt e-business. Businesses need to adopt e-business as they organize their applications more on an international basis.<sup>[23,29]</sup> Previous research<sup>[48,71]</sup> shows that e-business has an effect on the performance of the organizations. The interaction among businesses through e-business can increase benefits to their buyers and suppliers. The overall productivity can be increased if there is an increase in adoption of e-business by individual firms' processes.<sup>[25]</sup> In this way, the e-business development in an organization expands along with an increase in the economic growth of the nation. Business dimension has two indicators: Business environment and business competitiveness. Business environment provides to the general business atmosphere. It is primarily concerned with the operations that affect firms in a nation such as government activities, social and economic factors, and technological developments. An enhanced business environment can lead to an increase in e-business development of a country. Business competitiveness is another indicator of business aspect. The business competitiveness is

an indicator of the microeconomic capabilities of its constituents through efficiency and living standards.<sup>[64]</sup> The adoption and implementation of e-business and marketing, as well as the influence of the benefits of web technology for destination marketing, are not the same across the sector as indicated by Burgess *et al.*<sup>[8]</sup> From the previous study, we can deduce that the performance of large firms is greatly influenced by e-business because e-business enable them to transact with each other efficiently and effectively.<sup>[17]</sup> This increase in performance of companies leads the national performance of the business firms in aggregated way. This increases the productivity of a nation as a whole, leading to an increase in business competitiveness.<sup>[25]</sup> Hence, we can state that business competitiveness and e-business development has a positive relationship. From the above arguments, it can be postulated that:

H4: E-business adoption directly influences the business context in online network.

### EBA and TC

According to the previous studies, IT-related variables such as technology infrastructure, technology innovation, and technology readiness are considered chief factors for EBA.<sup>[73,89]</sup> Combining variables related to technology, TC was proposed as one of the constructs that affect EBA. The dimension has three variables: ICT infrastructure, technological innovation, and technological readiness. ICT infrastructure refers to technologies that enable Internet-related businesses. ICT Infrastructure has influence on the volume of e-business transactions.<sup>[31]</sup> A better ICT infrastructure enhances EBA as well as development.<sup>[29]</sup> Technological innovation refers to innovate new technologies to increase their output. Different nations need to adopt different technological innovations to be competitive in a global financial system. Phan<sup>[62]</sup> posits that e-business is always forced by competitive advantages by nations. Technological readiness “consists of technology infrastructure and IT human resources, and technology infrastructure refers to technologies that enable Internet-enabled businesses and IT human resources refer to IT professionals possessing the knowledge and skills to implement Internet-related applications.”<sup>[89]</sup> Physical assets and human resources are important factors that affect technological readiness. Technology infrastructure

builds a platform for the e-business; IT human resource provides knowledge required for e-business applications.<sup>[11]</sup> Therefore, countries with greater technological readiness are in a better position to adopt e-business. Therefore, technological readiness has a strong effect on the EBA. Apart from the above indicators, many other technological factors such as technology availability and technology usage can contribute to EBA. Robinson *et al.*<sup>[65]</sup> investigated how consumers actually interpret and are influenced by EBA. Online product reviews in the form of text effectively extract accurate, reliable, influential and useful information from the information collected from informal product reviews. They explored the textual factors in online product reviews aiming to suggest an approach which effectively. From the above discussion, the following hypothesis is postulated about e-business technology.

H5: E-business adoption significantly affects technology factors in e-business technology.

## METHODOLOGY AND RESULTS

### Data collection

Online survey was conducted from Chinese users in this study from March 2013 to June 2013 to collect data. The measurement instrument included in the research model was developed as a result of several studies. The purpose of the measurement instrument was to determine the factors that were believed to affect real e-business-related behaviors of China and the relations between these factors in a multidimensional manner. A questionnaire was developed to measure the relevant constructs. The items included in the measurement device were translated from English to Chinese. A 7-point Likert scale was adopted in the measurement device, ranging from “strongly agree” to “strongly disagree.” The majority of the measures used in the current study were taken from previously validated sources<sup>[13,29,30,37,38,64,71]</sup> and some of them were adapted from literature.

The Cronbach alpha and composite reliability for each dimension exceed the 0.7 limit, recommended by Nunnally<sup>[57]</sup> to indicate a reasonably high reliability of the research measures and constructs. Furthermore, the factor loading of each measurement item is adequate in line with recommended threshold values.<sup>[32,57]</sup>

## Survey result

In many studies where online surveys are used, the number of Internet users is taken into account when determining the size of the sample.<sup>[16]</sup> The rate of Internet usage in the 16–75 age group in Chinese cities is 59.6%. To accumulate relevant data, member users in 3 different forums were asked to participate in an online survey through the Internet. Self-selection and intersection probability-based sampling approaches were employed to create a sample. In these forum pages, a casual digital search determined 851 people to whom invitations were sent to participate in the survey. At the end of the application, 511 persons answered the survey questionnaires. Respondents were assured that their individual responses would be treated with anonymity and privacy. Participation in the study was voluntary.

Among the sample participants, 42% stated that they used the Internet for 20 h or more; 21.7% for 10–20 h, 33.3% for 3–10 h, 14% for 1–3 h, and 2.7% for <1 h (on a weekly basis). 130 participants (25%) stated that they had bought seven or more products online during the last year; 39.2% stated that they had bought no tangible products online so far. Table 1 shows the participants' demographics. The participants' average work experience was 14.5 years (s.d. = 12.11). The majority of participants, i.e., 42% are in between the age of 21 and 30. The gender is dominated by male having 64.8%. 36.6% of participants are having primary education. Majority of respondents (17.8%) are engaged in advertising and marketing activities.

## Research constructs and items

Each construct of IT acceptance and EBA has 4 items. The total number of measurement items was 24. The constructs are SQ, IE, TR, and EBA. Similarly, other constructs are BC and TC. The survey item SQ3, TR4, and BC1 were deleted due to lower factor loading, below 0.6. Table 2 provides descriptive statistics and reliability values.

Entire loadings of each construct in Table 2 are above 0.707. Thus, they are satisfactory. Composite reliability is also in acceptable range having a value higher than 0.70. Average variance extracted (AVE) is also >0.70.

## Data analysis

The partial least squares (PLS) technique of structural equation modeling was used for data analysis. The specific tool used was Smart PLS 2.0, which was created by Ringle *et al.* (2005). The PLS supports two measurement models: (a) The assessment of the measurement model and (b) the assessment of the structural model. It is thus more reliable than SPSS, AMOS, and other tools.

**Table 1:** Sociodemographic profile of sample

Variable	Frequency (%)
Age, years	
Below 20	209 (40.9)
21–30	215 (42)
31–40	61 (11.9)
41–50	18 (3.5)
51–60	7 (1.4)
Above 60	1 (0.2)
Gender	
Male	331 (64.8)
Female	178 (34.8)
Do not want to indicate	2 (0.4)
Education	
Primary education	187 (36.6)
Secondary education	211 (41.3)
College/Bachelor's education	61 (11.9)
Postgraduate degree	26 (5)
Doctoral degree	8 (1.6)
Others	18 (3.5)
Monthly family income	
Below 3000 RMB	21 (4.1)
3001–5000 RMB	151 (29.5)
5001–7000 RMB	163 (31.9)
70001–10000 RMB	91 (17.8)
10001–15000 RMB	61 (11.9)
Above 15000 RMB	24 (4.7)
Business type	
Advertising, marketing	91 (17.8)
Manufacturing	89 (17.4)
Retail, wholesaling	73 (14.2)
Construction	34 (6.6)
Education	37 (7.2)
Hotel, hospitality	44 (8.6)
Insurance, accounting firm	55 (10.8)
Real estate, legal firm	41 (8)
Others	47 (9.2)
Bought seven or more products online (25%)	
Bought no tangible products online (39.2%)	

RMB: Chinese Yuan (Renmenbi)

**Table 2:** Descriptive statistics and reliability values of constructs

Construct	Items	Mean $\pm$ SD	Factor loading	Composite reliability	AVE
SQ	SQ1	4.41 $\pm$ 1.58	0.819	0.87	0.68
	SQ2	4.20 $\pm$ 1.41	0.781		
	SQ4	3.98 $\pm$ 1.38	0.910		
IE	IE1	3.79 $\pm$ 1.80	0.960	0.92	0.76
	IE2	4.18 $\pm$ 1.77	0.876		
	IE3	4.90 $\pm$ 1.58	0.882		
	IE4	3.78 $\pm$ 1.62	0.927		
TR	TR1	3.87 $\pm$ 1.45	0.891	0.94	0.87
	TR2	4.08 $\pm$ 1.59	0.796		
	TR3	2.84 $\pm$ 1.63	0.823		
EBA	EBA1	4.11 $\pm$ 1.82	0.968	0.87	0.91
	EBA2	4.75 $\pm$ 1.67	0.911		
	EBA3	4.02 $\pm$ 1.52	0.889		
	EBA4	3.90 $\pm$ 1.60	0.909		
TC	TC1	2.91 $\pm$ 1.48	0.968	0.95	0.83
	TC2	3.85 $\pm$ 1.57	0.952		
	TC3	4.21 $\pm$ 1.66	0.886		
	TC4	4.30 $\pm$ 1.70	0.848		

SQ: Service quality, IE: Intention to e-shop, TR: Trust, EBA: E-business adoption, TC: Technology context, AVE: Average variance extracted

**Table 3:** Interconstruct correlations and the square root of AVE

Construct	SQ	IE	TR	EBA	BC	
SQ	0.876					
IE	0.257	0.856				
TR	0.302	0.262	0.912			
EBA	0.341	0.254	0.323	0.889		
BC	0.347	0.347	0.312	0.347	0.746	
TC	0.331	0.442	0.210	0.320	0.311	0.867

SQ: Service quality, IE: Intention to e-shop, EBA: E-business adoption, BC: Business context, TC: Technology context, AVE: Average variance extracted

### Assessment of the measurement model

The psychometric properties of the research model were examined by the following indicators: Internal consistency, convergent, and discriminant validities. Hair *et al.*<sup>[32]</sup> suggest that item loadings of 0.5 are adequate; those with values lower than 0.5 were deleted from the scales accordingly. The composite reliabilities for each of the study's constructs were all above the recommended 0.7 level to indicate the internal consistency of the data.<sup>[12,32]</sup> Fornell and Larcker<sup>[28]</sup> recommend that the AVE was followed in assessing the convergent validity. These scholars suggested that an AVE value of 0.50 is ideally acceptable as it indicates that a latent variable is able to explain more than half of the variance of its indicators on average. The discriminant validity is assured when the

following two conditions are met: (a) The value of the AVE is above the threshold value of 0.50 and (b) the square root of the AVEs is larger than all other cross-correlations. Table 2 shows that the AVE ranged from 0.68 to 0.91 (excluding the single-item variables). There was no correlation between the constructs greater than the squared root of AVE [Table 3]. On the whole, the results showed that the study's measures were psychometrically adequate for this study.

### Assessment of the structural model

The structural model provides information related to the path significance of hypothesized relationships using the path coefficients ( $\beta$ ) and the squared R ( $R^2$ ).

The strength of the relationship is indicated by the  $\beta$ .<sup>[12]</sup> The Smart PLS 2.0 results for the  $\beta$ s and the  $R^2$  are shown in Figure 2. The path significance levels (t-values) are estimated by the bootstrapping method. Of five, four hypotheses were supported. Hypothesis (H1) was accepted as the SQ of e-business websites is crucial in enhancing EBA. This result shows that the adoption of IT in e-business allows a reduction in coordination costs and leads to efficient e-markets.<sup>[18,29]</sup> Furthermore, the data analysis supported hypothesis (H2), which predicted that intention to e-shopping



increases IT acceptance on EBA. This result shows that consumers' intentions to engage in online transaction are significant predictors of their actual participation in e-business transactions.<sup>[41]</sup> The data did not provide support for the hypothesis (H3). It was influenced by common method bias and generalizability. Similarly, hypotheses H4 and H5 are accepted as business factors and technology factors are crucial for EBA. These arguments support the findings of Victoria *et al.*<sup>[82]</sup> that organizations employ IT outsourcing as a key factor to use e-business. The Internet diffusion has made e-business a huge prospective in many nations.<sup>[55]</sup> All the variables together explain 45% of the variance in the dependent construct. This indicates that the proposed research conceptualization possesses adequate predictive power and is useful in explaining the acceptance of IT for EBA. The capability of information systems has a direct and significant effect on the quality of IT strategy implementation, and the quality of this process could affect EBA.<sup>[11]</sup> Further discussion on the results is presented in the next section.

## DISCUSSIONS

This study complements the emerging desire among some researchers to specifically focus on and bring into the important issues related to the acceptance of IT and EBA. The studies conducted by Premkumar and Roberts,<sup>[64]</sup> Scupola,<sup>[69]</sup> and Grandon and Pearson<sup>[30]</sup> are very convenient and advanced to use ICTs for e-business. At the same time, there are a lot of challenges for all involved parts - industry and society. These challenges are primarily related to the adoption of the e-business technologies that directly impact the consumer behavior. Online selling provides a relatively low cost of reaching a large customer. Moreover,

the geographical reach of a website is far greater than that of a traditional business. If a digital commodity is being sold, then multiple copies can be distributed across the Internet at zero marginal cost. A higher degree of organizational restructuring is required for businesses making the transition to e-business itself. E-business involves reconfiguration of the business-customer interface with the aim of constructing a seamless web between customers and suppliers.<sup>[71]</sup> The product involvement in consumer experience has been found that it is connected with some extent of perceived risk.<sup>[40]</sup> E-business services are intangible, and they cannot be evaluated before their consumption. Thus, e-business requires the introduction of new financial management practices and support systems due to the high degree of complexity and the need for continuous information collection and monitoring.

The commercial benefits of e-business are described first as significant opportunities for organizations to expand their geographical coverage. Second, there is high scope for gaining competitive advantage through improved customer communications and management. E-business websites are now becoming increasingly common. Third, the Internet reduces barriers to entry for new market entrants and provides an opportunity for organizations. Finally, the IT facilitates the development of new types of products and new business models for generating revenues in different ways. The Internet offers an affordable means of capturing and processing the information generated through electronic transactions. This research effort provides support to prior studies that had highlighted significant of such factors in comparable research.<sup>[13,29,36,39]</sup> E-business is thus associated with the adoption of systems based on open, Internet-based standards.

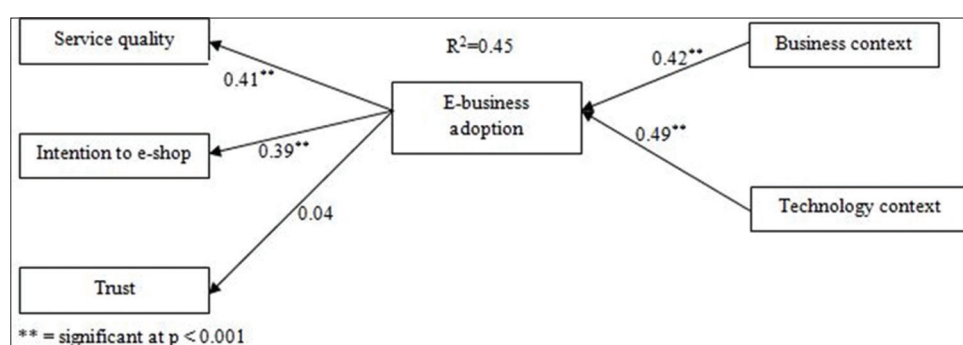


Figure 2: Results of the structural model

The strength of the adoption of e-business tools was not affected by organizational factors such as profitability, size of operation, age of company, and per capital investment at the industry level. There are significant variations in the conduct and performance of firms that use lower levels of e-business tools from those categorized as the most advanced users. The overall findings indicate that the impact of e-business technologies adoption is observed in a positive light by the participating suppliers. The environmental factors of firm size and industry type did not appear to have any consequential relationships with IT acceptance to support the views espoused by other information system researchers. The companies have a broader view of e-business benefits than cost reduction. E-business providers experience many barriers that they need to overcome for the successful adoption of e-business technologies. Conventionally, where products and services are similar, organizations have been able to make substantial profits because it has been costly for consumers to compare prices at retail outlets that may be great distances apart. Online markets, now widely available in many forms through the Internet, can reduce the cost of shopping for consumers. This may force sellers to lower their prices to compete against competitors. In a differentiated market, consumers have to consider not only the price of the goods on offer but also any particular characteristics the goods may have.

### **Theoretical and practical implications**

Organizations expect to advance corporate competitiveness and transform its endeavor through the effective implementation of IT. This study examined how IT could affect the implementation of organization's e-business strategy. Thus, the adoption model for diffusion of IT innovation best suits for this study. The research contributes to better understanding of the specifics of factors what influences consumer behavior in online platform. There are several prospects for further analysis of consumer behavior in online environment. Therefore, it is significant to develop new methods and techniques for the evaluation of consumer behavior in online environment. These findings make important theoretical and practical contributions. On the theory side, benefits and barriers of e-business technologies adoption by organizations are identified, and comparisons

between expected and experienced benefits are highlighted which has not been specifically addressed in the current e-business literature. As the e-business literature is primarily concerned with the benefits and problems faced by buyers, this study helps in reducing a gap in the literature. The improved search capabilities associated with electronic markets through the Internet provide consumers with the benefit of being better informed about the unique characteristics of the available goods. In the long run, it may be impossible for sellers to avoid some loss of market power in such markets. This increases the range of information available to the customer. Future studies could examine the subject from the aspects of technology, organization, and environment to understand these and related aspects.

The introduction of innovative strategy dealing with IT acceptance has become an important topic of this research and has become a focus in the era of e-business. As a consequence, organizations feel that it is important to discover the shortcomings in information system capability factors that must be improved from the individual, group, or organization levels and develop appropriate implementation frameworks for IT strategy based on this groundwork. The results and findings of this study could provide an important reference for IT strategy implementation, in the epoch of e-business. The research has also provided two instruments that could be useful to both e-business website developers and website managers in organizations that encourage employees to use specific intranet websites. Those developers and managers could have users complete the instruments about specific sites. Reception of e-business solutions is one of the challenges emerging in the new economy, which contemporary companies have to face. The level of e-business reception acts as an indirect determinant for the level of competitiveness of a company. It gives way to the efficient application of a wide array of innovations based on ICT and on the Internet infrastructure. Those innovations not only fuel intercompany business processes but also they contribute to the effective cooperation between companies and their stakeholders in the processes of creating an added value for customers.

### **Limitations and future research directions**

The data used in this study are cross-sectional in nature; future efforts could consider using

longitudinal data to assist more imminent. It is possible that other factors not included in this study could be identified to enhance insight. The research framework could be further reinforced with the identification of other relevant organizational and environmental factors. Future research using meta-analytic approaches could investigate the enablers and inhibitors of EBA in organizations. Knowledge from such efforts stands to consolidate theories related to the acceptance of IT and e-business technologies in companies. The study included an IT acceptance, and the possible levels of complications in the use of e-business technologies were not controlled in this study; this may be limiting. This study has opened an opportunity for future research. Some of the above-mentioned limitations could be addressed in subsequent studies.

## CONCLUSIONS

This study highlighted a number of key factors that are likely to influence the adoption of e-business technologies in organizations. Existing theoretical and empirical study on IT acceptance draws attention to the significance of external proficiency, particularly the roles played by e-business providers and external consultancy as key sources of new information and understanding. Drawn together from a variety of research traditions, these facilitate one to map out the dimensions of future theoretical and empirical research. Besides this, we have highlighted the importance of EBA in determining the technology investments and recast discussions of IT acceptance. A number of factors distinguish the IT sector in its potential to expand economic opportunity. First, its products and services enable individuals, organizations, governments, and other stakeholders to expand their e-business opportunities. Second, IT companies know well that this dynamic is not automatic but rather depends on a wide range of other factors. This interdependence has led them to take network strategies which create large numbers of business opportunities for organizations. Moreover, third, underlying these strategies is an elementary collaborative capability and culture. Future research should consider analyses developed by managerial theories of the organization. E-business strategy is often the agreement that is reached through negotiations between managers holding different views and

interests. Successive implementation of e-business involves negotiations between management and the other members of the organization leading to strategic vision. We believe these issues as being of potential interest for future research.

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