

Affecting Factors to Intentions to Adoption of E-Commerce Technologies in SMEs of Pakistan

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Abstract

Purpose: This study confirms the main determinants that affect the intention to the adoption of e-commerce and provides a procedure to analyze and implement practices and indicates the necessary measures. This study integrates the technical composition and determinism of organizational and environmental constructively to build a practical framework for understanding the adoption of e-commerce in SMEs of Pakistan. **Methodology:** This study is an explanatory research, the quantitative approach is employed, data is collected through an adopted questioner, responses of 160 SMEs are selected for analysis through PLS3. **Finding:** The results indicate that technological, organizational and environmental factors have a direct impact on the intention to the adoption of e-commerce on SMEs of Pakistan. The results also show that there is a trend to imitate the Pakistani SMEs who are successfully taken to avoid the risks of e-commerce technologies. **Limitations:** This study is limited to the context of Pakistan. **Implications:** The globalization of the markets, the relationship of national economies and the adoption of e-commerce with the increasing interdependence of national economies are a bit complex to be known about the key factors, but this is considered as a difficult phenomenon to understand e-commerce.

Keywords: E-commerce adoption; SMEs performance; Entrepreneurship; Economy of Pakistan; TAM; TPB.



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1. Purpose of Research

E-Commerce adoption supports SMEs to compete internationally through enhanced efficiency and make more solid relationships between customers and suppliers (Alam and Noor, 2009). Information and communicating connections may also help SMEs to enhance their competitiveness (Swash, 1998). Increasing interest now enjoys the use of e-commerce for many companies. As global economic integration and commercial barriers are reduced, on another way some of the utmost opportunities for SMEs are derived from their aptitude to contribute in national and international marketplaces (Mutula and Van Brakel, 2006). To change the look of pro-active e-commerce competition and marketing more flexible and accessible, companies and suppliers must extend their working hours globally to simplify consumer interaction and payment (Hagell and Lansing, 1994). E-commerce technologies also offer many benefits, especially production improvements, to efficiently reduce transaction cost information between internal and external organizations, and automatic product identification and exchange of information. E-commerce plays a substantial role in resolve the digital divide between well established and growing countries through enhanced access management information system (MIS) and experience. Regardless of location, e-commerce international companies engaged in international trade more efficiently and effectively to expand their own supply chain allows. Therefore, e-commerce can enhance the competitiveness of developing countries and reduce poverty (Qureshi and Davis, 2007). However, research has been controversial, it is the emergence of e-commerce alienation and gaps in developing countries (Odedra-Straub, 2003), Based on many challenges facing developing countries such as diffusion of technology and dissemination of knowledge infrastructure.

2. Theoretical Background

The intentions of e-commerce adoption had received considerable attention from industry groups, policymakers and academics/researchers. The extensive analysis of mentioned theories exposes two broad categories; adoption of e-commerce individually, the adoption of e-commerce at the administratively/organizational level (Oliveira and Martins, 2011).

Theory of Planned Behavior (TPB) by Ajzen (1991) and technology adoption and integration theory (TAIT) (Brown *et al.*, 2010). The institutional theory has also been widely applied to the study of enterprise level. As a result, based on the adoption of e-commerce is based on one of the most of the researches or adoption models (Klopping and McKinney, 2004). Table 1 shows a part of the ideological model used to investigate tissue / individual-level factors, schematically, labeling innovation and spreading spread.

Table-1. Theoretical Model for E-commerce Adoption

Theories	Level of Analysis	Construction	Literature
Theory of planned behavior	Organization	technological innovation	(Agwu and Murray, 2018)
Technology acceptance model	Organization	“security issues, unready business partners, internal constraints, a lack of IT resources and lack of support”	(Rahayu and Day, 2017)
Theory Reasoned Action (TRA)	Organization	“Technology-Organization-Environment (TOE)”	(Rahayu and Day, 2015)
Technology acceptance model	Individual	TOE , TAM , TPB	(Awa <i>et al.</i> , 2015)
Technology acceptance model	Individual	: Perceived usefulness, Perceived ease of use, Attitude, Intentions”	(Sutanonpaiboon and Pearson, 2006)
Resource biased theory	Organization	“Physical assess, Human capital, Organizational capital”	(Zhu and Kraemer, 2005)
Theory of planned behavior	Individual	“Attitude, Subjective norm, Perceived behavior control, Intentions	(Workman, 2005)
Technology Organization Environment	Organization	“Technology. Organization. Environment”	(Wu <i>et al.</i> , 2003)
Diffusion of innovation	Organization	“Relative advantage, Compatibility. Complexity”	(Bradford and Florin, 2003)
Industrial theory	Organization	“Cognitive structure, Normative structure, Regulative structure”	(Chatterjee <i>et al.</i> , 2002)
Structuration theory	Organization	“Motivation, External structures, Internal structures”	(Walsham, 2002)

2.1. The contribution of SMEs in Pakistan Economy

SMEs are important for economic development and development of countries. [Tambunan \(2009\)](#) Discussed that small and medium enterprises contribute 50% of average GDP in high-income countries, and they are also estimated to represent an average of nearly 60% employment percentages in the global manufacturing sector of SMEs. It is also estimated that SMEs represent an average of 75%-90% of firms in more than 90% of employment in most Asian countries. Pakistan, SMEs can dominate the industry and promote economic development, wealth creation and poverty reduction. [Sher Ayub \(2016\)](#) find that SMEs contributing about 40% of GDP Pakistan, SMEs account for about 92% of companies in Pakistan and about 78% of industrial manpower. Therefore, the importance of SMEs in Pakistan's growth is very important. Given the essential role performed by e-commerce in the development of SMEs, it can be considered as an enabling factor for social and economic development and support for decisive and effective political management ([Kazi and Mannan, 2016](#)).

Pakistan has pursued to use e-commerce to enable major developments in digital connectivity between trading partners in the development economic gap. These efforts include the liberalization of the e-commerce sector, which is designed to foster the basis for Pakistani accelerating policy and e-commerce and HR development capacity building. The goal of e-commerce policy (ECT 4AD) is to provide a platform for the protection and promotion of e-commerce industry development in Pakistan enabling e-commerce and Internet use ([Abbasi *et al.*, 2015](#)). Although these developments did, Pakistan still needs betterment in the system to compete for other Asian countries in terms of e-commerce adoptions ([Ruamsook *et al.*, 2007](#)). Furthermore, the Pakistani SMEs seems to lose the benefits of e-commerce technologies, adoption ([Fillis *et al.*, 2004](#)). Some of SMEs try to adopt technologies in the context of e-marketing which shows such indication of fetching in their long-term strategic progress, especially in developing countries ([Bhattacharya *et al.*, 2015](#)).

2.2. E-Commerce Adoption in the Context of Pakistan

Electronic Commerce is defined as products, sales, purchases, transfer or services and/or conversion exchange information through the internet ([Purohit and Purohit, 2005](#)). E-commerce and development of various modern enterprises, markets and trading communities and companies argue that the e-commerce opportunities benefit and increase market access, gain benefits from the scale of the scale, improve profitability, and contribute to economic growth. E-commerce Retail, Services, and Global Business strategy have changed the face. This kind of companies will sell a product and marketing methods and people will have a constant effect on buying it [Buckley and Casson \(2016\)](#). [Yang *et al.* \(2016\)](#) argued significantly reducing costs and improving corporate performance and can be managed through e-commerce economical actors that drive economic activity through market transactions that drive market transactions.

E-commerce is an opportunity in international trade and it can be used effectively when promoting economic development ([Xue *et al.*, 2016](#)). Some studies show the impact on electronic trade as part of developing countries. ([Boateng *et al.*, 2008](#)) Analyzed 181 papers that suggest a roadmap indicating the rank of e-commerce research in developed countries. Research explains in its results and shows the difference between suggestions for future research of e-commerce in developed and countries developing countries ([Kshetri, 2007](#)). [Boateng *et al.* \(2008\)](#) also

said that the e-commerce and the social and economic development of e-commerce can be done by developing a coordinated conceptual model, which can contribute to social and economic growth of developing countries.

Internet users in Pakistan increased significantly by 3,0000 Internet users in 3.430 million in 2017, 20000 people were internet users in 2011 (Saleem, 2008). This estimate is accessible to the Internet that there are more than 3.430 million people who reflect Pakistanis. According to Internet users' estimates, it consistently increased by one person per 100. In Table 2 there are some B2C models working in Pakistan.

Table-2. There are some B2C models working in Pakistan

Business Models Name	Business	Description
Shophive.com	Online shopping	Multiple products selling online
Homeshopping.pk	Online shopping	Multiple products selling online
Just4girls.pk	Online shopping	Multiple girls using products selling online
Pakwheels.com	Online portal	Information distribution portal
Daraz.pk	Online shopping	Multiple products selling online
ROZEE.pk	Job portal	Employers post jobs according to their requirements.
Mustakbil.com	Job portal	Employers post jobs according to their requirements.
OLX.com.pk	Online portal	Information distribution portal

B2C e-commerce business model in Pakistan

Many Pakistani companies and individuals are able to improve their business and stay competitive through internet and e-commerce. This shows the B2C e-commerce business model in Pakistan.

2.3. Firm-level E-Commerce Adoption

The theory of adoption of e-commerce has been tested in many research topics like e-banking, shopping through the internet, smartphone technologies. Similarly, a study on SMEs and enterprise-level technology adaption in developing countries have been using a combination of many ideas. Table 3 provides a summary of some SMEs, corporate level and developing countries, designed to determine e-commerce adopting drivers in research. This study provides an overview of the corporate and SME level determinants of behaviorally adopted behavior adopted countries. A company analyzed the country's willingness to adopt a wide range of e-commerce companies for studying adoption in a wide range of Pakistan (Rosli, 2012). This study was in connection with the government, technology, market, and culture, demonstrating the impact of the social network of factors affecting e-commerce and highlighting the importance of government.

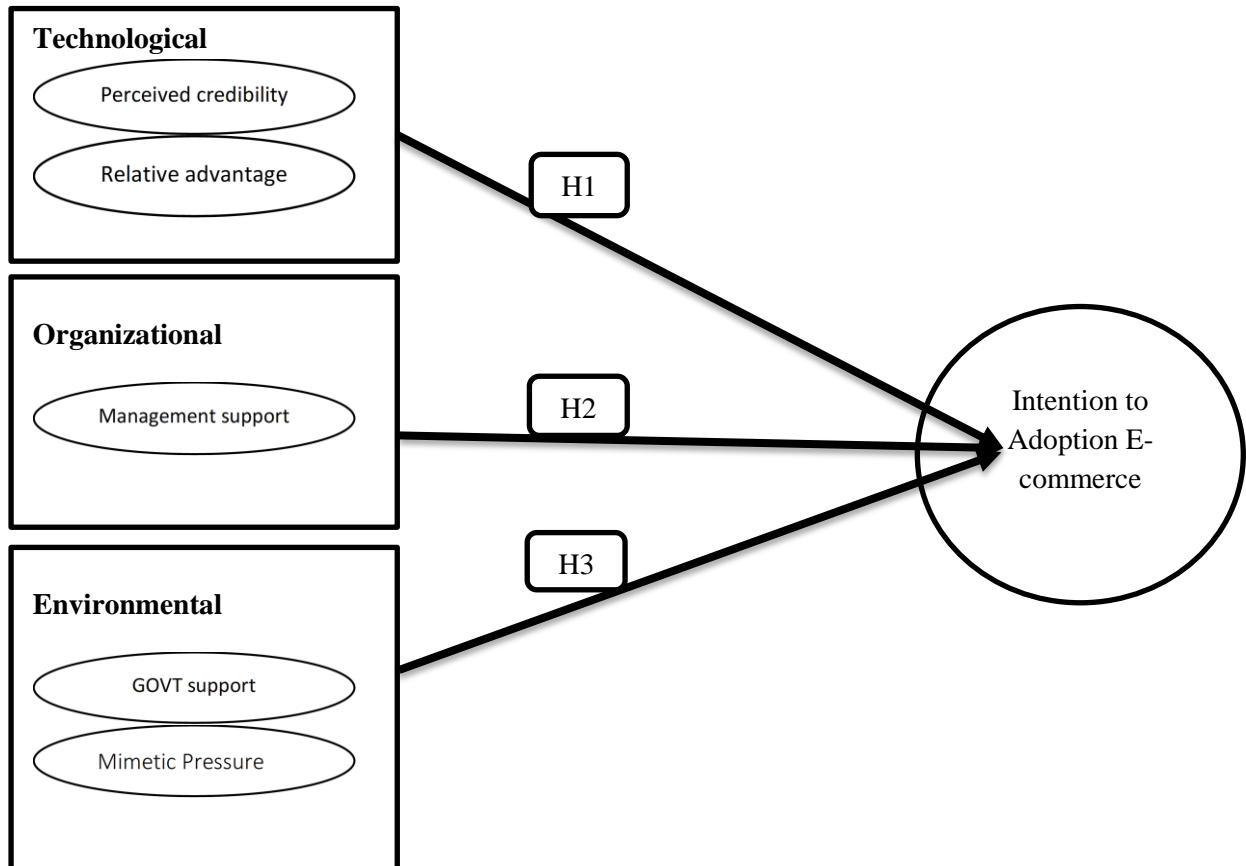
Table-3. Firm-level adoption in previous studies

Subject	Construct	Level of Analysis	Literature
E-commerce Adoption Non-Adoption	“Organizational readiness, Perceived usefulness, Compatibility, External pressure, Ease of use, Managerial aid, Organizational support”.	SME	(Walker J. <i>et al.</i> , 2016a)
E-commerce Adoption	“Organizational readiness, External factors, Perceived ease of use, Perceived usefulness, Perceived strategic value”.	Slovakian SMEs	(Walker J. H. <i>et al.</i> , 2016b)
E-commerce Adoption	“Organizational support, Managerial productivity, Perceived ease of use, Perceived usefulness, Strategic decision aids”.	USA SME	(Lim <i>et al.</i> , 2016)
E-commerce Adoption	“Intention, Attitude, Subjective norm, Perceived behavioral control”.	Kenya SME	(Maragia, 2016)
E-commerce Adoption	“Size, Information intensity of product, competition, Buyer/ supplier pressure, Technology vendors Support, Relative advantage, Cost, Compatibility”.	South Africa SME	(Mavimbela and Dube, 2016)
E-commerce Adoption	“Relative advantage, Compatibility, Complexity, Security and confidentiality”.	Thailand SMEs	(Hussein and Baharudin, 2016)
E-commerce Adoption	“Organizational readiness, Managerial productivity, External pressure, Compatibility, Perceived usefulness, Organizational support, Ease of use”.	Malaysia SMEs	(Ahmad <i>et al.</i> , 2015)
Adoption of cloud Computing	“Cost reduction, Ease of use and convenience, Security and privacy, Sharing and collaboration”.	SMEs	(Prashan and Seetharaman, 2013)

3. Research Model

This research adopts the TPB based on the proposed research model by recognizing the importance of recognizing the owner's characteristics on SMEs performance (Ajzen, 1991). The study adopted the ideological power to investigate the effects of owners and administrative decisions on the actions adopted by the TPB and review adoption in SMEs. However, e-commerce adoption decision in a complex environment that can lead to business activities partly part of the organization's factors. Ramzani *et al.* (2008) claims that improvement of the potential of its prospects as needed integration-specific operations with other ideologies. The proposed model is based on an adaptation of literature on the use of modern SMEs in emerging countries (Ahmad *et al.*, 2015). The huge evolution evidence of this research and actions were very close to adopting an action intended to adopt the behavior (Wallace and Sheetz, 2014) as an alternative to adopting the last adoption is most knowledgeable. To explain the adoption in a wide range of SMEs of Pakistan's there are some factors that are affecting the adoption of e-commerce in Pakistan, technical organization and environmental framework. The projected research model is drawn in Figure 1.

Figure-1. Theoretical Framework



3. Hypothesis Development

3.1. Technological Context

Most of the research was identified in the development of electronic commerce as a factor in the development and fear of security as a factor. Founding (Killikanya and Chantranontwong, 2000) SME does not believe that e-commerce is a secret for fear of losing business start an awesome business. (Ahmad *et al.*, 2015) found behavior has a major effect on understanding the reputation. That is, the least e-commerce is likely to adopt for security.

A few studies have examined the effectiveness of the technical spokesperson for small businesses (Premkumar, 2003). These studies are ready to adapt to e-commerce that uses a relatively edge and reliability to measure the impact of the SMEs' technical features. Technical context: relative benefit. According to Premkumar, (2003), the relative benefit for which innovation is a better idea of its place than it is. Meanwhile Igarria *et al.* (1996), confirmed the importance of relative benefit in empirical behaviors. Thus, this study hypothesizes following for technological factors:

H1: Technological factors (Perceived credibility, Relative advantage) have a significant influence on Intention to Adoption E-commerce in SMEs.

3.2. Organizational Context

Management Support is the range of employee promotion and promotion and encouraging leadership. Igarria *et al.* (1996) mentioned that one of the most technical management assistance is to create an auxiliary climate to adopt a new variable technology. Igarria *et al.* (1996) Assessed firstly the overall degree of support including

enabling resources for top management and encouraging favorable micro computing environment. They take the opportunity to learn the appropriate technique of supporting the organization as provided, encouraging micro-computer experiences, and a variety of user-friendly software for unique users in a variety of tasks. Which they required. Therefore, the study proposed the following hypothesis:

H2: Organizational factor (Management Support) has a significant influence on Intention to Adoption E-commerce in SMEs.

3.3. Environmental Context

Environment can be promoted to prevent environment or adopt modern organizations. Many studies have demonstrated the importance of environmental pressure on innovation. It investigates the impact of the government, investigates the effects of the situation, and pressure on adopting small business e-commerce in Pakistan. (Fang, 2002) Evidence shows the importance of government in the development of e-commerce. Scholars such as (Martinsons, 2008), (Dunt and Harper, 2002) government's role in developing the development role of the government to ease the development of two e-commerce and E-commerce adopts and the usage surfaces it provides the basic structure. Seyal *et al.* (2004) has also been described to be a meaningful involvement of adoption and e-commerce of government support.

The implication of the implicit pressure was uncertain as a model hinged from the organization for others in the organization. Due to this implicit behavior, organizations can reduce the cost of risk and first preference was taken an alternative search party. Many studies should include pressure implications during the review of the behavior of the ICT adoption by organizations (Ritchie and Brindley, 2005). Therefore, the hypothesis is the following:

H3: Environmental factors (Government support, Mimetic pressures) have a significant influence on the intention to the adoption of e-commerce.

4. Methodology

Multiple items on a five-point Likert scale were used for all factors scale used of (Awiagah *et al.*, 2016; Chatzoglou and Chatzoudes, 2016; Zhu *et al.*, 2003). This research is empirical (questionnaire collected from respondents) (based on primary data), quantitative (hypotheses testing research). Data was collected from 250 random SMEs from Lahore, Sialkot, Faisalabad and Kasur cities of Pakistan. Correlation, T-test, P-test and beta values are applied to check hypothesis.

5. Data Analysis

The data was collected to analyze using simple random sampling techniques. It was the best way to know if the legitimate acquisition was therefore adopting or trying to adopt e-commerce and use. A sample of 250 SMEs to assess their understanding of survey questions was held pilot study. These are listed in this list to adapt and use simple random sampling technique of adoption in SMEs. Four cities, including Lahore, Sialkot, Faisalabad, and Kasur which nominated in Pakistan. The sample size of the study was 250, so we sent the self-administered questionnaires to 250 SMEs by hand. Of the 250 questionnaires, 167 were received, which represents a response rate of 64%. Only 160 were useable for analysis after ordering them because seven questionnaires were incomplete, outliers were also excluded by using SPSS24 (Mahalanobis, D2).

As reliability is quality standards, such as items measuring models, elements to measure measurement models were adopted. The results confirm the reliability and validity of the observing scales relative to the latent variables. The Cronbach's alpha reliability was referred (Hair *et al.*, 2016).

Table-4. Demographic/characteristics of respondents

	Catalog	No	(%)
Status	Employee	81	49.4
	Owner	79	50.6
Firm life	Less than 5 years	138	86.3
	More than 5 years	22	13.8
Type of firm	Manufacturing	123	76.9
	Service	24	15
	Retailer	13	8.1
No of employee	Less than 30	123	76.9
	31-100	22	13.8
	101-250	15	9.4

Table-5. Outer Loadings of items/ Cronbach's Alpha

	EF	IAEC	OF	TF
EF1	0.736			
EF2	0.761			
EF3	0.739			
EF4	0.788			
EF5	0.703			
EF6	0.722			
EF7	0.662			
EF8	0.540			
IAEC1		0.764		
IAEC2		0.830		
IAEC3		0.831		
IAEC4		0.767		
IAEC5		0.785		
IAEC6		0.803		
OF1			0.739	
OF4			0.651	
OF5			0.687	
OF6			0.723	
OF7			0.596	
TF1				0.213
TF2				0.742
TF3				0.830
TF4				0.868
TF5				0.815
TF6				0.671
TF7				0.581

Cronbach's alpha above then 0.70

Figure-2. statistical model

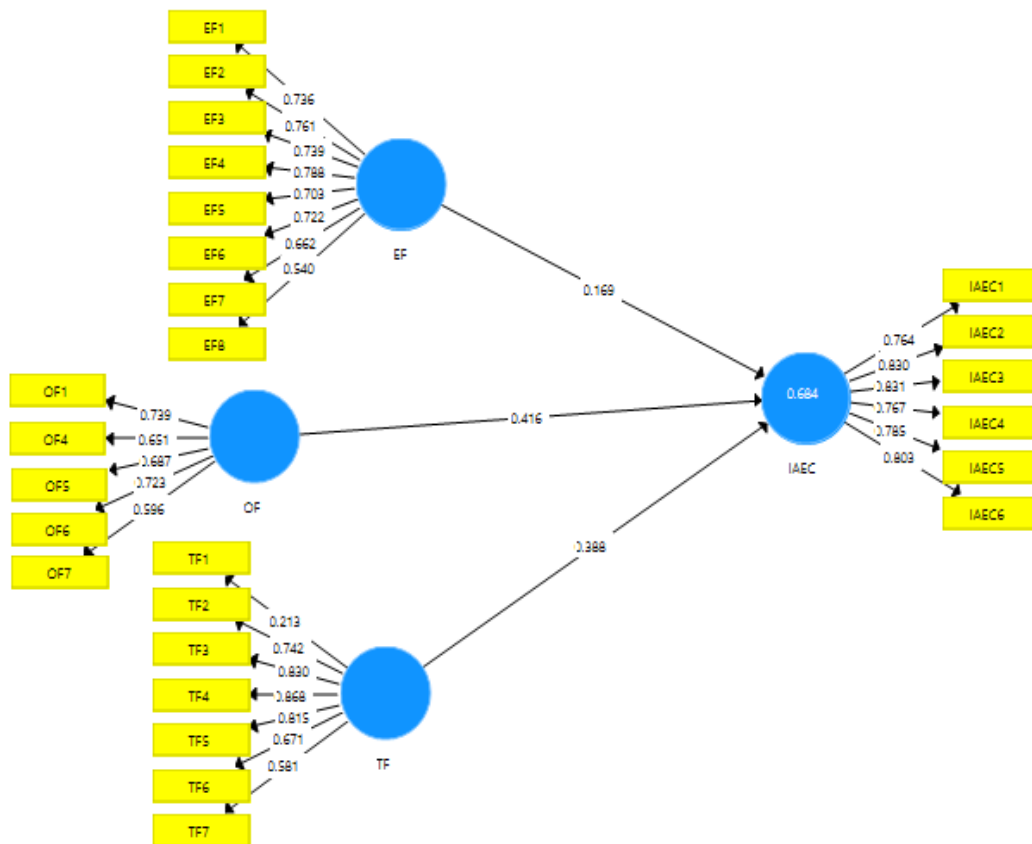


Table-6. Heterotrait monotrait co-relation table

	EF	IAEC	OF	TF
EF	1			
IAEC	0.708	1		
OF	0.882	0.819	1	
TF	0.53	0.8	0.679	1

In the correlation table, there is proved that in the statistical analysis it is shown that none of the variables is co-related another one. It validates the data which is collected from SMEs in Pakistan.

Table-7. Variance Inflation Factor (VIF)

IVs	IAEC
EF	1.954
OF	2.291
TF	1.445

5.1. Hypothesis Testing

The PLS3 was used to test the research hypotheses. Based on available data analysis were performed, which are explains in the table all three H1, H2, H3 got significant in statistical analysis, R-square is 67%. its mean all IVs are affecting 67% to DV. F-square is also in trash hold.

Table-8. Hypothesis Results

Hypothesis	Relationships	Sample Mean (M)	Standard Deviation	T Statistics (O/STDEV)	P Values
H1	EF -> IAEC	0.164	0.078	2.173	0.03
H2	OF -> IAEC	0.422	0.066	6.3	0
H3	TF -> IAEC	0.39	0.057	6.844	0

According to the results in table 8, we can say that all 3 hypotheses are accepted. P-value and T-value are showing that there is a significant relationship in TF, OF, EF and IAEC.

6. Discussion and Conclusion

The results of this research are technological factors, Organizational factors, and environmental factors are affecting the intentions to the adoption of E-commerce technologies in the SMEs of Pakistan. This research has many contributions. An important contribution to the literature on technological innovations designed to improve the SME's technological potentials. This research also provides the necessary results that if Manager will have a positive attitude to implement the use of e-commerce for administrators/owners, seems to be favorable for SMEs performance. According to our IT firms, it is found to prevent e-commerce saturation at the organizational level. Therefore, managers and owners should understand that it is important to develop a strategy to review the availability of its resources and it is necessary to adopt e-commerce to enhance the SMEs performance in Pakistan.

Finally, this research was limited to four cities of Pakistan. In addition, for future research cultural effects/environment of business place should be tested as moderator with E-commerce adoption and more research can be on behaviors of the owner of SMEs by supporting theoretical framework of Unified Theory of Acceptance and Use of Technology (UTAUT) because this is upgraded version of TAM.

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