

# Vital Strengthening of SMES through E-Commerce Adoption Purposeful

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**Abstract:** Within the time of globalization and quick advancement of information innovation, companies got to make changes to internet-based commerce. These consider assesses the components that lead small to medium-sized enterprises (SMEs) to embrace e-commerce. This investigate proposes an e-commerce adoption model utilizing structural equation modeling that explore the impacts of Technological, Organizational, Environmental, and Individual variables on the SME's e-commerce adoption purposeful. The population of the study was SMEs producing snacks, such as roasted peanuts, banana chips, cassava chips, crackers, and so on in Keranggan, Setu, Tangerang Selatan. The method of sampling was simple random sampling with 100 SMEs as samples. The study utilized Structural Equation Modeling (SEM) with SmartPLS Program 3.0 for data examination. Technological, Organizational, Environmental, and Individual variables were found to impact e-commerce adoption purposeful significantly and positively. In the Technological Aspect the biggest indicator value was Relative Advantage which is increasing sales and profits. Relative Advantage was also the biggest indicator compared to indicators from other aspects.

## 1 INTRODUCTION

Small and Medium Enterprises (SMEs) have a vital and key part of national financial improvement. Other than playing a part in financial development and business, SMEs moreover play a part in conveying improvement results. In the present, many people access the internet, but there are still a few SMEs who use it and are less aware of the importance of mastering information technology (IT) can open wider opportunities in business.

The Ministry of Cooperatives and Small and Medium Enterprises (Kemenkop UKM) states that as numerous as 3.79 million SMEs have utilized online stages to advertise their items. This amount is around 8 percent of the overall SME owners in Indonesia, which is 59.2 million (Service of Communication and Data, 2019). The number of ecommerce players has not however come to the target of the UKM Kemenkop program and the Service of Communication and Data (Kemkominfo) titled 8 Million MSMEs Go Online. In expansion, concurring to Deputy Access Capital of the Creative Economy Agency (Bekraf) Fadjar Hutomo said that computerized media plays a critical part in all aspects of people's lives nowadays,

counting within the trade division of SMEs.

To extend the competitiveness of SMEs as well as to urge export opportunities and other commerce openings can be done by utilizing the improvement of information technology, particularly e-commerce, not as it was utilizing the internet as a device to advance or look for trade openings, but also must be balanced with great authoritative administration through the use of the correct program. Site and ecommerce improvement has to be done as a implies for advancement and promoting of commerce items, so that it will increment deals volume and increment income. This increment in income will, in the long run, develop the SMEs. This increase in income will eventually develop the SMEs.

Keranggan village is located on the outskirts of the Cisadane River, precisely in Setu District, South Tangerang City. The extent the area of the Keranggan SMEs community is around  $\pm$  50 hectares. Keranggan village is a village where most of its citizens work as snacks entrepreneurs, such as roasted peanuts, banana chips, cassava chips, crackers, and so on. The production of the SME has been delivered out of the Greater Jakarta area and some have even been delivered to the outer islands. The activity of the commu-

nity business activities in Keranggan Village is a food production business activity that is spread in most RT 12 and RT 13 and RT 11 areas. The total number of SMEs in Keranggan is ± 150 SMEs. Most of the activities carried out by the SMEs are still traditional, ranging from processing raw materials, cooking, packing, and distributing manually.

The reasons for choosing the research unit are: (1) The superior product contribution to the most significant per capita regional income; (2) Market orientation of superior products is abroad; (3) Optimizing the use of local raw materials and (4) Empowering local labor. For these reasons, the comes about of the study will deliver a representation of the status of SMEs within the e-commerce adoption process so it can be utilized as a reference and thought for partners (neighborhood governments) to empower prospect change of prevalent items as a column of the neighborhood economy.

The retail industry is no exception and most of them embrace computerized impression to boost their sales and revenue. Let alone meeting the targets, but the brand outreach is one great takeaway from this work out. The reason for this study is to distinguish a comprehensive set of potential variables affecting the adoption of e-commerce in SMEs. More particularly, the consider builds a model of e-commerce adoption and gives a better understanding of the appropriation of e-commerce by SMEs.

The results will improve the understanding of SME proprietors around the potential benefits of ecommerce and optimize the adoption of e-commerce model by SME proprietors. A more prominent understanding around this will increment their likelihood to distribute a few assets towards receiving e-commerce. The study will donate experimental prove of variables impacting the deliberate of receiving e-commerce in SMEs.

## 2 LITERATURE REVIEW

Purposeful to adopt is broadly utilized as a dependent variable in adopting different technologies (Zhu et al., 2003) (Alamro and Tarawneh, 2011). Santhanamery and Ramayah, 2013 define continuous intention as "the intention of users to continue to use or long-term use of technological intentions to ensure that technology is better than the previous one." The intention of ebusiness adoption has been developed by (Drazin, 1991) (Grover, 1993)(Crook and Kumar, 1998) (Zhu et al., 2002) (Nelson and Shaw, 2003) implement online sales, online order raw materials to suppliers, aggressively doing internet advertising, applications,

technology for information exchange. From a number of references from several researchers, we adjust ourselves in the context of SMEs in Keranggan Village. Figure 1 describes the conceptual model.

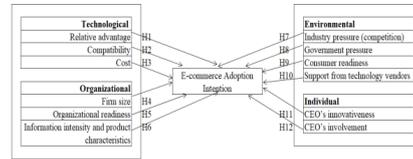


Figure 1: Conceptual Model.

H1: Relative advantage has positive and noteworthy impact to the adoption of ecommerce within SMEs, H2: Compatibility has positive and noteworthy impact to the adoption of e-commerce within SMEs, H3: Cost has positive and noteworthy impact to the adoption of e-commerce within SMEs, H4: Firm size has positive and noteworthy impact to the adoption of e-commerce within SMEs, H5: Organizational readiness has positive and noteworthy impact to the adoption of e-commerce within SMEs, H6: Information intensity and product characteristics has positive and noteworthy impact to the adoption of e-commerce within SMEs, H7: Industry pressure has positive and noteworthy impact to the adoption of e-commerce within SMEs, H8: Government pressure has positive and noteworthy impact to the adoption of e-commerce within SMEs, H9: Consumer readiness has positive and noteworthy impact to the adoption of e-commerce within SMEs, H10: Support from technology vendors has positive and noteworthy impact to the adoption of e-commerce within SMEs, H11: CEO innovativeness has positive and noteworthy impact to the adoption of e-commerce within SMEs, and H12: CEOs involvement has positive and noteworthy impact to the adoption of e-commerce within SMEs.

Technological factors consist of several indicators, such as perceived benefits, suitability, and costs that affect e-commerce innovation adoption. The perceived advantage is the level of acknowledgment of benefits to be obtained for the company (Oliveira and Martins, 2011). Direct perceived benefits as discussed in the section earlier and expectation of indirect benefits (customer service, productivity increase), also influence the degree to which organizations receive e-commerce advances (Crook and Kumar, 1998) (Premkumar and Roberts, 1999).

(Alamro and Tarawneh, 2011) states that perceived benefits refer to the acquisition or improvement of existing business operational transaction methods with e-commerce applications, including increased profit and the creation of positive relationships of trade partners, satisfaction and commitment between partners. (Kowtha and Choon, 2001) (Zhu

et al., 2003) (Hong and Zhu, 2006) contend it is vital to understand the supporting and hindering components of companies in receiving e-business.

Some researchers identify technology as a crucial factor and the key to achieving successful adoption of information systems, (Kuan and Chau, 2001) (Kowtha and Choon, 2001) (Delone and McLean, 2003) (Nelson and Shaw, 2003) (Hong and Zhu, 2006) report a positive relationship between enterprise technology infrastructure and e-business diffusion. Learning variables such as mastery in specialized and innovative management have a noteworthy effect on advancement adoption (Kindström et al., 2013) (Wang and Cheung, 2004)

Expansive companies are individuals who generally receive innovation since they have more assets (Crook and Kumar, 1998) (Kowtha and Choon, 2001) (Thong, 2001) (Hwang et al., 2004). Organizational readiness using the business dimension and size of the company's business as a dimension of organizational aspects and was elaborated with indicators of organizational readiness, among others: the range of markets served, the reach of distribution channels, the ability of alliances with suppliers, customer relations (Zhu et al., 2002). Organizational readiness is a measurement of whether the company's attributes are sufficient to adopt e-commerce (Chong et al., 2012).

Indicators of the company's external environment that can influence the company's intention in the e-business adoption process including customer readiness, business partner readiness and the level of industrial competition (Zhu et al., 2002) (Gibbs and Kraemer, 2004). The concentrated of ICT exercises within the industry in which the company works, alluding to the degree to which corporate accomplices, clients, and providers embrace innovation in their commerce operations and processes (Simatupang and Sridharan, 2002) (Ranganathan et al., 2004). The impacts of government approaches appear to coordinate and backhanded incitement of data stream that empowers quicker spread of innovation (Bagale, 2014). Government e-readiness as an evaluation of the organization of the planning of a nation and its commitment to energize, bolster, encourage, and organize e-commerce and its needs (Molla and Licker, 2005).

CEOs can influence IT adoption based on innovation and their interest in change. Because of the CEO's overwhelming part in small businesses, this perspective is exceptionally imperative in executing IT. The willingness of CEOs to innovate mainly determines IT adoption (Thong, 1999) (Zhu et al., 2003). The CEO's part as a item winner is discussed in (Grover, 1993). In small businesses, the CEO is ordinarily the sole proprietor and decision producer and

advancement and CEO inclusion contribute to the victory of the IT appropriation process (Poon and Swatman, 1999). Inventive CEOs are willing to require risks and incline toward arrangements that have not been attempted before (Thong, 2001). Directors with a positive state of mind towards e-business as a instrument that gives companies with key esteem can reinforce the inclination to embrace e-business in companies (Grandon and Mykytyn Jr, 2004). The challenges of e-commerce as individuals and organizational issues, counting getting senior administration bolster (Kuzic et al., 2002).

### 3 MATERIALS AND METHODS

A descriptive-associative approach was connected in this study where the survey was created to test the hypothetical system and theories created. The population of the ponder was SMEs producing snacks, such as roasted peanuts, banana chips, cassava chips, crackers, and so on in Keranggan, Setu, Tangerang Selatan. This study collected data in cross sectional range of time, from in depth interviews and a questionnaire. The basis for embracing this approach is that a study conducted through the utilize of a planned survey can donate a list of questions to respondents in arrange to get reactions. Upon extraction, it is additionally easier for elucidation because it includes standard collected information subjected to thorough quantitative examination (Sekaran, 2003). Probability sampling with simple random sampling was utilized to choose the respondents. With a total number of 150 populations, this study targeted 100 SMEs respondents in Keranggan Village, Setu, Tangerang Selatan. This study employed Structural Equation Modeling (SEM) with SmartPLS Software 3.0 for data analysis. Partial least squares (PLS) analysis is an alternative to OLS regression, canonical correlation, or covariance-based structural equation modeling (SEM) of systems of independent and response variables. Structural Equation Modeling (SEM) is a second-generation multivariate data analysis method that is often used in marketing research because it can test theoretically supported linear and additive causal models.

## 4 RESULTS AND DISCUSSIONS

### 4.1 Structural Model Analysis

The Technological aspect (X1) consists of 3 dimensions: Relative Advantage, Compatibility, and Cost.

Organizational aspect (X2) consists of 3 dimensions: Firm Size, Organizational Readiness, and Information Intensity. Environmental aspect (X3) consists of 4 dimensions: Industry Pressure, Government Pressure, Consumer Readiness, and Support from Technology Vendors. Individual Aspects (X4) consist of two dimensions: CEO’s Innovativeness and CEO’s Involvement. Ecommerce Adoption Intention (Y) in this ponder measures the degree to which the crave of SMEs to implement online sales, online ordering raw materials to suppliers, aggressively conducting advertising via the internet, and applying technology to exchange information. The number of p-values in each dimension shows a value of  $P < 0.05$ , where fulfilling the minimum requirements must be less than 0.05. From these results it can be concluded that Relative advantage, Compatibility, Cost, Firm size, Organizational readiness, Information intensity and product characteristics, Industry pressure, Government pressure, Consumer readiness, Support from technology vendors, CEO innovativeness, and CEOs involvement includes a noteworthy impact on Adoption Intention Ecommerce. Table 1 describes Cronbach’s Alpha, Composite Reliability, Average Variance Extracted (AVE), Original Sample (O), P Values, f-squared effect size of the full SEM model.

Table 1: Cronbach’s Alpha, Composite Reliability, Average Variance Extracted (AVE), Original Sample (O), P Values, f-squared effect size.

	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)	Original Sample (O)	P Values	f-squared effect size
Relative advantage	0.8684	0.8935	0.5128	0.3998	0.0127	0.0451
Compatibility	0.6769	0.7340	0.5801	0.1261	0.0321	0.0149
Cost	0.6071	0.7125	0.5827	0.1172	0.0461	0.0015
Firm size	0.7786	0.7811	0.5462	0.1603	0.0463	0.0040
Organizational readiness	0.8474	0.8756	0.5047	0.1990	0.0371	0.0115
Information intensity and product characteristics	0.6541	0.8524	0.7428	0.1557	0.0267	0.0124
Industry pressure	0.7330	0.8280	0.5466	0.1514	0.0279	0.0241
Government pressure	0.6621	0.8204	0.6954	0.1405	0.0283	0.0304
Consumer readiness	0.6841	0.8019	0.5032	0.2993	0.0156	0.0215
Support from technology vendors	0.6402	0.8327	0.7164	0.1671	0.0420	0.0050

CEOs innovative-ness	0.65 35	0.72 58	0.57 13	0.13 58	0.04 73	0.00 12
CEOs involvement	0.66 33	0.72 42	0.54 05	0.15 94	0.04 74	0.00 39

Figure 2. describes the full SEM model as the results of the research showing the parameter values of each observed variable (indicator) and exogenous latent variables and endogenous latent variables.

Technological (X1), Organizational (X2), Environmental (X3), and Individual (X4) aspects have a positive and noteworthy impact on Ecommerce Adoption Intention (Y). Technological (X1), Organizational (X2), Environmental (X3), and Individual (X4) aspects have a determinant coefficient of 0.8807 on E-commerce Adoption Intention (Y), meaning that E-commerce Adoption Intention (Y) variables can be explained by Technological (X1), Organizational (X2), Environmental (X3), and Individual (X4) aspect variables are 88.07%, the rest are explained by other factors.

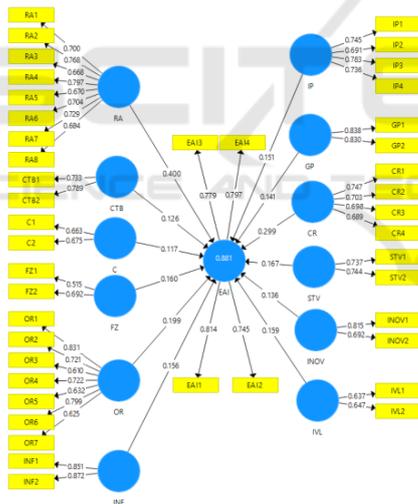


Figure 2: SEM Model.

Relative Advantage has the most elevated impact on e-commerce appropriation eagerly in Technological angles. Respondents considered ecommerce appropriation would increment deals and benefits. The higher the entrepreneur’s understanding of the relative benefits of e-commerce selection, the more noteworthy the probability of companies distributing assets such as administrative assets, monetary assets, and innovative assets, to embracing e-commerce innovation (Ghobakhloo et al., 2011).

The comes about of this study approve past studies which found that relative benefits are critical

forecasters for E-commerce execution (MacGregor and Vrazalic, 2008) (Alamro and Tarawneh, 2011) (Wanyoike et al., 2012). This study watches that CEOs who execute e-commerce selection altogether accept that e-commerce is not only able to extend deals, but moreover extend advertise share, decrease costs, and exploit new trade prospects.

The results of the study show that Cost has the lowest influence on the intention of e-commerce adoption in the Technological aspects. Based on the results of interviews with SME business people in Keranggan Village, SME organizations have limited capital so their ability to buy information technology equipment is also limited. In addition, several SMEs have doubts about investing in using the technology and the limited human resources to apply it. Each indicator has a different influence. The biggest indicator values in each dimension are shown in Table 2.

Table 2: Calculation Results Loading Factor.

Indikator		Outer Loadings
<b>Aspek Technological (X1)</b>		
Relative Advantage - RA4	Increase sales and profits.	0.7966
Compatibility-CTB2	Knowledge of employees in using the technologies they have.	0.7889
Cost - C2	Financial resources are important as funds are available for installation, promotion, purchasing, shipping, and sustainability costs during the use of e-commerce.	0.6753
<b>Aspek Organizational (X2)</b>		
Firm Size - FZ2	The size of the company makes it possible to adopt e-commerce technology.	0.6922
Organizational Readiness-OR1	The market reach served by the business scope is increasingly widespread.	0.8313

Information Intensity- INF2	The extent to which information related to a particular product or service will be reflected in the intensity of customer information.	0.8723
Aspek Environmental (X3)		
Industry Pressure- IP3	Encouragement to increase work effectiveness.	0.7830
Government Pressure- GP1	The role of the government in facilitating the development of regional infrastructure to improve service and management of regional infrastructure.	0.8379
Consumer Readiness- CR1	Consumer's positive perception of online shopping.	0.7469
Support from Technology Vendors - STV2	Partner capabilities in investments that support compatible systems.	0.7435
Aspek Individual (X4)		
CEO's Innovativeness- INOV1	The desire of business owners to obtain relevant information and skills faster than others in a social context.	0.8151
CEO's Involvement- IVL2	Full involvement of business owners in implementing the new system.	0.6473
E-commerce Adoption Intention (Y)		
EAI1	Implement online sales	0.8140

Information Intensity concurring to the respondent's appraisal will contribute to the victory of the organizational perspectives of e-commerce selection in case the information related to a specific item or benefit is reflected within the escalated of customer information. Information about SME items has to be expanded so that customers know the items sold by SMEs. So, e-commerce is very effective in the sense that consumers get information about the products they need and transact in a fast and inexpensive way. Physically safe, consumers do not need to go to the store where the company sells goods and this

allows consumers to transact safely, because in certain areas it may be very dangerous to drive and carry large amounts of cash. Flexible, consumers can make transactions from various locations, both from home, office, internet cafe, or other places. Consumers also don't need to dress neatly. But often it causes disappointment. What is seen on a computer monitor screen is sometimes different from what is seen by naked eye.

Though Firm Size, which is the estimate of the company permits planning the assets required, has the least impact on the deliberate of e-commerce appropriation within the Organizational aspect. The fetched of interfacing to the web, satisfactory hardware/software costs, setup, and maintenance costs may be troublesome for a few SMEs since the starting speculation for the selection of unused innovation is relatively heavier for smaller companies than expansive companies. Financial availability affects the level of e-commerce adoption, these financial resources are important as funds are available for installation, promotion, purchase, delivery, and sustainability costs during the use of e-commerce (Nelson and Shaw, 2003). Expansive companies frequently have adequate trade, human and innovative assets to contribute to e-commerce. The size of the company in question is a small business size. The business that adopts ecommerce is the majority of small businesses because micro or small businesses must find ways to survive in an easy way and not cost a lot. The way that can be used in promoting it simply and easily is by adopting e-commerce (Savrul et al., 2014).

Government Pressure with the government's role in facilitating the development of regional infrastructure to improve service and management of regional infrastructure contributed to the success of environmental aspects in encouraging e-commerce adoption. The South Tangerang City Government was asked to help promote the Keranggan Village, KecSetan, Tansel as a tourist village for micro and small-scale industries. Promotion is very much needed so that the area will increasingly develop into a micro and small-scale industrial center because so far it has been popular as a home industry center that produces snacks. In expansion to instructive assistance, facilitation of innovative framework and lawful systems, the climate that will energize commercial application engineers to supply item highlights that bolster different e-commerce advances that will contribute to the accomplishment of SMEs. To create an environment that supports ecommerce, the government can help solve problems, increase awareness, and provide the right infrastructure, marketing local content according to language and culture in the local environment

(Mirchandani and Motwani, 2001).

The appropriation of e-commerce requires government bolster within the frame of arrangements that bolster e-commerce development issued, it is not clear whether control of information technology frameworks, particularly the web, is one of the spines of e-commerce advancement, change of the customs framework and deregulation of export-import products. Infrastructure development is slow. One of the main obstacles is still the lack of infrastructure that exists and has not been evenly distributed throughout the Indonesian archipelago. Government's seriousness is needed to gradually build good and programmed infrastructure, Indonesian people can be introduced to the internet as one of the results of developing information technology at a cheap and affordable cost.

Adoption of e-commerce requires readiness of human resources both technically and nontechnically such as the banking system, trade traffic to the applicable legal system. There is a need for the accessibility of information and education centers for the advancement of e-commerce specialists. The adoption of e-commerce moreover requires bank and protections support, a great 'electronic banking' framework is required, other than that Indonesian banks are also still troublesome to form exchanges utilizing other monetary forms, particularly in small sums and the nonattendance of third parties as online exchange underwriter truly in Indonesia.

Consumer readiness, which is the comfort of customers for internet access, has the least impact on the deliberate of e-commerce appropriation within the environmental perspectives. The emergence of fraud through e-business and there are no guarantees for transactions carried out, thereby reducing the level of customer trust. With the emergence of various cases that occur, a solution is needed to increase customer trust to make transactions through online marketing. The e-marketplace model allows shared accounts and guarantees from third parties for successful transactions. Concerns about fraud and non-delivery of goods from consumers will be eliminated. Whereas from the merchant's side, the trust will be paid for the items sent will be higher due to account facilities.

This implies that CEO's Innovativeness concurring to respondents' judgment will decide the personal viewpoints of e-commerce appropriation on the off chance that there is a desire of commerce proprietors to get important information and abilities faster than others in social settings. CEOs can impact IT appropriation based on advancement and their intrigued in alter. Since the CEO's prevailing part in little businesses, this perspective is exceptionally vital in exe-

cuting IT. The readiness of CEOs to improve basically decides IT appropriation (Thong and Yap, 1995). Past writing found CEO innovativeness to significantly and positively impact IT adoption (Thong, 1999) (Mirchandani and Motwani, 2001)(Thong, 2001).

In small businesses, the CEO is ordinarily the sole proprietor and choice creator and advancement and CEO association contribute to the victory of the IT appropriation process (Poon and Swatman, 1999). Innovative CEOs are willing to require dangers and favor arrangements that have not been attempted before (Thong, 1999). The development of information technology can be used to help market products to consumers. There are several main capabilities of information technology, namely (Turban et al., 2006): a. Perform fast numeric computing, and large volume capacity; b. Deliver communication that is quick, precise, and reasonable inside and between organizations; c. Large storage capacity in media that is increasingly small and easily accessible; d. Increasing the effectiveness of team/group performance that is spread/different locations; e. Enables access to lots of information quickly and cheaply, globally; f. Automation of business processes; g. Typing and editing speed; h. The above capabilities are carried out cheaply compared to manual methods.

CEO's Involvement, to be specific commerce proprietors, have encounter and capabilities related to information technology having the littlest parameter gauges. A CEO with more IT information can evaluate the benefits of unused innovation and be more likely to embrace development. Lack of IT information makes instability and as it were mindfulness through the information that gives certainty to unused developments that encourage adoption (Thong, 2001). CEOs in small organizations need essential information on IT and have lacking mindfulness of the potential benefits of IT adoption (Gable and Raman, 1992). CEOs without IT knowledge tend not to be committed to IT appropriation assets. In connection to small businesses, Mirchandani and Motwani, 2001 show that beat administration bolster is a critical calculate in recognizing adopters and not adopters of ecommerce.

## 5 CONCLUSIONS

The discoveries of this study contribute to the body of writing in a number of ways. This study gives an understanding of the appropriation of e-commerce by SMEs. Innovation encompasses a noteworthy impact on e-commerce selection eagerly. Organizations have a significant impact on ecommerce appropriation

eagerly. Environment includes a significant impact on e-commerce selection eagerly. Individual contains a significant impact on e-commerce selection eagerly. Innovation, organization, environment, and people at the same time have a significant impact on e-commerce selection eagerly.

The government must increment its endeavors by advancing viable programs and activities to empower the level of e-commerce appropriation by SMEs. Proprietors and supervisors of SMEs have an important part in empowering the development of advancement since they are recognizable with the organizational framework and the characteristics of SMEs. Managers must realize that they can have a positive impact on the appropriation of technology by preparing their representatives, conjointly believe technologies focal points. SMEs actors need to develop creative and innovative elements so that their business have better performance. It is vital for SMEs to extend representative information in utilizing the innovation they have in arrange to grow the run of markets served and be able to outlive within the period of worldwide competition. SMEs have an important role in global economic and it is the reason why government policy needs to improve human and technology capability, give information about market opportunity, improve internet accessibility, facilitate funding access, and facilitate information system among SMEs. This result might enhance the understanding of SME proprietors with respect to the potential benefits of e-commerce. A more prominent understanding of the issue will increment their likelihood to apportion a few assets towards receiving e-commerce. SMEs got to plan the assets such as innovation and organization in ecommerce appropriation by considering Technological, Organizational, Environmental, and Individual components.

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