

The Mapping of Issues Regarding the Adoption of E-Business Among SMEs in Five Continents

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Abstract

E-business in this VUCA era has been increasingly gaining scholars attention especially in the SMES sector. This systematic literature study with the objective to identify the issues faced by SMEs on five continents when they want to adopt e-business. Data was taken from the collection of literature on journal portals such as Google Scholar, Academia, Scopus, and Elsevier, with keywords SMEs, e-business, information technology, digital transformation, and competitiveness. The collection of the literature is not limited by the country. The more countries that are taken, the more this paper reflects the real problems faced by SMEs when they want to adopt e-business. There are 115 collected pieces of literature representing the five continents that exist. The findings obtained from this paper are that all SMEs on five continents have similar issues when they want to adopt e-business. The findings are classified into Technology, Organization, and Environment (TOE) to facilitate classification and analysis and it is found that Technology in terms of business communication, Organization in terms of human resources, and Environment in terms of ICT infrastructure are the most common issues when SMEs want to adopt e-business. However, each continent has its own characteristics.

Keywords

E-business, SMEs, adoption, issues

Received: 27 May 2023; Accepted: 20 June 2023; Published Online: 31 August 2023

DOI: 10.21776/ub.apmba.2023.012.01.6

Introduction

Many Small and Medium-Sized Enterprises (SMEs) have to do extra work to survive in the industry due to high competitiveness among firms. One of the determinants of competitiveness is the performance of their exports. Since 2014, the number of exporting enterprises in the European Union (EU) has decreased by 8%, despite an increase in the number of exporting SMEs. The number of SMEs has risen from 76% in 2014 to 87% in 2017. At the same time, the value of export has increased by 12% for all enterprises and 10% for SMEs

(Eurostat, 2022). In 2017, more than 700.000 enterprises in the EU sold products outside of the EU, and 615.000 of them are SMEs. In terms of value, the EU SMEs have exported 476 billion euros, representing 28% of the total value of EU export in that year (Eurostat, 2022). The high number of exports in SMEs has been supported by the high intensity of digitalization in the EU SMEs. Further, (Eurostat, 2022) contends that European SMEs seem to perform better than the OECD SMEs due to the digital intensity. Digital intensity is a set of indicators of how far SMEs use the technology. The indicators include the use

of ICT security measures, ERP package, any social media, and customer relationship software – CRM (Leogrande, 2022).

The discussion above shows that digitalization can increase a firm's competitiveness in the industry. The digitalization of the industry is generally called electronic business or e-business. A fast-growing e-business has become a global key element of business development and the SMEs are supposed to have e-business to support their productions and transactions. On the production side, e-business allows SMEs to undertake supply chain management electronically, and provides the SMEs an opportunity to have better interactions with their suppliers (Dai, 2014). From the transaction side, it opens up opportunities for SMEs to access new markets. Studies have found that e-business helps SMEs in gaining access to new markets and reaching a wider customer base with low-cost internet initiatives. These activities allow SMEs to reduce the cost of meeting clients face-to-face (Ashurst et al., 2012) and secure a competitive advantage (Cataldo & McQueen, 2014). Further, e-business helps SMEs to have an efficient process even though efficiency gains are harder to prove in business settings, especially for SMEs.

E-business has been adopted by SMEs for decades in European countries. Many papers mention e-business and its adoption for SMEs (e.g., Drew, 2003; Piscitello & Sgobbi, 2004; Taylor & Murphy, 2004; Wagner et al., 2003). By then, e-business has spread all over the world and right now, e-business has become an interesting subject among SMEs to be adopted, especially in emerging countries. Most recent studies on the adoption of e-business among SMEs emerge from some countries such as Yemen (e.g., Abdullah et al., 2018); Saudi Arabia (e.g., AlBar & Hoque, 2019); Brunei Darussalam (e.g., Almunawar et al., 2022); China (e.g., Ming, 2016), Jordan (e.g. Hossain et al., 2021), and Bangladesh (e.g., B. B. Hossain et al., 2019). Their studies mostly discuss the factors affecting

the adoption of e-business among SMEs in their countries.

The adoption of e-business among SMEs in the EU is quite mature compared to other countries in the world. In this regard, it becomes interesting to discuss more deeply on how the SMEs in the EU adopt e-business that contributes to their success in competing abroad, and allow a significant rise in the proportion of their exports. The success stories of SMEs in the EU can be replicated by other SMEs around the world. Determination of factors influencing the adoption of e-business among SMEs in the EU can thus be passed on to other SMEs.

However, none of the papers synthesizing the factors that affect the adoption of e-business around the world. Studies discussing those factors have been done separately. studies have been done separately. The success factors for adopting e-business among SMEs in the EU have not yet been discussed comprehensively. At the same time, the biggest hurdle to e-business adoption for SMEs in other countries has never been addressed. By collecting information regarding the adoption of e-business all around the world, the factors contributing to the adoption will be revealed. This study aims to identify the issues faced by SMEs in various continents when adopting e-business.

E-business is a business activity that involves the use of communication and information technology. The adoption of e-business in business activities starts from the production to the transaction process (Lee, 2021). One of the practices of e-business adoption is the use of technology in transaction processing of e-commerce and website transactions. It is undeniable that the use of e-business in firms fastens the process of purchasing products and services. It is due to the widespread and increasing use of the internet throughout the world. Nowadays, consumers are more likely to purchase products or services online, especially since the COVID-19 pandemic. As a result, online transactions

have increased rapidly. During the pandemic, Indonesian digital business grew to IDR337 trillion in 2021. The annual e-commerce sales growth increased to 15.4 percent in 2021 (Kementerian Informasi dan Komunikasi (Kominfo), 2022). The high rate of e-commerce transactions proves that the adoption of e-business can increase business sales.

In this digital era, e-business has become essential for business strategy and economic development. This is because e-business is proven to increase revenue (Abdullah et al., 2015a). One of the business strategies that can improve business performance is the use of technology, in this case, with the adoption of e-business. The adoption of e-business allows SMEs to integrate supply chain partners and organizational functions (Abdullah et al., 2015a). Furthermore, the use of e-business will lead organizations to have more effective resource management and faster communication of business processes. The adoption of e-business also provides benefits such as a reduction in transaction costs and an increase in transactions (Rahayu and Day, 2017). With the advantages offered by the adoption of e-business, a competition between SMEs is increasing. This is because if SMEs adopt e-business, they will increase the value of their business.

A number of previous studies have shown that several SMEs in some countries in the world have adopted e-business in their business processes. According to (Ang and Husain, 2012), the integration of a company's business, products, procedures, and services through the internet is the main focus of implementing e-business. It enables the buying and selling of products and services through a web storefront.

Several studies explaining how e-business is adopted in SMEs in various continents, regions, and countries around the world include the following.

On the African continent, the size of a company is the most significant factor in the adoption of e-business. According to Wachira (2014), Erumi-Esin and Heeks (2015), and Kissiwaa et al., (2021), various companies have used technology in their sales, such as websites and email. However, internet bandwidth and access costs, especially through mobile phones, are the main hurdles to adopting e-business.

In America, many firms have adopted e-business. Higher education, entrepreneurial intensity, informal networks with customers and suppliers, business partnerships, and product innovations are factors that accelerate the adoption of e-business. However, a slow adaptation and a lack of investment in digital technology become hurdles to e-business adoption (Ifinedo, 2011; Middleton and Middleton, 2016; Sánchez-Torres et al., 2021).

In Asia, especially in developed countries, many firms have adopted e-business. Its adoption in Asian countries still depends on the size of the firms and the products or services they provide. Technical IT skills for workers in Asia are increasing according to Wang and Shi (2009). However, the quality of human resources, employee management, and finance have become hurdles to the adoption of e-business in the continent (Abdullah et al., 2015b; Delawari, 2019; B. B. Hossain et al., 2019; Hussein et al., 2013; Lee, 2021).

Eurasia has adopted e-business with the use of social media, applications, websites, or new platforms for small businesses. Although not all SMEs have used e-business in their business processes, but the government is trying to encourage them to use e-business in their business by advertising on social media (Demiroglu, 2021).

In Europe, the government fully supports SMEs owners in adopting e-business by increasing consumers' access to broadband technology and the internet, which results in the increased consumers' willingness and

sophistication (Sukumar et al., 2011). Building e-marketing (online branding) is the company's strategy. The risks faced in adopting e-business on the European continent are security issues such as viruses and hacking.

Some SMEs in Australia and Oceania have used e-business in their business practices. They use business webpages, websites, emails, etc. Owners and workers also have knowledge of and interest in technology, despite its slow adoption (Bi et al., 2017; Prananto et al., 2004; Ramsey and McCole, 2005).

The conditions of e-business adoption in each of these continents cannot be generalized. In Asia, the adoption of e-business in SMEs tends to be more developed in the East Asian region (Lee, 2021) than in the South Asian region (Gide and Sandu, 2015). Likewise, it is difficult for the African continent which still relies on internet and bandwidth providers, to adopt e-business (Mthembu et al., 2018; Raviro et al., 2014).

This study aims to identify the issues of e-business adoption in various continents. To do that, the study initially maps the adoption of e-business in all continents. Then, the study identifies the characteristics of hurdles faced by SMEs. Factors that influence the adoption of e-business are identified and analysed further.

Research Methods

This is a literature review study that aims to shed light on the best practices of e-business adoption around the world. The study uses semi meta-analysis literature review which involves taking the findings from the chosen literatures and analysing these findings by using statistical descriptive i.e., modes. The modes are used together with coding which applied to the literatures after choosing the databases followed by conducting the search. The databases are the journal portals include Google Scholar, Academia, Scopus, and Elsevier. The

articles are searched by using keywords of SMEs, e-business, and adoption. There are hundreds of articles generated. All the generated articles are selected by read through their abstracts by dividing into relevant and irrelevant topics of the articles. The articles with relevant topic are kept, it happens to be more than a hundred articles are kept.

The factors regarding the adoption of e-business among SMEs were identified from the papers collected. Factors mentioned or discussed in the papers were considered to be the factors that influence the adoption of e-business among SMEs. This study collects all factors from the papers collected. After that, factors mentioned or discussed in the papers were gathered and classified. Factors mentioned in one paper only represent one tally for each factor, and each factor was counted individually. A factor's accumulated number of mentions represents its degree of importance on the adoption of e-business among SMEs.

For example, in a paper the word 'website' is mentioned and it contributes to the adoption of e-business, so the website is identified as a factor that influences the adoption of e-business among SMEs (Alderete, 2019). A firm displays its products or services on its website. Therefore, the customers and suppliers have information regarding the products that the firm offers. A website itself represents a medium of communication among a firm, its customers, and its suppliers. However, the study did not include the detail of the website itself, such as how far the website is developed. As long as the paper discusses website, it is considered as a contributing factor. In another paper, a mobile app is discussed as an aspect considered in adopting e-business among SMEs (Gide and Sandu, 2015). Therefore, a mobile app is identified as a factor as well. A mobile app can be defined as a platform used by a firm and its customers to communicate their purposes in offering, selling, and buying products or services. Both websites and mobile apps are factors that contribute to

adopting e-business among SMEs (Demiroglu, 2021). However, websites and mobile apps are classified as media of communication electronically for a firm. For that reason, both are classified as business communication.

Papers were grouped geographically and factors were identified. For example, papers mentioning e-business factors in Indonesia would be grouped into the Southeast Asian region and the Asian continent. The factors were identified and analysed to determine the influence of the adoption of e-business among SMEs in that certain region.

Factor classifications were sorted based on the most to the least mentioned in the papers. The biggest five of factor classifications were considered the most influential in adopting e-business among SMEs. Geographically, there were five continents including Africa, Asia, America, Europe, and Australia/Oceania. Further, the papers were categorized based on Technology, Organizational, and Environment (TOE) framework. TOE

framework was used as a guidance in reviewing certain contextual factors that affect the use of e-business (Hadi Putra & Santoso, 2020). Even though it is argued that the TOE itself is not enough in reflecting causal relationships, using TOE is good as the basis of information to categorize the factors on the best practice of the SMEs.

Results and Discussion

The study collected the most recent publications published in 2022, followed by ordering them. There were 115 papers collected. Table 1 shows the distribution of papers by year. The papers were classified on the basis of its regions such as Middle East, Southeast Asia, East Asia, Central Asia, South Asia, West Africa, East Africa, South Africa, Southeast Europe, East Europe, Central Europe, Northern Europe, South Europe, North America, South America, Australia, and Oceania. Table 2 shows the distribution of papers by continents.

Table 1. Distribution of papers from 2022 - 2001

No	Year	Number of Papers
1	2022	4
2	2021	11
3	2020	2
4	2019	10
5	2018	2
6	2017	4
7	2016	6
8	2015	7
9	2014	5
10	2013	6
11	2012	7
12	2011	7
13	2010	6
14	2009	5
15	2008	5
16	2007	6
17	2006	6
18	2005	3
19	2004	6
20	2003	6
21	2002	-
22	2001	1
Total		115

There were 11 papers collected that discussed the adoption of e-business among SMEs in Africa. The countries discussed were Botswana, Egypt, Ghana, Kenya, Nigeria, South Africa, Zambia, and Zimbabwe. For the American continent, 13 papers discussed the e-business adoption among SMEs in North American countries including Canada, the United States, and Mexico. For the South American countries, one paper each discussed Argentina, Brazil, Columbia, and Jamaica. The most papers collected were those discussing the adoption of e-business among SMEs in Asian countries including Afghanistan, Bangladesh, Brunei Darussalam, China, Hongkong, India, Indonesia, Iraq, Iran,

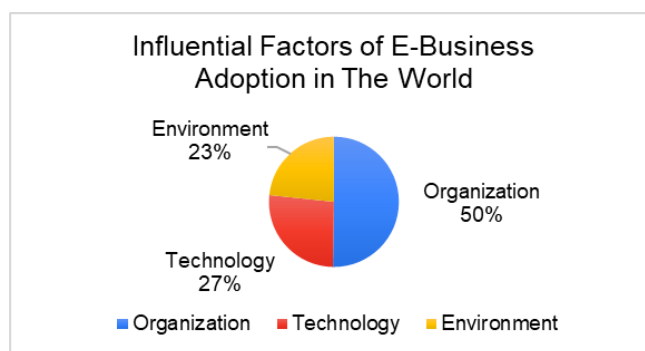
Japan, Jordan, Kuwait, Malaysia, Nepal, Oman, Pakistan, Singapore, Saudi Arabia, South Korea, Taiwan, Thailand, Turkey, United Arab Emirates, Uzbekistan, Vietnam, and Yemen. There are 7 papers from Australia (Oceania) that include Australia and New Zealand. There were 33 papers collected from Europe discussed Bulgaria, Denmark, England, France, Finland, Germany, Greece, Hungary, Italy, Luxemburg, Malta, Netherlands Norway, Poland, Portugal, Russia, Serbia, Spain, Sweden United Kingdom, and Wales. Altogether, there were 64 countries discussed in terms of the adoption of e-business by SMEs in the world.

Table 2. Distribution of Papers by Continents

Continent	Number of Papers
Africa	11
America	14
Asia	49
Australia	7
Europe	33
Oceania	2
Total	116

The study revealed that for all continents, the most influential factors that hinder the adoption of e-business among SMEs were related to organization, except in Africa where organization and technology had similar shares. It was found from about 50% of the papers collected that organization

was the most significant factor in influencing the adoption of e-business among SMEs around the world, followed by technology (27%) and environment (23%). Figure 1 shows the influential factors in adopting e-business.

**Figure 1. Influential Factors of E-Business Adoption in the World**

In Africa, not only issues related to organization, but also the ones related to technology were dominating factors in the adoption of e-business among SMEs. Their shares were 37.50% and 35.71% respectively, followed by the environment (26.79%). The organization issues in terms of management, human resources, and finance were the biggest factors influencing the adoption of e-business among SMEs. Perceived risk of security, culture, and value of a firm became the biggest challenges in management issues besides the issue of human resources (managers' knowledge of IT). Furthermore, the cost of

adopting e-business was quite significant but the fund is limited. The study of (Mthembu et al., 2018) suggests that internet connectivity problems in terms of quality, speed, and cost are still the biggest issue faced by SMEs. Thus, issues in organization and technology became the most influential factors that may hinder African SMEs especially in West Africa in adopting e-business or other related electronic business such as e-commerce. Table 3 shows the category impact of adopting e-business by SMEs in all continents.

Table 3. Impacts Based on TOE

Categories	Impact (%)	TOE Impact	TOE Category
AFRICA			
Company Strategic	1.79%	37.50%	Organizational
Demographics	3.57%		
Finance	8.93%		
Management	14.29%		
Human Resources	8.93%		
Relationship	0%		
Business Technology	16.07%	35.71%	Technology
Business Communication	19.64%		
Banking	1.79%	26.79%	Environment
Government	7.14%		
Industry	5.36%		
Infrastructure	10.71%		
Vendor	1.79%		
AMERICA			
Company Strategic	4.42%	61.95%	Organizational
Demographics	15.04%		
Finance	4.42%		
Management	11.50%		
Human Resources	24.78%		
Relationship	1.77%		
Business Technology	10.62%	21.24%	Technology
Business Communication	10.62%		
Banking	0.00%	16.81%	Environment
Government	4.42%		
Industry	5.31%		
Infrastructure	7.08%		
Vendor	0.00%		
ASIA			
Company Strategic	2.67%	47.71%	Organizational
Demographics	8.78%		
Finance	8.02%		
Management	6.49%		
Human Resources	20.99%		
Relationship	0.76%		
Business Technology	13.36%	24.43%	Technology
Business Communication	11.07%		
Banking	1.91%	27.86%	Environment
Government	8.02%		
Industry	6.49%		
Infrastructure	9.92%		
Vendor	1.53%		
EUROPE			

Company Strategic	1.31%		
Demographics	12.42%		
Finance	4.58%	51.63%	Organizational
Management	5.23%		
Human Resources	25.49%		
Relationship	2.61%		
Business Technology	17.65%	30.07%	Technology
Business Communication	12.42%		
Banking	0.00%		
Government	5.88%		
Industry	5.23%	22.22%	Environment
Infrastructure	11.11%		
Vendor	0.00%		
AUSTRALIA & OCEANIA			
Company Strategic	3.23%		
Demographics	3.23%		
Finance	3.23%	54.84%	Organizational
Management	12.90%		
Human Resources	29.03%		
Relationship	3.23%		
Business Technology	12.90%	32.26%	Technology
Business Communication	19.35%		
Banking	0.00%		
Government	0.00%		
Industry	3.23%	12.90%	Environment
Infrastructure	6.45%		
Vendor	3.23%		

Different from Africa, organization became the most influential factor in the American continent, which shared 61.95%. It contained human resources, demographics, and management. Each of them had contributions of 24.78%, 15.04%, and 11.50% respectively. Issues related to human resources covered the issues of education, entrepreneur experiences, and age of the owners or managers. For the demographics category, the issues were related to the characteristic of the firms that include size, type of industry, and market scope. In terms of management, the issues were culture, readiness, and leadership. Based on TOE, the share of organization was 61.95% whereas the share of technology was 21.24%. Meanwhile, the share of environment was 16.81%.

Similar to factors in the American continent, in Asia, the most significant factor was organization with human resources as the biggest issue (20.99%), followed by demographics and finances at 8.78% and 8.02% respectively. Education, managers, and skills were the top three factors that became the significant issues of human resources. In terms of demographics and finances, the SMEs in Asia considered finances including funds and expenses to be important aspects to adopt e-business. In general, the issues related to organization, environment, and technology gave contribution as much as 47.71%, 27.86%, and 24.43% respectively.

Technology and environment have less influence compared to organization if SMEs want to adopt e-business in Europe.

They provide shares of 28.10%, 20.26%, and 51.63% respectively. Organization becomes the most influential factor in adopting e-business with human resources, demographics, and management contributing the most for this category. Each of them contributes as much as 25.49%, 12.42%, and 4.58% respectively. From the explanation above, it can be concluded that organization is the common issues faced by the SMEs in adopting e-

business. The SMEs in all continents, except Africa, consider organization to be the most important aspect in adopting e-business. In the four continents, the organization shares were around 50%. However, in Africa, both organization and technology play crucial roles in the adoption of e-business among SMEs (Table 3).

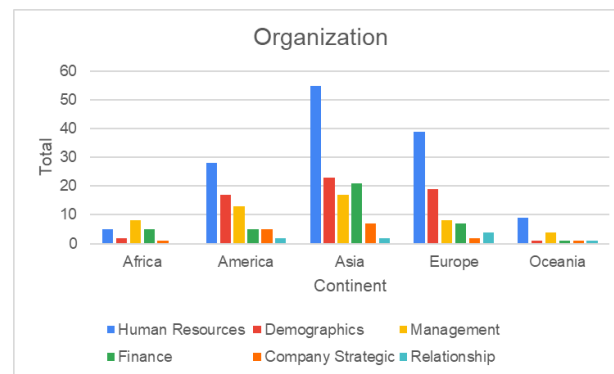


Figure 2. The Spread of Organization Issues in All Continents

Figure 2 shows the spread of organization issues in all continents. Under human resources, education is the most significant issue in the four continents. The level of education, especially for managers of the firms, has contributed to how e-business is adopted among SMEs. Bordonaba-Juste et al., 2012; Mazzarol, 2015; Nugroho et al., 2017; Siddoo et al., 2019 suggest that the level of education matters for SMEs if they want to adopt e-business. The higher the level of education is the higher probability the SMEs will adopt e-business. Furthermore, the higher the education, the more comprehensive e-business is developed in the firms and the firms that

adopt e-business comprehensively will develop e-business in all aspects of the business. However, not many SMEs adopt e-business comprehensively. Most of them only adopt marketing and sales electronically or through e-commerce (Zare, 2015). Further (Wynn et al., 2013) mention that the adoption of e-business is staging, and e-commerce is usually adopted first before the SMEs adopt internal integration and external integration electronically (a comprehensive e-business). The level of education influences how e-business is applied and developed among SMEs.

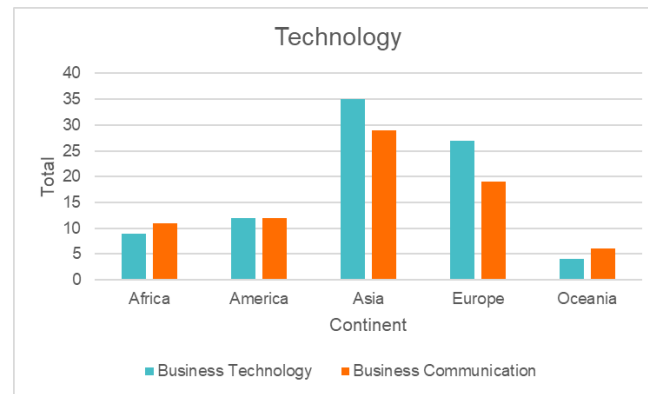


Figure 3. The Spread of Technology Issues in All Continents

Technology issues are divided into business technology and business communication. Business technology is technology related to adopting e-business. It contains technology integration, IT resources, security, suitable technology, technology adoption, and technology readiness. Meanwhile, business communication is defined as the platform used by SMEs to communicate with external parties, including customers, suppliers, vendors, etc. With regard to this definition and how SMEs perform communication, business

communication is constructed by mobile applications, big data, e-commerce, e-mail, e-business, social media, voice/SMS, and websites. This study found that technology issues were split into two among the continents. America, Asia, and Europe tended to have more issues in business technology whereas Africa and Australia/Oceania tended to have more issues in business communication. Figure 3. shows how technology issues are spread among the continents.

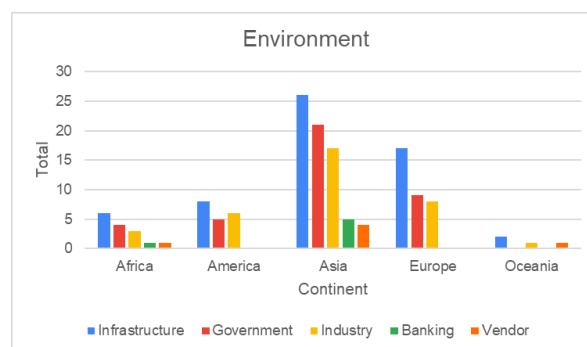


Figure 4. The Spread of Environment Issues in All Continents

Regarding environmental issues, infrastructure played the most important role in SMEs adopting e-business, followed by the role of government and industry. Figure 4 shows the environmental issues in all continents. Most infrastructure issues were related to ICT infrastructure and broadband connectivity. Related to the government role, their supports were

including policies and institutions, especially related to the financial burden of internet access. Furthermore, some support was needed to ease the SMEs adjustment to the changing environment. The industry had an important role in adopting e-business, especially in terms of competitors. The force of competitors influences SMEs to adopt e-business.

Organization

Human resources were the most important issue found in all continents, followed by demographics and management. Finance was not a significant issue, except for Asia SMEs. Human resources were related to knowledge, education, and skill of the management and owners of the SMEs. The higher the level of human resources is, the higher the possibility of the SMEs adopting e-business will be (Drew, 2003).

Knowledge of managers or owners in terms of perceived benefit and computer literacy in adopting e-business (Mpofu et al., 2009), along with their leadership style, benefits the firms to have better business efficiency, competitiveness, planning, and management. Meanwhile, knowledge of employees (Wang and Shi, 2009) influences the readiness of firms in adopting e-business. However, an additional factor of owners' leadership style has also benefited firms to adopt e-business faster (Siddoo et al., 2019).

The level education of the CEO (Parida et al., 2009), manager (Grandon & Pearson, 2004), and employee (Abu Abid & Rahim, 2012) benefits the firms in adopting e-business better. CEOs with higher education can motivate their employees, so they can adjust smoothly when adopting e-business (Levenburg et al., 2006).

Skills, especially in technical IT including programming, system analysis, and design, benefit firms in adopting e-business better. SMEs, in general, have fewer skilled employees (Albar and Hoque, 2019). This fact should encourage the managers or owners to support their employees to gain more skills and competencies so they can adapt themselves to a new system. Demographic issues include the issues of the size of firms, market orientation, and type of industry.

Technology

Based on the papers collected, technology can be divided into business technology and business communication. Both can be adopted at different levels depending on their readiness. For business communication, the level of adoption refers to the paper of Abdullah *et al.*, (2018) that divides the adoption level into eight stages including no internet access, email, social media, websites, e-commerce, mobile apps, cloud services, e-business, and transformed organization. In Africa, most SMEs dealt with lower-level issues of business communication adoption such as email and websites. Only some of the SMEs in Africa have already dealt with e-commerce and mobile apps for their business. None of the papers mention the adoption of e-business there. This situation leads to the conclusion the SMEs have not been familiar with e-business. For this reason, the adoption of business technology is relatively low in Africa compared to other continents (Figure 3.). Continents with higher level adoption of business communication in their SMEs tend to have issues in business technology, for instance, SMEs in Asia and Europe. In Asia, technology readiness and integration followed by security issues have been major issues faced by the SMEs.

Technology readiness and integration are related to the definition of e-business itself, which is defined as conducting transactions along the value chain; it includes purchasing from upstream suppliers, and selling products and services to downstream customers by using the internet platform together with the existing information and technology (IT) infrastructure (Oliveira and Martins, 2010). Therefore, technology readiness and technology integration become the most important issues based on the definition above. The engagement of SMEs with e-business depends on the readiness of technology in terms of humans and tools, whether or not the technology is ready to be applied in their business. However,

technology readiness relies on the availability of IT infrastructure. The data gathered from the papers collected show that infrastructure plays important role in e-business adoption among SMEs, especially in Asia and Europe (Figure 3). Besides infrastructure, technology readiness correlates with technical knowledge and skill of the management and IT investment performed by the management (Hussein et al., 2013). Furthermore, the numbers and varieties of IT installations such as computers, servers, LAN, Wi-Fi are also related to the stage of adoption of e-business (Zhu et al., 2006). In SMEs with higher technology readiness, their management will have higher technical knowledge and skill regarding the adoption of technology in their business, supported by the availability of IT installation in their firms. Meanwhile, technology integration discusses how the internet system has fully functioned in the business system. The firms with lower internet system adoption may function with limited internet in their business. Their systems are only limited to the use of email, social media, and websites. The higher-level adoption of the internet system allows the firm to perform a higher level of e-business such as e-commerce, mobile apps, and cloud service. Meanwhile, the highest adoption is the organization transformation.

The issue of security is dominant in Asian SMEs. They do not only deal with payment systems in online trading but also the customers' private data theft. More convenient payment methods may help firms to deal with the adoption of online payment. Financial inclusion becomes important for SMEs to know about. The issue of customer data protection has risen in the Asian region, especially those with regard to the private data theft.

Environment

SMEs in all continents consider infrastructure as a significant issue, especially telecommunication

infrastructure. This issue causes the limited use of online business and internet banking that support payment methods. Besides telecommunication infrastructure, the government's role is another issue faced by SMEs. The government's role includes the regulatory support and the availability of infrastructure that will assist SMEs in engaging with e-business. This intervention can lower the cost of internet access with higher internet bandwidth (Mwila and Ngoyi, 2019). Government policy in business development such as the availability of facilities and mentoring will support the growth of SMEs' engagement in e-business (Hadi Putra and Santoso, 2020). Business subsidy for diversifying sales channels is also needed by SMEs (Melnyk and Blyznyukov, 2021). Further, the industry affects the adoption of e-business among SMEs, such as industry association (Lawson et al., 2001), pressures from customers (Nugroho et al., 2017), and pressures from competitors (Ausat and Peirisal, 2021).

Conclusion

This literature study finds that SMEs all around the world face similar challenges in adopting e-business. However, they are different in the stage of adoption. In Europe, SMEs are quite advanced in terms of engagement with e-business and their competitiveness. The quantity of SMEs that engage with e-business is far above other continents. Furthermore, they have already adopted e-business far years ago. It is said that European SMEs and their ecosystem can be a role model for SMEs on other continents.

There are similarities of issues in adopting e-business. Based on TOE, most issues are found in organization, especially in terms of human resource capacity. SMEs are struggling in adopting e-business due to the limitation of capable human resources in their firms. Since e-business connects to a higher level of technology, the firms need

to have a higher level of education and knowledge of their employees to be able to adopt e-business smoothly in their firms. However, what matters is not only about the adoption but the willingness to adopt e-business. The willingness to adopt e-business depends on the top management and owners' insights that relate to the competitiveness of their firms. By being competitive, SMEs will always want to increase their market shares and tend to sell their products borderless. To do that, SMEs need to adopt e-business.

The second issue found in the environment is IT infrastructure. SMEs in all continents face a challenge in IT infrastructure. The challenges include the availability of affordable internet connection and bandwidth. The infrastructure itself has a close relationship with the government's role. For countries with high support from the government in terms of the infrastructure, their SMEs engage more intensely in e-business.

The third biggest issue is in technology, namely business communication. There are levels of e-business adoption, starting from the simplest to the most complicated ones. Before firms adopt e-business, they usually adopt e-mail, websites, and e-commerce. It is the application of a business communication in firms. Most small firms adopt e-mail, websites, and e-commerce for their business before they adopt e-business. The bigger the firms are, the higher level of business communication they will adopt to make their business efficient.

Issues faced by SMEs in all continents tend to be similar when they want to adopt e-business. The findings help answer the question whether a general pattern or a model of e-business adoption that can fit all SMEs exists. These findings can be used as a practical guidance for any parties who may want to support the adoption of e-business for SMEs. The government as an important stakeholder for the SMEs may

take some actions based on these findings so that the adoption of e-business for their SMEs can be accelerated and the domestic and borderless transaction such as export activities can be enhanced. Therefore, it can support the higher contribution of the country's GDP.

As a follow up of this study, further research on the sector or industry is necessary to investigate other specific issues regarding the adoption of e-business for SMEs. The findings might be different from one sector to another. Thus, it can provide a more comprehensive guidance for relevant parties including government who wants to take further action.

Notes On Contributor

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