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The impact of E-commerce giants on SMEs: Challenges, opportunities, and the fight for survival in the digital economy

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Abstract

Small and medium-sized enterprises(SMEs) have not been spared by the drastic changes that the surge of online marketplaces has brought to the business environment. The development in online markets places severe challenges as well as opportunities for the small business as the dominant online retail market is controlled by massive e-commerce companies. Its findings unveil the complexity of nature between today's giants of the digital economy and e-commerce and SMEs. The present review is predominantly based on the material that was published in the subjects within the last five years, including academic journals, company reports, and economic statistics. Employing this methodology, market forces, technology advancement and its implications on the economic relationship between the established e-commerce marketplace giants and SMEs are evaluated. As mentioned in the study, new opportunities are opening up and these conventional business models are likely to be broken due to the shifting dynamics between these e-commerce giants and SMEs. A pressing challenge familiar to many SMEs is great competition, although previous studies showed that, with the help of digitalization, organizations can develop new growth and development prospects. Some of the key issues amplifying success or failure of SMEs in the digital marketplace are as follows Technological readiness Strategic positioning Ability to harness platform ecosystems. The research confirms that effective policies are needed to maintain the competition combined with the opportunities to grow SMEs in the digital economy. As a result, one of the most important challenges is to determine how SMEs can use the opportunities offered by large e-commerce platforms while avoiding the loss of their own brand and clientele. This research underlines the crucial need of the synergistic approach to the online marketplace and the long-term partnership between the giant e-commerce platforms and small and medium enterprises (SMEs). From this study, we can therefore argue that SMEs are equally capable of thriving and can even survive the current digital business environment by being availed with the right tools and support.

Keywords: E-commerce; SMEs; Digital transformation; Market dynamics; Competitive landscape; Customer relationship management; Niche markets; Digital skills; Market access; Strategic partnerships.

1. Introduction

Electronic commerce has dramatically impacted the global business environment, competition, and organizational development through its ability to facilitate organizations' buying and selling processes. Choudhury & Sabharwal, 2020 declares that digitization of trades has led to developing a system that offers both prospect and threats to different organizations. Analyzing data provided by the World Bank Enterprise Surveys, it was found that the number and positions of SMEs varied greatly depending on the economic sector. EDE contains over 98 percent of all firms, and has the largest ratio of SMEs, where SMEs: Still seen as a constraint, despite being an untapped opportunity to generate increased value and revenue. On the other hand, Emerging and Developing Asia (EDA) has slightly lower but still significant proportion of SMEs at about 94.5%. Zhang et al. (2020) have argued that SMEs are the most affected by e commerce giants. However, employment data clearly indicate that SMEs remain a major employment generator in the

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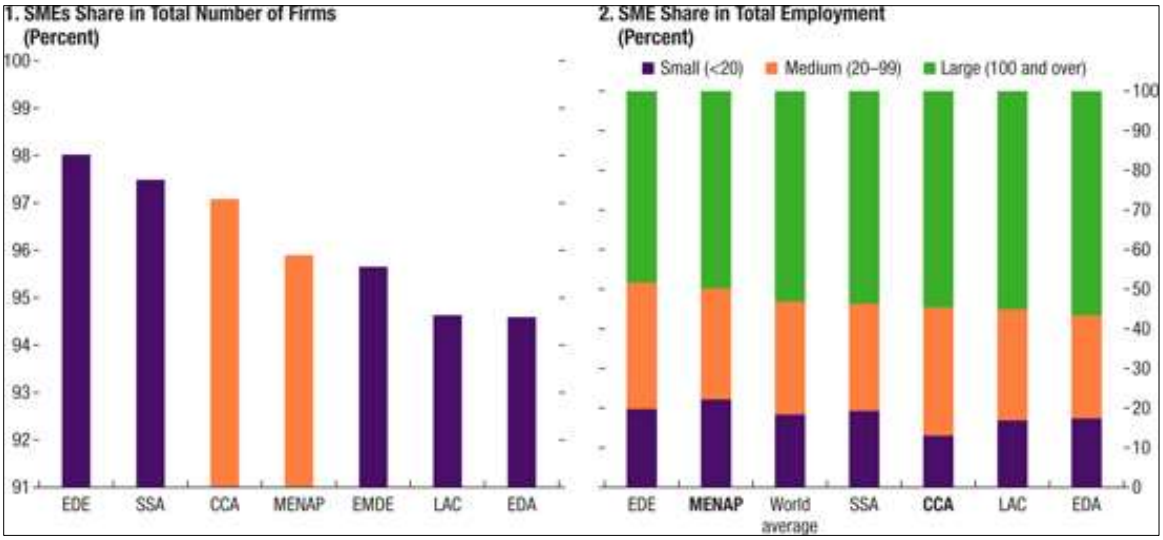
global economy. From the employment distribution curve, SMEs are the major suppliers of most jobs in many areas and large businesses, that comprised 100 and above employees impose between 40-50% of the market. Small and medium-sized firms are a significant problem in MENAP countries where they account for nearly 50% of overall employment.



Note: EDE = Emerging and Developing Europe; SSA = Sub-Saharan Africa; CCA = Caucasus and Central Asia; MENAP = Middle East, North Africa, Afghanistan, and Pakistan; EMDE = Emerging Markets and Developing Economies; LAC = Latin America and the Caribbean; EDA = Emerging and Developing Asia; SME = small and medium-sized enterprise

Figure 1 Small and Medium-sized Enterprise in the Economy. Source: Source: World Bank Enterprise Surveys, latest available data

Electronic commerce has transformed the business world with developing difficulties in how organizations conduct business, competition, and development. Choudhury and Sabharwal (2020) argue that digitalization of trade has led to the formation of an intricate system that has both opportunities and threats for all stakeholders regardless of their size. Analyzing the WBEs data, differences in the number and corresponding roles of SMEs in various sectors of the economy were identified. EDE contains the largest proportion of SMEs that are above 98% of all the firms. However, Emerging and Developing Asia has a smaller but relatively larger amount, 94.5 per cent SMEs. In this article, Zhang et al. (2020) suggest that the surge of e-commerce behemoths is posing a major threat to SMEs. However, there is evidence that SMEs remain a continuing source of employment generation across the world as is revealed in the following employment statistics. Employment distribution statistics show that most organizations are SMEs, although large businesses define jobs as 40-50 %. This is particularly conspicuous in the MENAP nations because small and medium businesses provide work for nearly half of the employees. The primary objectives are:

- To identify the changes that transpired in the past years in terms of SME engagement and receptiveness to e-commerce.
- Indeed, with other factors held constantly, technological and economic environment dynamics has a strong impact on SME competitiveness in e-commerce realm.
- To assess the effects that large scale e-commerce companies are creating on SME business strategies and markets.
- This paper aims to establish the following objectives to meet the set research question:
- To evaluate the policies that would help to attain a better and sustainable digital market environment

1.1. Defining SMEs and Their Specific Features

SMEs as small and medium enterprises form a large and very diverse population of enterprises, with features of their own effective operation and functioning. According to the criterion utilized by various countries and regions, Aina (2007) stipulates that, balance sheet total assets, turnover and employees are common factors in defining SMEs, Business Statistics UK (2020) revealed that 99% of companies operating across the global economies are considered SMEs highlighting the important role of these industries in the business domain. Specifically, the SMEs have always shown a remarkable capacity to survive and survive in a hard business climate. Such companies, especially the new ones, are credited for their creativity and flexibility by Stockport and Kakabadse (1992) since new conditions in the market and the changing customers' needs are effectively handled. While the digital economy today is more progressive and active, it is necessary to possess the ability of flexibility to shift within a short period. Ihua (2005) also underlined

the importance of small and medium-sized firms in developing entrepreneurial skills, poverty alleviation and jobs' creation in local places.

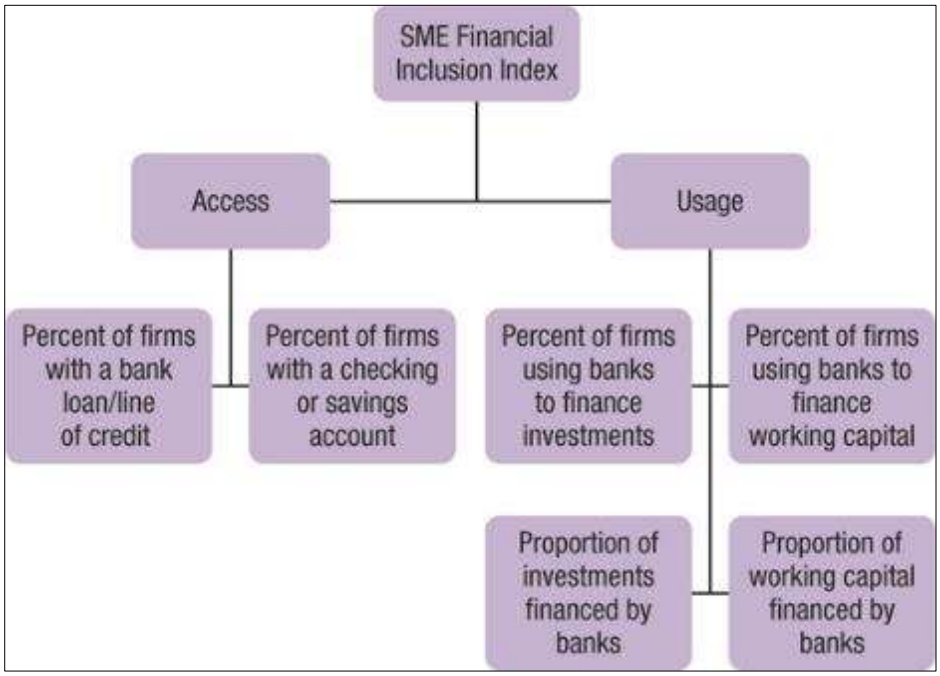


Figure 2 SME Financial Inclusion Index. Source: https://www.elibrary.imf.org/view/journals/087/2019/002/article-A001-en.xml

The SMEs are well known to be Sensitive to local economic and community environments in which the operate. These businesses ordinarily maintain connectivity to their local communities and thus support social cohesiveness as well as economic stability as observed by Wright et al. (2007). This regional focus can be an excellent source of loyal clients; however, the market-restricting access of the SMEs might be an issue. But according to the research of Dibrell et al. (2008), these geographical barriers have started to disappear due to the integration of digital technology. Another important characteristic concerns the financial structure of the SMEs involved. Such groups often have limited financial capital, which renders the conventional options of funding sources quite inaccessible for them (Al Qubtan et al., 2021). It may handicap or slow their capacity to expand in the marketplace or to fund new forms of technology. However, according to Terziovski (2010), this limitation assists SMEs to adopt more resource-utilization and innovation approaches.

Human capital is a crucial factor for SMEs to be able to function. Anton & Onofrei (2016) found that managers and employees tend to have a more face-to-face relationship in small organizations, and this results in a constant state of readiness and flexibility of the means through which problems are solved. This characteristic may be especially evident in two areas: product specialization and customer relations. However, as Kraemer and Dedrick (1996) also pointed out, it can also become a barrier to specialization and control of extensive processes, as already pointed by Balocco et al. (2008). Yet, small businesses with less than 500 people usually have a better system for making decisions than a large company. According to McCole and Ramsey, this makes it possible to respond to changes in the market or changes in the wants of the customers. But this very factor can, at times, give rise to somewhat more uncoordinated strategic approach planning. Zakaria and Janom (2011) stated that this may limit SMEs' ability to strategize and implement long-term visions of how they would achieve digital transformation.

1.2. Technological Evolution and SME Adaptability

Technical innovation has transformed the nature of competition and the functioning of SMEs in today's environment. As noted by Wymer and Regan (2011), the SME sector needs to respond positively to such changes in the industry operations because it has been significantly impacted on by the continued advancement in digital technology. It has consequently created a new order in how the smaller businesses manage their markets and customers. SMEs have had rather mixed feelings about adopting and implementing information technologies. While a portion of SMEs are willing to appliance new technology, others are reluctant because of limitations in access to resources or concerns regarding the profitability of technology investment (Kartiwi and MacGregor, 2007). This has resulted in digital divide in the SME

sector meaning that firms that embrace technology when tendering its services enjoy a better marketplace against those that do not implement the technology. Based on Jahanshahi et al. (2011), this difference between the traditional and agility-oriented logistics is becoming more imposing in defining the competitiveness and viability.

The effects of technological change go beyond the website design of SMEs' operations. According to Gefen and Straubb (2004), technology has impacted on SME business models to the extent of altering all their features. This includes customer relationships and supply chain management. Digital tools have made it easy for SMEs to cut costs, improve efficiency and even export their goods. However, it is noteworthy to realize that such technological integration demands relatively big investment on both talents and infrastructures in many cases (Chang, 2006 and Kapurubandara and Lawson, 2006). Among the critical drivers for enhancements of new technologies used by SMEs is through the efficiencies afforded by online markets. Nielsen (2010) claims that such platforms have become inevitable because they provide SMEs with access to large user groups and factors that have already been integrated into existing technologies. As this has created markets for opportunities, it has also created new forms of competition and reliance for the small firms (Offstein and Childers, 2008).

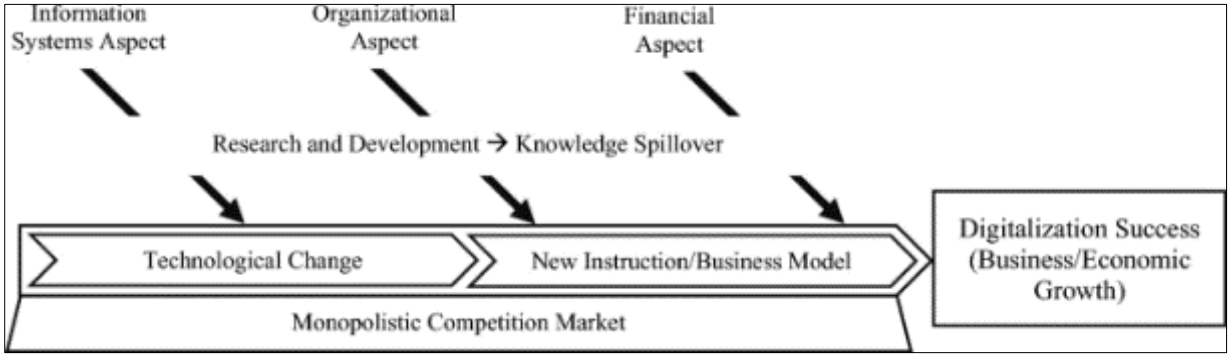


Figure 3 Business aspects in SMEs' digitalization: Source; Sagala, and Őri, (2017)

Technology is also an important contributor towards the innovation and product development in SMEs. Better decisions and product differentiation have arisen from the application of technologies that facilitate improved client data collection and analysis for SMEs (Moriarty et al., 2011). This power, which was initially essential to only major players in the market, has made some segments of the market fairer. The third key area of development of SMEs is related to the usage of mobile commerce systems. As pointed by Jagoda (2010), the increase of the mobile technology offers SMEs with more communicating and transactional chances than before with the consumers. However, Wright (2010) notes that SMEs engage in multiple forms of digital media, and therefore they find it much harder to compete online.

1.3. Economic Frameworks and SME Development

The conditions that govern the operations of SMEs in the current business world are considerably different from how they were a generation ago. SMEs' role in national economies shifted from being a catalyst of innovation to constituting the core of growth (BIS, 2013). Global competitions have risen to a worrisome level and economic frameworks must be redesigned if small and medium-sized enterprises (SMEs) are to be successful. Optimization of Small and Medium Sized firms (SMEs) is beyond the capability of conventional economic models. According to Hattingh et al. (2012) this is because smaller enterprises might leave unnoticed within the overall policies formulated for the larger enterprises. However, according to Taylor and Owusu (2012), there is a increasing concern with regard to the immediacy of the aggregation of more inclusive forms of economies that take into account the various others objectives of SMEs and the versatility they bring to the economy.

SMEs and their link with financial markets are a factor that always plays a role in the economic models. According to Mashanda et al. (2012), even though SMEs play a pivotal role in growing the economic status of a country, many of those businesses face challenges in their attempts to access credit. Discussing how this leads to the emergence of the new forms of the AF, Shemi (2012) mentioned that the given approach leads to growth and defining the increased role of P2P online platforms and fintech solutions in SMEs' funding gaps' filling. International trade rules and policies play a significant role in the growth of the small and medium enterprises. Pursuing the goal to improve competition of SMEs at an international level, the World Trade Organization (2013) points out the importance of trading frameworks. According to Zerenler and Sahin (2013), there are major challenges associated with efforts to expand internationally among many small and medium-sized firms (SMEs). Two of them are stringent rules and regulations and the absence of funding for market research and development.

New aspects have been injected into different economic models governing the SMEs due to the current digital economy. From the ITC statistics of the year 2013, it is revealed that even though SMEs experienced a favorable change in their competitiveness because of the onset of e-commerce and they were able to enter new markets through the than the nature of these markets changed, and several new forms of rivalry entered the scene. The study from the International Trading Centre reveals economic policies undergo transformation to tame the benefits and drawbacks of internet trading. These frameworks are beginning to shift to look at how systems of innovation foster the growth of SMEs. Going further, Golovko and Valentini (2011) point out that flexibility of the SMEs plays a significant role in ensuring the required level of innovation and modifying the market environment for benefit of the firm. Saridakis et al. (2019) noted that this has paved way for open innovation economic policies meant for supporting innovation clusters and networks of economic actors that involve information exchange critical to SMEs' innovation.

1.4. Market Dynamics and SME Positioning

For small and medium-sized businesses, one of the critical factors of undertaking business operations is the ability to manage change in markets. Adams and Parboteeah (2017), and the fact that the maturity of the market has changed differently the way in which SMEs compete and operate in the markets. Due to this change, the older positioning strategies must be overthought and the new positioning strategies in the market must be developed. Higher competition and fast fluctuations in client preferences characterize the modern markets. Customers' expectations are always high due to new technologies as well as the conveniences offered by large B2C format stores as noted by Ngai & Wat, (2002). This generates a tough environment for SMEs. With reference to competitive market positioning, it has created opportunities and challenges for SMEs. On the one hand, they have increasingly large and better funded threats; on the other, they must find a way to stand out.

In large discussions about the positioning of SMEs, the concept of niche markets has gained much relevance. Rana et al. (2019) note that most successful SMEs have effectively focused on sectors which large firms either do not consider or consider unattractive. Similarly, when using this approach, SMEs can create value propositions based on First Globe's execution and SMEs' agility and specialized cognizance. The issue of sustaining these differentiated roles, as rightly noted by Lin et al. (2019), increases the moment that more and bigger players gear up to penetrate more specialized segments. In this aspect of marketing, specifically the placement of SMEs, data analytics and consumer insights can no longer be a luxury. According to UNCTAD (2021), having the ability to evaluate the market and the ability to get hold of customer information are two aspects that can a lot influence the ability of a small or medium enterprise (SMEs) to identify market opportunities. Dos Santos et al.(2017), however, showed that SMEs face several constraints that limit the application of data analytics through lack of resources and technological capabilities.

It is more than can be said, for client relations and brand building is critical to the positioning of SMEs within any market. Abebe (2014) noted that it is true brand experiences and personalization enhance the formation of good relationships with clients of successful SMEs. This strategy puts them in a vantage point against other larger competitors that may not be capable of implementing the necessary level of customization and customer touch point interactions. Market and community relevance acumen needs to be a core part of positioning strategies adopted by the SMEs. As stated by Abou-Shouk et al. (2016), although the existing market is experiencing globalization, most SMEs harvest their knowledge about culture. The role and supervision issue of small and medium enterprises (SMEs), on one side focusing on local markets while on the other side needing to factor a global market environment and consumer expectations set by global e-commerce as discussed by Chuang et al. (2007). Regarding SMEs' efforts to sell their products in the context of the market, the concept of collaborative ecosystems has gained attention faster. In the current operations, several SMEs are making efforts to enhance the effectiveness in the market and position themselves more effectively through the formation of business networks and strategic alliance according to Susanty et al. (2020). In this way, SMEs can strengthen their market positions because they obtain access to resources and competencies which it would be difficult to develop individually.

1.5. Technology and Growth of SMEs—Neoclassical and Modern Economic Views

The theoretical structure of analyzing the connection between economic development theory and technology highlights the better understanding of small and medium-sized enterprises (SMEs). According to Choudhury and Sabharwal (2020), the use of technology in business operations is a key factor that determines improvement of productivity and market outlet for SMEs. Specification of innovation reflects both the enhancement of existing methods and tools at a conceptual level and the application of these methods and tools in solving actual business problems. Adams and Parboteeach (2017) stated that in current competitive environments, the extent and position depends on the technological advancements a SME has been able to harness.

Applying the principles of production possibility frontier (PPF), one might explain economic impacts of technological advancement on SMEs. Technological advancements allow the small and medium-sized firms (SMEs) to derive more output from the same resources making the production boundary line longer (Zhang et al., 2020). Since SMEs are always strapped for resources, this decision should have the most impact on them. Technical improvement has been continuous throughout the growth of industrialized country's economic framework (World Bank, 2019), and this is what contemporary SMEs should also follow suit. To show the relationship between technology and the growth of SMEs, a modified production function can be used within the structure of the neoclassical economic theory. Building traditional models, we can represent this relationship as:

$$Y = T(L, K) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 1$$

Understanding the small and medium-sized enterprises (SMEs) in relation to the economic development theory and technology advancement gives concrete insights. According to Choudhury and Sabharwal (2020), the level of technology adoption for use in operations is the key driver of the improvement of efficiency and access to the market by SMEs. It includes here theoretical generation of new ideas and approaches as well as their application in actual business settings (implementation). According to Adams and Parboteeah (2017) argued that in current competition, opportunities and position of SMEs depend, mainly, on how the technological advances are utilized.

Applying the production possibility frontier (PPF) concept, one might comprehend the impact of technological advancements on SMEs with specific regard to their economy. Technological advancement allows firms, especially the small and medium scale enterprises (SMEs) to gain more productivity with the available resources, consequently expanding their production possibility frontier (PPF) (Zhang et al., 2020). As a result of this move, SMEs are expected to be greatly affected by this decision primarily because of their limited capital. Sustaining technical change has been imperative for generating economic wealth in the industrialized countries and this is a route, which modern SMEs have no other option other than to tread. The concept of technology can be incorporated into the neoclassical growth model by using a modified production function in order to reflect the growth of SMEs. Building traditional models, we can represent this relationship as:

$$\frac{L}{K} = \frac{T(L, K)}{L} = y = T(k) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 2$$

y is the level of per capita output; k is the capital intensity, that is the relation of capital stock to workers. According to UNCTAD (2021), it has also pointed out that the link is useful since for the SMEs appreciable resource utilization is critical as far as survival and growth of businesses are concerned.

Outcomes of SMEs are closely related to the patterns of growth in employment (n) and decline in fixed capital (d) factors. To offset depreciation and sustain competitiveness, according to Abebe (2014), SMEs are always investing in technical enhancements. This paper revealed that the direction of growth investments of a SME depends on the incrementum investment capital (i) relative to the product of the flow of growth factors (n+d) multiplied by k. In their opinion, if it is possible for SMEs to maintain the balance between them, these enterprises can achieve continuous expansion by applying the technologies.

In addition to the neoclassical perspective, modern economic theories have evolved and embraced technology as an exogenous factor in the growth of SMEs. Saridakis et al. (2019) points out how digital technology has altered traditional methods of growth for SMEs. This change has spanned not only physical capital but humanity capital development and research and development facilities. According to Susanty et al. (2020), the enterprises which invested both on people and technologic capital development observe a balanced and constant advancement in the digital business environment. It is almost impossible to overemphasize the role of entrepreneurship in the growth and technology advances of SMEs. Abou-Shouk et al. (2016) avow that to advance towards innovative solutions based on technology, there appear several common elements embraced by effective entrepreneurs managing SMEs – the most common parts being the creative application of new technologies to corporate problems. Coupled with technical advancement, this aspect provides great impetuses to sustain the high rate of economic growth among young and aspiring entrepreneurs. According to Chuang et al. (2007) in a digital market becoming increasingly competitive SMEs' performance crucially depends on their ability to find and exploit technical opportunities.

2. Coverage and Methodology for Data Collection

The primary purpose of this literature study is thus to review existing knowledge on the current situation regarding effects of global e-commerce giants on SMEs, including the opportunities, threats, and survival strategies in the context

of the digital economy. This paper's approach is more systematic and rigorous, which can provide a more comprehensive review of the literature for this study.

In the initial data gathering stage, a general search of the World Wide Web articles pertaining to SMEs generated more than one million hits. By using the two terms SMEs & E-commerce Giants as filters, this review delimitated from a vast pool of data. Employing these terms, the useful information regarding the relations of the larger players of e-commerce with the others with focus on small businesses in the online marketplace was identified.

Extra criteria were applied in the second stage of the filtering process to refine the selections and ensure that only credible sources were included. These included number of citations on google scholar database, Journal impact factor and the company reputation. The best-known international publishing houses such as Emerald, Elsevier, Taylor & Francis, and MDPI, which are acknowledged for providing good business and economics research, were given preference for publication.

By these criteria, 312 documents were chosen for the second round. After narrowing down the articles through the Cochrane filter from this pool, a total of 98 empirical research articles that responded to this research challenge were then hand-picked carefully for their exceptionally sounded relevance to the main topic of the review. Because of this screening process, only the most relevant papers which complied with the set criteria were used in the final analysis.

In addition to articles from scholarly journals, the study employed works originating from recognized global organizations such as the World Bank, WTO and IMF. These sources were incorporated to expand the discussion and make the overview of the most popular topics related to the current state of e-commerce and SMEs, as well as the prospects for affecting them at the policy level.

PRISMA (the Preferred Reporting Items for Systematic Reviews and Meta-Analyses), which has been followed in this review, is well recognized as the best practice trials. This methodology enhances the quality and reliability of literature selection and analysis reported in the literature.

A table of literature classification was prepared to offer a summary and an overview of the selected articles. The table presented below will assist in understanding where and how the study on this topic is located. This is done by analyzing the papers and categorizing them against many important parameters.

Table 1 Literature Review Classification Table

Category	**Subcategory**	**Percentage**
Research Focus	Direct impact of e-commerce on SMEs	28.6%
	Digital transformation strategies	22.4%
	Competitive challenges	18.4%
Methodology	Quantitative studies	42.9%
	Qualitative studies	31.6%
	Mixed methods	25.5%
Geographic Focus	Developed economies	39.8%
	Developing economies	34.7%
	Global perspective	25.5%
Industry Sector	Retail	31.6%
	Services	27.6%
	Manufacturing	23.5%
	Cross-sector	17.3%

The table above presents a detailed description of the publications in terms of the focus of the examined studies, the method used, geographical region, and industry sector. Perhaps, it is more comprehensible when classified; thus, we are likely to understand where the current research is scarce or abundant.

The top three areas of focus of attention were competitiveness threats, which were noted by 18,4% of participants, digitalization activities, which was mentioned by 22,4% of participants, and the impact of e-commerce on SMEs directly. The distribution of this topic can capture this multidimensionality of the topic because it shows different ways in which researchers have looked at the topic.

The quantitative studies constitute 42.9% of the studies reviewed while the qualitative studies were 31.6% and mixed 25.5%. Realizing that the interpretation of SME experiences in the context of the digital economy entails several qualitative dimensions, researchers have used a series of methodological approaches, however, as shown for each of the above-mentioned distributions, the focus is made on empirical data.

Despite a focal interest in industrialized economies (39.8%), the study also covers emerging economies (34.7%) and has a substantial minority of (25.5%) that is interested in the world economy. This distribution shows that e-commerce does not have similar impact in different economic conditions of the world.

The retail sector ranked first (31.6%) followed by the service sector (27.6%), which showed that e-commerce has a major influence on these sectors. But the observation coming from the manufacturing sector, 23.5%, and cross-sector domain, 17.3%, shows that the topic is relative to any business.

Finally, this methodical approach and careful classification of the literature enable further research and integration of the results gained. This review of the current literature will thus try to approach the subject matter with these multiple perspectives to give a balanced view of the issues that SMEs face and the prospects for their survival amidst the rising dominance of e-commerce giants. It also outlines several potentially productive avenues for future research and policy debate.

3. Analysis of the Results and Discussion

3.1. The Impact of E-commerce Giants on SME Market Dynamics

3.1.1. Shifting Competitive Landscape

The emergence of dominant e-tailers has brought both opportunities and threats to the eventual Small and Medium-sized Enterprises (SMEs). Choudhury & Sabharwal (2020) found that the COVID-19 disruption has unbundled the entry barriers for SMEs in several sectors, as digital disruption ushered in by the e-tailer giants elicited a positive effect. As market access was leveled, small businesses can go to audiences that earlier were untouchable for one reason or the other including geographical barriers and lack of capital. Zhang et al. (2020) highlights that this leads to increased competition due to SMEs gearing up against global players and e-commerce giants apart from domestic competitors. The competitive index (CI) that compares the performance of SMEs in the online marketplace is as follows:

$$CI = \frac{(\text{Market Reach} \times \text{Digital Capabilities})}{(\text{Resource Constraints} \times \text{Platform Dependency})}$$

Digital competencies and extended market access present certain possibilities, but scarce materials and reliance on enormous ombudsman e-shophouses point to certain limitations. This index on the other hand focuses on the dynamic relationship between these two variables. As Abebe puts it further, SMEs that effectively utilize e-commerce platforms have potential for fast growth, but at the same time expose themselves to risks of Srang behavior. In another perspective on how the emergence of online marketplaces impacted SMEs, it has been noted that the competitive advantages that SMEs use to enjoy are slowly being whittled down by the usage of the online markets. As observed by Susanty er al., (2020), while earlier on SMEs relied on factors such as personal contact and familiarity with the region to differentiate themselves, in today's digitalized economy, factors such as price differentiation, selection, and delivery times take Centre stage. Because of this change, many SMEs need to rethink the services they deliver and make essential changes in their business models. The following is the outline of how SMEs might adapt to the digital economy:

SME Adaptability = f(Digital Skills, Resource Flexibility, Innovation Capacity, platform integration)

From this purposive function intended towards the existing function, it indicates that it is high time that SMEs acquired digital competence; assigned resources efficiently, innovated constantly and effectively accommodated e-commerce platforms so as to survive the current VOLATILE competition. Saridakis et al. (2019), who highlight how innovation can help SMEs to build their niche positions in the face of competition from big firms, also agree with this view. Marketplace players influence the structure of SME markets in a rarely antagonistic but more complex interaction. Large e-commerce companies may develop business ecosystems that can be joined by SMEs and may even get some advantage from the platform, material and technical basis, competencies, and customers (Lin et al., 2019). The authors, nevertheless, mention that with time, the dependence of SMEs on the rules and algorithms of the platform may lead to those ecosystems having power dynamics. This dynamic is measured by the Platform Dependency Ratio (PDR) in the following ways:

$$\text{PDR} = \frac{(\text{Revenue from Platform Sales})}{(\text{Total Revenue})}$$

High PDR can be either an advantage or a disadvantage depending on how dependent SMEs are on e-commerce platforms. This leads to the lock-in impact that hampers SMEs' ability to navigate outside the platform ecosystem because of investments made in platform-specific processes and technologies (Rana et al., 2019). The change in the competitive landscape has brought about new dimensions of competition and cooperation among SMEs. Abou-Shouk et al., (2016) has revealed that some small and medium entrepreneurial organizations are forming groups and affiliations to competitively contend with more significant firms in the online commerce. Some of the convenient interests of these alliances are negotiating muscle when it comes to bargaining with the e-commerce platforms, marketing ventures, and sharing of assets. The success of these kinds of cooperative efforts can be measured by a collaborative advantage index (CAI):

$$\text{CAI} = \frac{(\text{Shared Resources} + \text{Joint Market Power})}{(\text{Coordination Costs} + \text{Individual Autonomy Loss})}$$

This indicator shows the extent of gain from cooperation against the costs associated with increased coupling and decreased local decision-making authority. Chuang et al. (2007) also identify key characteristics of partnerships for SMEs in the digital economy: Partners have both a formal contract for partnerships that defines the structure of cooperation, and the trust-based activities that allow Herman for organizing the collaboration and for the ability to respond to changes in the market.

3.1.2. Market Access and Global Reach

The e-commerce giants have availed templates that make it easier than ever before for SMEs to sell to consumers across the globe. Small and medium-sized enterprises (SME) can transact in a "borderless" digital marketplace since they do not have to be in the same location due to advancement in e-commerce platforms (World Bank, 2019). Global Market Penetration Index (GMPI) measures this enlarged reach:

$$GMPI = \frac{(\text{International Sales Revenue})}{(\text{Total Sales Revenue}} = 100\%$$

Equation 3.5: Global Market Penetration Index

This is because, a higher GMPI denotes a higher turnover in sales across international markets through the e-commerce medium. According to Ngai and Wat (2002), this globalization has most benefited SMEs in specialized sectors where they are able to pool the forces from a global market that would otherwise be inadequate locally. With all the concepts of global diversification, access to new markets, more ideas and competences, the authors pinpoint one more important strategy that means that SMEs must compete in new much more saturated markets. The role of e-commerce platforms in facilitating SMEs internationalization is further explored by Saridakis et al. (2019), who propose a model for SME global expansion readiness:

$$\begin{aligned} &Global\ Expansion\ Readiness \\ &\quad = f(Digital\ Capabilities, Product\ Adaptability, Cross \\ &\quad - cultural\ Understanding, Logistics\ Network) \end{aligned}$$

This function implies that to use e-commerce platforms for globalization, one must possess's technological skills, product versatility, cultural understanding and logistics capability. UNCTAD (2021) agrees with this assertion in the

context of SMEs having to leverage the international opportunities offered by platforms for e-commerce, which requires digital competencies and global supply chain networks. Market access, which has been enhanced to have a profound effect on SMEs' growth paths. What follows is a description of a paradigm for SME growth within the digital economy provided by Abebe (2014):

$$SME\ Growth\ Rate\ =\ \alpha\ +\ \beta1(Market\ Access)\ +\ \beta2(Digital\ Investment)\ +\ \beta3(Platform\ Integration)\ +\ \varepsilon$$

Here, β1, β2 and β3 represent the coefficients that establish the effect of digital investment, platform integration and market access respectively while ε represent the error term. According to this model, e-commerce platforms' increased access to markets when paired with the correct levels of digital investments and the correct approaches to platform integration would substantially increase SMEs' expansion. The advantages that stem from enhanced market access opportunities are nonetheless not distributed evenly across SMEs. Lin et al (2019) in their study on the 'digital divide' within different SMEs find out that the latter do not have limited resources or lack experience in digital fields, the firms are better placed to leverage on e-commerce platforms for internationalization. An SME's capacity to leverage improved market access is assessed using the Digital Readiness Score (DRS) in the following ways:

$$\text{DRS}\ =\ (\text{Technical Infrastructure}\ +\ \text{Digital Skills}\ +\ \text{Online Marketing Capability})\ /3$$

Firms with higher DRS values are more capable of leveraging e-commerce channels to penetrate global markets. SMEs depend on their capacity to manage cross border transactions which are not without their own unique challenges including managing in different currencies, laws, and cultures as pointed by Chuang et al., (2007). Market access and SMEs are not directly associated most of the time. While e-commerce has the potential for SMEs to grow at a faster pace, Susanty et al. (2020) see that platforms they use expose smaller firms to international competition. If SMEs with high MERI expand into new markets using e-commerce platforms, they are likely to struggle during cyclical competitive pressures, particularly if they do not have competitive advantages or adequate resources. Rana et al. (2019) has also stressed on the need of planning and risk on for the SMEs to operate within the available opportunities and threats due to liberalization of international markets in the digital economy.

3.1.3. Technological Adaptation and Digital Transformation

Bigger firms' emergence and dominance have forced SMEs to adapt rapidly to new technologies and, in effect, glamor. Adams, and Parboteeah (2017) have argued that on one hand, owing to pressure to interface with leading e-commerce platforms, several small firms have increased their ardor for digital change. Higher value of DTR refers to enhanced readiness level towards digital transformation which is crucial for survival of SMEs in the competition focused sector dominated by e-commercial characteristics. In their studies, Choudhury and Sabharwal (2020) postulated that if SMEs were to transform digitally, they had to do so with the understanding that virtually all their business procedures and approaches to consumer contact required redirection. The decisions made by firms regarding technology adoption are critical determinants explaining the level of efficient performance that can be observed in SMEs. According to Zhang et al., (2020) a model that associate digital skills to growth of SMEs is presented as follows.

$$SME\ Growth\ =\ \alpha\ +\ \beta1(Digital\ Capabilities)\ +\ \beta2(Market\ Reach)\ +\ \beta3(Resource\ Efficiency)\ +\ \varepsilon$$

Here, α signifies the baseline growth rate; β1, β2, and β3 symbolize the coefficients that demonstrate the impact of digital capabilities, the market reach, and resource efficiency, respectively, whereas ε denotes the error term. This strategy asserts that SME infrastructure can offer value by enhancing the direct and indirect impact of digital investments to the growth of the businesses. However, the road map to the establishment of the digital world presents some troubles to small and medium enterprises (SMEs). According to Wymer and Regan (2011), there are several challenges to e-commerce for small business enterprises; these are lack of capital, lack of adequate technical know-how, and insecurity of virtual space. A high Technology Adoption Barrier (TAB) score suggests that there are high barriers to the adoption of technology, which may be a barrier to SMEs adoption of digital technologies in the e-commerce sector. Kartiwi and MacGregor opine that these barriers are typically more critical in less-developed countries whose supportive structures such as infrastructure and human capital are scarce and inadequate in supporting digital adoption.

E-commerce platforms hold a rather complex position as they act as key enablers of the digital transformation of SMEs. Lin et al. (2019) examines how these big platforms offer enablers and assets for digitization and develop dependencies that confine the level of organization freedom of the SMEs. High PUE suggests that a SME is efficiently using the e-commerce platforms resources to support the business. Abebe's study in 2014 has it that over reliance on tools provided by the platform might increase chances of lock –in –effect hencestersming the capacity of SMEs to operate on their own

or move to other platforms. The e-commerce industry has rapidly grown in terms of technological advancement whereby; on one hand, they offer benefits to SMEs, while on the other hand pose difficulties. Saridakis et al. (2019) outlines the need for learning and flexibility in the current dynamic environment. To properly assess a SME's digital agility, the authors suggest using the Digital Agility Index (DAI).

$$\text{DAI} = (\text{Learning Rate} \times \text{Innovation Capacity}) \Big/ (Technology\ Lifecycle \times Industry\ Disruption\ Rate)$$

A SME with a high DAI is a position that can take advantage of new digital opportunities while making necessary changes with regards to the technology. In line with this view, Susanty et al. (2020) posited that small and medium enterprises with digital agility are better placed to survive the unrelenting disruptive innovation coming from e-commerce goliaths and other digitally proficient rivals.

3.1.4. Data-Driven Decision Making and Analytics

Small and medium – sized enterprises SMEs are poised to move towards data-driven decision making, through the rising trend in e- commerce platforms. UNCTAD (2021) pointed out that due to Big Data and AI, SMEs have changed their ways of market analysis and developed products and their interaction with customers have been transformed as e-commerce behemoths granted them access to huge amounts of consumer data along with analytical tools. The Analytics Utilization Index (AUI) can be used to quantify the impact of data analytics on the performance of SMEs in the following ways:

$$\text{AUI} = \frac{(\text{Data} - \text{Driven Decisions} \times \text{Decision Accuracy})}{(Data\ Collection\ Costs + Analysis\ Complexity)}$$

The measure of AUI, or the ability to use data analytics, has increased meaning that businesses are being more efficient in utilizing analytics in their business processes. Using big data analytics, SMEs could potentially offset certain market dimensions to level the playing field as provided by Ngai and Wat (2002). However, not all SMEs can increase their efficiency and revenues through use of data in their decision-making processes. As Lin et al., (2019) propose the 'analytics divide,' those organizations that can invest more and have better technical capabilities tend to generate enhanced value from big data. This study found that the extent of incorporating data analytics into managerial decisions is influenced by the DAR score, where SMEs with local and international operations have higher levels of DAR scores. According to Abebe (2014), in as much as many e-commerce platforms offer handy tools for analysis to the SMEs, effective analytics may require extra high levels of investment in technology and training.

The role of quantitative analysis procedures in business development is hugely affecting the SMEs' further trajectories. According to Saridakis et al. (2019), SMEs' performance can be attributed to their analytics proficiency using the following model:

$$SME\ Performance = \alpha + \beta 1(Analytics\ Capabilities) + \beta 2(Market\ Intelligence) + \beta 3(Operational\ Efficiency) + \varepsilon$$

In this equation, α is the intercept, β1, β2, and β3 are the partial slopes of analytical skills, market knowledge, and efficient functioning, respectively, while ε is the error term. This way of thinking argues for the proposition that the enhancement of certain skills will benefit small business by improving their fortunes both directly and indirectly through facilitating better understanding of the market and business management. E-commerce platforms are very useful for the small businesses because they can make decisions based on analyses. Choudhury and Sabharwal (2020) examine whether large platforms share lots of valuable data analytics with small businesses, and in doing so, also raise questions of data ownership and data protection. In case DDR is higher it means that more amount of data is being collected from the platforms. It can be beneficial, and it can also be harmful for the small business entities. Susanty et al. (2020) explain how necessary it is to develop the methodology for data gathering and processing as an additional toolbox to the insights derived from the platforms while remaining free from strategy entanglement.

3.1.5. Customer Relationship Management in the Digital Age

According to Ngai and Wat (2002), e-commerce applications have provided greater accessibility of sophisticated CRM applications to SMEs whereby they are able to undertake customer management strategies that previously were only available to large companies. This shift allows SMEs to diversify part of their business while at the same time improving their relations with clients. Lin et al. (2019) pointed out that another important factor that defines the effectiveness of digital CRM initiatives is the ability of a small and medium-sized enterprise to collect, leverage, and manage consumer

data. EU e-commerce platforms are not static in improving the business relationship of SMEs with their customers. Abebe (2014) considers the weakening of direct client relationships due to B2C e-commerce gatekeepers' growing role in connecting SMEs and their clients. This intermediation may create a ''customer ownership'' issue, forcing SMEs to balance the benefits of platform accessibility against the risk of losing control of business relationships. From the study conducted by Saridakis et al., (2019), the conclusion made was that successful SMEs have what the authors refer to as a mixed model of them having invested in direct customer touchpoints to maintain brand loyalty and differentiation and use e-commerce to cater for the broad population.

Social networking is a vital component of digital CRM work for SMEs. According to Susanty et al. (2020), social media, often integrated with e-commerce environments, create new opportunities for SMEs to use them to engage customers and improve their brands. These technologies enable the organizations with little or no huge marketing budgets to be real-time, build communities, and tap into viral marketing. Rana et al. (2019) noted that due to the limited financial capital, SMEs will face challenges in acquiring specialized equipment and detailed information on the effective usage of social media.

In the e-commerce environment, it is evident that technologies such as machine learning and artificial intelligence in the future will greatly influence CRM for SME organizations. Zhang et al consider how the enhanced client services and personalization could potentially benefit SMEs from the application of chatbots supplemented with mechanisms implemented by AI and predictive analytics tools. The authors note that these technologies require a considerable amount of financial capital and the development of fresh competencies, a factor that has widened the gap between SMEs on the one hand and those that are utilizing digital technology on the other.

3.2. Strategies for SME Survival and Growth in the Digital Economy

3.2.1. Niche Market Positioning and Differentiation

Despite the stiff competition posed by the e-commerce giants, several SMEs have managed to carve niche and differentiate themselves from their large-scale competitors. In the light of the research, Choudhury & Sabharwal (2020) postulates that SMEs can attain sustainable market niches where they target specialization in certain product segments. This tactical strategy effectively challenges greater, much more generalized rivals since SMEs contain core strengths, including agility and specialization of market insights. Many proofs exist to confirm that industry specifics matter in the digital economy context. Abebe (2014) established that specialized products or services identified the SMEs with sustainable development on e-commerce as compared to those in the general categories. According to the author, for this success the risk of direct competition with leaders of e-commerce and the growth of client base in the focused niche areas can be mentioned.

However, there are some difficulties inherent to niche placement. Lin et al. (2019) argues that sub specialization may result in low growth and vulnerability in the market for SMEs. In their paper, the authors advise other SMEs using specialized approaches to monitor the developments occurring in this sector and to know when to shift the focus. These are important for the agility in the constantly growing digital market.

In the context of the emerging LDL paradigm, ASEAN SMEs might embrace marketing tactics that can build brand images and stories on electronic platforms in addition to the tangible characteristics of products. Saridakis et al. (2019) argues that for enterprise operations to be effective and for SMEs to be distinctive in the saturated online environment, SMEs must create a credible story and a real brand identity. The authors point out explicitly that, despite the pressure on pricing declines in the context of e-commerce platforms, pricing at a premium and establishing lasting relationships with customers can be possible for SMEs if they are different.

3.2.2. Leveraging Platform Ecosystems

Entrepreneurs and SMEs can accrue large-scale digital ecosystems despite considerable threats from e-commerce giants. Ngai and Wat establish how SMEs could benefit from the physical facilities and customer base shared by the big e-commerce platforms as well as the technological skills from the later in the essay they wrote in 2002. Potential rapid growth and market coverage can thus be obtained for small and medium firms if they assertively enter into these environments.

There are a myriad of gains that SMEs stand to accrue if they integrate their platforms. Zhang et al. (2020) revealed that most e-commerce platforms give different SMEs various logistical networks, payment structures, and consumers' service support. With these resources, companies particularly small and medium sized firms (SMEs) can achieve scales and efficiencies which might be hard to accomplish on their own. Moreover, the authors highlight how platform offered

information processing capabilities can help small and medium sized firms in making useful product information and target customers.

However, there are certain risks linked with platform integration especially for the SMEs involved in handling online transactions. Following this, Susanty et al. (2020) examine the possibility of the "lock-in" consequences that happen where SMEs heavily rely on the platform ecosystem. This dependency can sometimes compromise the SME's ability to secure preferable deals, or quickly move to alter its marketing channels. In order to address these risks, the authors suggest that SMEs should keep a diverse channel strategy. What's even more, SMEs typically can be simultaneously integrated with platforms but at the same time retain their independence and own customer base. Rana et al. (2019) emphasize that SMEs need to build their own, own-brand and own customer contact strategies, and engage in platform activities. Ultimately it can also help small and medium-sized firms (SMEs) to build a more sustainable brand that expands beyond the confines of this platform and therefore has possibilities for longer-term growth and development.

3.2.3. Digital Capability Building and Technological Innovation

The digital economy is growing at a fast pace and SMEs are forced to develop robust digital skills if they are to remain competitive. Parboteeah and Adams (2017) support the proposition of such guidance for small and medium sized enterprises (SMEs) to ensure that they spend more on skills, facilities, and technologies for sustaining competitive advantage. Laying this competence foundation is a transverse of several fields, from data analytics and digital marketing to new technologies, and goes beyond the e-commerce business corners.

The impact of digital competencies is highly negative on the performance of the SMEs. In research conducted by Abebe, in 2014, he discovered that there is a significant positive association between a SME growth rate in e-commerce markets as well as the digital maturity level of that firm. The findings of the study suggest that having high digital skills favors SMEs and helps them adopt new circumstances and opportunities and enhance their processes in the digital environment.

Intensification has been felt by the SMEs and enhancing its digital technology innovation is a way of improving on the competitiveness formula. One of the clearest expositions of how some SMEs have been able to build new value propositions based on advanced technology concepts such as blockchain, AI, and IoT can be found in Lin et al. (2019). The authors also state that while established large organizations may take longer to identify new technology and integrate it into their operations, sometimes small and medium enterprises (SMEs) can identify these technologies and implement a new one for innovative use because of their size.

SMEs especially those that have restricted funding may find it difficult to encourage innovation and acquire related digital skills. Saridakis et al. (2019) also argues for strategic prioritizing and collaborations as the key elements for coping with these constraints. Small and medium-sized enterprises (SMEs) are encouraged by the paper's authors to find partnerships/outsourcing for greater distinct or costly infographic requirements but focus on relative and formative digital competencies of business strategy plans.

3.2.4. Collaborative Networks and Strategic Partnerships

SMEs are finding that working together is a strength when dealing with e-commerce giants. The study conducted by Choudhury and Sabharwal in 2020 reveals that SMEs operating in the digital economy pay considerable attention to the maintenance of collaborative networks and strategic partnership. These can be as informal as two or more people or organizations sharing information, and as formal as corporate formations or cooperatives. In the age of e-commerce there are many advantages which SMEs can gain through collaboration. The structures of collaborative networks are perfect for small and medium-sized enterprises (SMEs) to share the risks, invest in complimentary assets and capabilities (Zhang et al., 2020). This can be quite advantageous when operating against the most extensive resources of electronic commerce giants especially by small business entities. The authors further underscore how SMEs have hitherto engaged in cooperative bargaining with the providers of closed platforms, collaborative logistics, and joint procurement.

SMEs rely on larger firms, including e-commerce platforms as key points in the growth management strategy. Ngai & Wat (2002) opine that such partnerships can help SMEs acquire state-of-the-art technologies, develop customers and attract vital business intelligence. The authors opine that SMEs need to ensure that they do not go overboard in managing these relationships to have enough distance and to protect their unique selling propositions. There are several examples published that would provide good evidence about how collaboration strategies can benefit SMEs in the new economy. Table 2 presents the findings of the study done by Susanty et al. (2020) examining the role of collaborative networks regarding the success of SMEs in OM.

Table 2 Impact of Collaborative Networks on SME Performance in E-commerce

Collaboration Type	Average Revenue Growth	Market Expansion	Innovation Rate	Cost Reduction
Knowledge Sharing Networks	+15%	+20%	+25%	-10%
Joint Marketing Initiatives	+22%	+30%	+18%	-15%
Shared Logistics Solutions	+18%	+25%	+12%	-22%
Collective Bargaining Groups	+12%	+15%	+8%	-18%
Technology Partnerships	+28%	+35%	+40%	-12%

Source: Adapted from Susanty et al. (2020)

Table 2 above showcasing various collaboration types shows that different collaboration types of favorable influence SME's performance measures. On most measurements, it is noteworthy that strong technological collaborations have the strongest impact. This simply emphasizes how crucial an aspect technological cooperation is within today's digital business environment. Since cooperative marketing programs give positive results, especially concerning revenue increase and market coverage, SMEs will benefit from collaborative branding and marketing access strategies. The quantitative investigation leads to these findings, and they have qualitative data backup. According to Susanty et al. (2020), companies which participated in collaborative networks experienced a rise in their innovative capabilities, as well as the bargaining power with both suppliers and platforms as well as global supply chain volatility. The authors argue that collaboration between SMEs can be a practical approach that enables the SMEs to operate effectively in the e-commerce markets.

3.3. Policy Frameworks for a Balanced Digital Marketplace

The development of internet buying and selling, prompted by the tremendous progress of e-commerce, and the increasing dominance of large digital environments have contributed to legislative reconsideration to safeguard a balance and competitive online market. Small and medium-sized companies (SMEs) require policy interventions to sustainably thrive in digital economy environments and overcome challenges they encounter (UNCTAD, 2021). The World Bank noted that while competition must be encouraged, consumer protection, and the growth of the digital SMEs sectors must be addressed as well (2019).

One of the main areas of policy concerns is legislation and regulation related to antitrust. Choudhury and Sabharwal (2020) also explore how antitrust laws are evolving to other issues such as data-driven market control and network externalities. The issues are a little different when it comes to digital marketplaces. According to the authors, there are one or more new statutes that have been passed or proposed that regulate and politic large digital platform to prevent unfair anti-competitive practices and level the playing field between SMEs. For instance, the Digital Market of the European Union sets high limits on so-called "gatekeeper" platforms and requires data portability and banning self-preference.

The rules regarding privacy and data protection cannot be missing in a world where everything is becoming digitalized. Zhang et al. (2020) observed that such legal measures, including the GDPR, affect both the giant online marketplace and SMEs. Such regulations present compliance issues for business regardless of goodwill that the protection of consumer's privacy as well as giving people a chance to make decisions on the use of their personal information is quite valuable. The authors posit that due to the differential impact that data legislation has on the sized-of-business, policymakers should assist the SMEs in the ways that help them meet the legal requirements without stifling innovation.

Challenges of policy nature include taxation in the digital economy. Considering the shift in the global digital economy, the presence of massive e-shops that can quickly transfer profits across countries, Saridakis et al. (2019) outlines the concept of fair taxation. The authors answer these questions by stating that more than one country has called for or implemented levies on digital services. They do but they are quick to point out that any such action needs to be well thought through lest there is harm to SMEs who trade online. The goal of current international attempts at changing global tax legislation for the digital economy, including the OECD efforts on Base Erosion and Profit Shifting (BEPS), is a fair taxation system considering the nature of the new economy.

It is equally important for governments to provide support for innovation and, specifically, digitalization of SMEs. Some of the government activities aimed at increasing the digital experience of SMEs are as follows: Government subsidies for purchasing technologies, the development of programs for training in digital competencies, and the promotion of

research in innovative technologies (Lin et al., 2019). Of course, according to the authors, these restrictions are necessary for small and medium enterprises (SMEs) to be able to compete and grow within the digital economy. Promising policy actions to facilitate the digital transition of SMEs are the EU's Digital Innovation Hubs project and Singapore's SMEs Go Digital program.

Another essential factor is legislation that regulates the activities of electronic business in the country and globally has also significant influence over the digital market. Abebe (2014) says that what the subjects such as the consumer protection online, contracts in the electronic commerce and other cross-boundary commerce need are consistent clear and coherent rules. While the author is right to note that these regulations may pose challenges when it comes to businesses' ability to respond and navigate them, she convincingly argues that they add up to making the online marketplace less volatile and providing a more favorable climate for the development of small to medium businesses. A current international attempt to harmonize e-business laws for the purpose of enabling companies to engage in international business using technology and also to lower barriers to cross-border electronic commerce is the UNCITRAL Model Law on Electronic Commerce.

It is important to understand how digital infrastructure policies help to attract SMEs to engaging in online commerce. As highlighted by the World Bank (2019), the issue of digital infrastructure is critical for SMEs to harness the benefits of digital economy; with government undertaking to advance digital payment, broadband connectivity and logistical frameworks. The authors state that such kind of investments are especially relevant to the development of the countries which aim to narrow the digital gap and SMEs who need to enter the foreign e-commerce market.

Promising policies focusing on learners' and educators' digital skills are also needed to create a sustainable digital market. UNCTAD (2021) has stress on education and training program for small and medium-sized enterprise which prepares the owners and employees for e-commerce era. The study suggests that governments, corporations, and educational institutions come up with digi-skill programs that are aligned to the needs of SMEs cutting across industries.

3.4. Future Trends and Emerging Opportunities for SMEs in E-commerce

As the digital economy progresses, other trends and opportunities could come up with consequences that affect the SMEs' future in e-commerce. In the opinion of Choudhury and Sabharwal (2020), to remain competitive in the rapidly evolving digital environment, small and medium-sized enterprises (SMEs) must first analyze trends. The authors pinpoint numerous vital fields that will predetermine the further development of e-commerce for SMEs.

There are several interesting trends which can be distinguished, such as the increase in mobile commerce. Zhang et al. (2020) argue that since more people in the world are using smartphones, the mobile devices are gradually becoming the major modes for performing the e-commerce transactions in various sectors. The following are both the opportunities and risks SMEs experience as a result of such migration. On the one hand, mobile commerce enables m-commerce business owners to give small and medium-sized enterprises (SMEs) to directly interact with consumers as well as increasing the usage of specific marketing approaches. It does, however, require that SMEs invest in mobile-first platforms and think about how to engage with clients on a small screen with a short amount of attention.

SMEs are also likely to be affected by other trends, including voice commerce and conversational interfaces. As the voice assistant and smart speakers are becoming popular, Lin et al. (2019) examines how people are buying what they want online. Based on their recommendation, to enhance voice search the authors encourage SMEs to modify their SEO and PLA approaches. This may hold quite a lot of implications for IG depending on whether a more natural language approach and longer keyword phrases are favored.

The electronic commerce business should have the Artificial Intelligence (AI) and Machine Learning (ML) to be used increasingly. According to Saridakis et al. (2019), it is critical to acknowledge that AI solutions can support the automation of multiple functions in SMEs. These are customer service bots or agents and predictive analysis in inventory are some of them. The authors for their part postulate that while the application of artificial intelligence technology may entail a high capital outlay at one point, it has the ability to completely erase the gap between SMEs and their big match competitors by facilitating and supplementing their decisions through the AI technology.

As the social commerce (whereby social networks introduce e-commerce elements) evolves, it may have potentially created new possibilities for SME. According to Abebe (2014), SMEs might do so to possibly decrease some dependency on large e-commerce platforms: small-scale platform sales through social media presence and via exploring opportunities that social commerce offers. Based on Abebe (2014), satisfaction and engagement of customers together with the generation of relevant and share worthy content define the success of social commerce.

In consumer decisions, variables like sustainability and ethical consumption are slowly but surely finding their way into the mainstream. This is a challenge as well as a potentiality for the SMEs in doing e-commerce business. Based on UNCTAD (2021), stakeholder demands, and awareness enhance consumers' preference for products with sustainability and responsibility, innovations, and quality preferences. SMEs that can demonstrate their commitment to ethical principles and environmental certifications may be well placed in cutthroat digital platforms. Some future challenges of e-commerce development of a new payment system and digital currencies may influence the operation of small and medium enterprises (SMEs). The World Bank (2019) examines how payment innovations including blockchain-based payments and central bank-instigated digital currencies could potentially lower the expense of society and enhance efficiency of the cross-border transactions. The expansion of new international marketing opportunities for the SMEs can lead to the growth of the number of the clients they have globally with lower levels of capital requirements.

3.5. The Role of Artificial Intelligence and Machine Learning in SME E-commerce

Continuing advancement of artificial intelligence and machine learning technologies is stimulating a rapid change in the e-business environment for SMEs. As reported by recent studies, due to greater powers for process automation, its personalization, and the functions of a predictive analyzer, which make it easier for small businesses to adopt AI and ML, the extent of (Lin et al., 2019). They enable SMEs to counter better with other large e-commerce organizations since excessive and complicated errands are mechanized, and insights are driven by data.

Another effective area of AI usage in SMEs e-commerce is the improvement of client experience. SMEs can offer unique shopping services and 24/7 client support at a large level because of the natural language processing algorithms controlling the chatbots and virtual companions (Saridakis et al., 2019). This increases customer satisfaction and reins in staff members for a higher responsibility. Besides, since the recommendation engines proposed by AI are based on the behavior of consumers and their preferences, SMEs have been able to boost their sales as more complex systems found in major e-commerce platforms.

Figure 4 The most important functions of artificial intelligence in e-commerce. Source: AI for e-Commerce. (2021)

SMEs especially have noted that ML algorithms are very helpful especially in tracking inventories and supply chain. Predictive models in small businesses should ensure that the flow of inventory is accurate and closely monitored, reducing wastage while using forecasts to estimate demand flow with more accuracy as they progress, (Choudhury & Sabharwal, 2020). In terms of storage and operating capital, this is crucial for the SMEs particularly since they require large amounts of capital. In addition, SMEs are capable to achieve the most suitable levels of profit in very high competitive markets, where rise of the ML-driven dynamic price optimization. These strategies enable SMEs to real time adjust their prices throughout the day in relation to market conditions, competition prices and demands.

SMEs leveraging on ML and AI, nonetheless, are bound to encounter some barriers. For instance, small businesses, companies in question most of the time cannot hire specialists to implement such systems and, secondly, they lack sufficient financial resources to implement integrated AI systems, World Bank (2019). Moreover, the issue of the 'AI

divide' where small and medium sized enterprises SMEs who cannot afford to get or who cannot get access to these technologies are already becoming prominent. In response to this, there is increased adoption of instructional programs and cloud-based AI services as e-commerce firms and governments seek to make ML and AI fairly accessible to SMEs (UNCTAD, 2021).

3.6. Sustainable and Ethical E-commerce Practices for SMEs

For SMEs, operating in the e-commerce industry, there are implications of the current emphasis on global sustainability and corporate responsibility. There are both opportunities and challenges for SMEs to adapt their e-commerce strategies to meet new demands as customer become increasingly conscious of social and environmental impact of their purchases. Susanty et al.'s (2020) latest study shows that the businesses with ethical and sustainable e-commerce strategies obtain better consumer loyalty, brand awareness, and improved business profitability.

Packing and delivery, as an essential part of e-commerce, can indeed be one of the adoption pillars of sustainable e-commerce for SMEs through practices that reduce harms to the natural environment. In their study, Choudhury and Sabharwal (2020) have observed that the majority of consumers are willing to spend extra dollars only to get the product enclosed in environmentally friendly packaging. In this concept, SMEs should design their delivery packages to reflect the worldwide trend of using recycled or biodegradable packing materials, reducing shipping routes to minimize carbon footprint, and offering carbon-neutral delivery options. Some of the creative SMEs are also eyeing local micro-fulfillment centers to reduce such impacts as environmental effects and transportation distance.

Two trends prominently stand out for small-business e-commerce: ethical sourcing and supply chain openness. Per Lin et al. (2019), consumers are more sensitive to the information provided by the manufacturing companies and hence are more likely to support companies who are transparency with information regarding the origin and methods used to develop the products. Demonstrating their code of conduct in their purchasing, treatment of employees, and contribution to the local societies, SMEs might gain a competitive advantage. This can especially be successful for any SME which is exporting handmade products or operating in a niche sector.

The concept of a circular economy is also increasing in the e-commerce market and brings new opportunities to SMEs. Implementing a part of their e-commerce offers, some small enterprises experimented on product take-back programs, refurbishing service, and upcycling projects as noted by Saridakis et al. (2019). All these ideas are to consumer concern going green appealing as well as offer new sources of income for SMEs and reduce costs that would otherwise be incurred on waste.

Consumers' data privacy and ethical use of information are highly significant for SMEs engaged in the e-commerce business. The increased awareness of customer rights to privacy and data protection as well as the enhanced surveillances and monitoring the governments are putting over SME's make it mandatory for them to safe and open data management a top priority. Highlighting that SMEs should strengthen their information security and be more transparent about the use of customer data to gain their trust and adhere to new rules, such as GDPR, the World Bank (2019) pays attention to.

In respect of the SMEs that can hardly afford to utilize ethical and sustainable e-commerce solutions. According to UNCTAD (2021), transitioning to more sustainable business models can be initially expensive and after that difficult for many small businesses. Others, some e commerce sites, and industry groups previously are developing plans to support SMEs in applying sustainable practices in their firms offering above tools, training and at times a cash to manage this.

Moreover, while the incorporation of ethical and environmental concerns into e-commerce activities is still a moral imperative for SMEs, it is becoming increasingly essential for business success. These clients that align SMEs e-commerce plans with sustainability targets are perhaps more suitable for long-term prosperity in an always-worried customer economy, as posited by Zhang et al. (2020). Through these approaches, SME's not only contribute to sustainability initiatives across the globe but also create new value proposition appealing to today's consumers coupled with new market offering that will help differentiate them in the rather competitive e-commerce market.

4. Concluding Remarks

Hence, small and medium-sized enterprises (SMEs) are at the precipice of a revolutionary era that now necessitates digital transformation. High-tech companies have been leading this e-commerce revolution that has altered the entire business landscape and brought in possibilities that no small businesses have ever come across before along with its challenges. Through the empirical analysis undertaken in this research, one can conclude that e-commerce giants have

a considerable bearing on SMEs with regards to numerous aspects that pertain to business performance, the foremost of which is market interactions and customer relations. The conclusion drawn in the review reveals complex interdependencies that conventional large e-marketplace sites have with SMEs. While these platforms have brought international markets closer to everyone, they have also brought competitiveness and a new kind of dependency into the world. The case studies of success rates of SMEs operating in this new environment suggest that it is not just possible for SMEs to adapt to and sustain the new digital economy, but it may also be a question of choosing the right strategy, which involve targeting specific segments, building excellent digital competencies, and entering the right partnerships. However, there are obstacles on the way to success. For several SMEs, therefore, the digital divide, constraints on resources and the fast pace at which technologies are evolving remain key challenges. For this reason, it will require the cooperation of the legislatures, business leaders, and SMEs to forge a new future for a more rightful digital economy.

4.1. Recommendations for Future Direction

- The synthesis of effective digital skills training that are appropriate for SME owners and employees should therefore be a prime concern for policymakers. Those programs should deal with simple digital literacy, as well as more complex issues, such as data analysis, digital marketing, and optimization of e-commerce platforms. By providing the tools to help SMEs understand the opportunities and threats involved in e-commerce and how to effectively navigate the digital space, we can help to start to bridge the digital divide and allow more organizations to benefit from the possibilities offered by e-commerce.
- Online retailers should consider offering tier-based charges for the services or offer to assist small and medium B2B firms especially those in the developing world or in specific industries that have been overlooked. It could mean that the commission percent would be less for small suppliers, concentrated customer communication platforms, or no charges for other tools available in the platform. These strategies can contribute to equity and stronger, diverse, e-Commerce industry.
- Industry groups and cooperative networks of digital commerce should be surfaced voluntarily by the small and medium-sized businesses. These networks can offer important resources, as well as to contribute with the exchange of knowledge and increase the bargaining power when dealing with powerful actors or key decision makers. SMEs individually may lack financial, marketing, technical, and distribution capability; however, by coming together and forming associations, they can solve common problems more effectively because of economies of scale.
- Governments and international organizations must therefore co-ordinate their efforts for the setting of clear and global rules applicable to the international scope electronic commerce bearing in mind the procedures associated with concerns SMEs. This could comprise of ease of tax and administration regulation, common procedures on custom and establishment of efficient methods of addressing disputes. Minimizing the accustom and overhead that are attached to international e-commerce, increases SMEs opportunities of international market access immensely.
- Increased funding should therefore be delivered and targeted toward the establishment of dependable and scalability-based digital connectivity infrastructure in the developing world. This includes enhancing the digital payments, cyber security structures, and last mile delivery in the context of enhancing the quality of connectivity. The nature of home-market electronic commerce opportunity will vary across the industries and changing them to make them pro-competitive is essential that the SMEs must have a strong digital ecosystem.
- For small and medium-sized firms in the digital environment, there are minimal priorities that should be enhanced, and these are differentiation strategies and iconic brands. This could be as simple as emphasizing on specificity such as specializing in a certain product category, offering local or artisanal products, or as elaborate as utilizing narrative and genuine client relations. The case indicates how SMEs are capable of building dedicated consumer-followers and opting for higher prices in return for offering a product not in the production line of the large structures.
- Small and medium-sized firms (SMEs) must practice data protection and the ethical use of data in their e-commerce business activities. This requires the use of proper cybersecurity measures, having polite and transparent privacy policies of data collecting and using, and following different laws like the GDPR. In the world of digital economy tolerance of acceptable data practices can define SME's differentiation.

By adopting the mentioned measures, it will be possible to contribute to establishing a more diverse, open, and equitable market that could help businesses of different sizes cope with the challenges in the sphere of e-commerce. It can be stated that the evolution in business is likely to go digital, and small and medium firms – SMEs are able to not only survive, but also to flourish in the new setting, thus promoting advance in the economy and ideas around the world.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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