THE IMPACT OF COVID-19 ON THE ECONOMY AND SUSTAINABLE E-COMMERCE

NICODEMUS M. KITUKUTHA, LÁSZLÓ VASA, JUDIT OLÁH

ABSTRACT

This study aims to examine the impact of COVID-19 and sustainable e-commerce in Hungary and Kenya. COVID-19 has devastated the global economy, resulting in financial and job losses. Routine changes in spending have moved the focus from non-essential to essential items, due to the impact of COVID-19, the associated economic meltdown, and the deterioration of people's physical and mental health. However, e-commerce can be a better option to stop the spread of COVID-19 due to its real benefits and usefulness in solving the challenges faced. The methodology used in this paper is the collection of primary data from an online survey questionnaire, and secondary data from several databases,e.g.,the World Health Organisation (WHO) and Johns Hopkins Centre websites. The results show the negative impact of COVID-19 on society and the economy, as well as the positive and significant effects ofthe growth of e-commerce during COVID-19, where most of the goods being purchased are medical supplies: masks, medicines, and food. This has been made possibleby the rise of e-commerce platforms as a link in sustainable e-commerce after the significant disruption to the worldwide supply chain due to total lockdown. E-commerce has shown growth during the COVID-19 pandemic period as a sustainable platform. In conclusion, this study proposes policies that support e-commerce in developing countries during and after COVID-19. Furthermore, theoretical, and managerial implications are proposed in the study. It is high time to warn businesses to adopt information and communications technology (ICT) to flourish and thrive during times of financial and economic hardship, such as the use of e-commerce with the right policies enacted to support sustainable e-commerce.

KEY WORDS

COVID-19, impact, economy, society, sustainability e-commerce, business

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Introduction

The impact of COVID-19 has led to an economic meltdown and financial constraints affecting both businesses and individuals in informal and formal sectors. The spread of the coronavirus (COVID-19) has fuelled the growth of e-commerce or online shopping (Kumar et al., 2020; Yang and Ren, 2020). The impact of COVID-19 has led to a global economic crisis (Ye et al., 2020), due in no small part to the loss of revenue and job sarising from total lockdowns based on World Health Organisation (WHO) guidelines to contain and stop the further spread of COVID-19 (Ma et al., 2020). Numerous studies show the negative impacts of COVID-19 (e.g. Chen and

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Zhao, 2020; Haleem et al., 2020; Lynch et al., 2020; Bruinen de Bruin et al., 2020; Zarrintan, 2020; Solesvik, 2019; Dias et al., 2020; Pardal et al., 2020; Marona and Tomal, 2020; Megits et al., 2020). These studies relate to different aspects. The emergence and spread of coronaviruses have fuelled the growth of e-commerce as a platform to conduct businesses between retailers and consumers or business-to-business (Karácsony et al., 2020; Myovella et al., 2020; Wang et al., 2020). E-commerce or Internet shopping is where customers log in to a computer network or wireless devices connected to the Internet in order to search for online retailers or websites; make orders according to their requirements for goods or services (Tsuji, 2019); and complete the transaction through an online payment without physically meeting the seller and the buyer. Alternatively, one can pay cash on delivery (Jaller and Pahwa, 2020). Ordinary bricks-and-mortar retail stores are currently facing challenges due to the impact of COVID-19 and unsustainable supply chain disruption.

For the last three decades, the Internet has evolved exponentially in both developed and developing countries. The existence of the Internet has impacted all facets of life and business. The invention of the Internethas led to information sharing, as well as the era of desktop computers, personal computers, laptops, iPads, and smartphones. World Wide Web registration has facilitated business transactions via intranet and extranet in the form of WANs and LANs. Transactions resulting in billions of dollars are done every yearvia e-commerce, which is a significant source of a country's GDP. Currently, e-commerce provides real-time service delivery. Through a logistics service provider (LSP), customers can track their orders from shipment to delivery (Asch et al., 2020).

The Internetand e-commerce have brought a new paradigm shift, not only to the communications industry but to businesses as well. No wonder then that the significance of e-commerce in the global economy is rising (Grochal-Brejdak and Szymura-Tyc, 2018). This development has brought stiff competition in pricing and cost reduction. Retailers and consumers can buy and sell from anywhere globally, ifthey can access the Internet, through e-commerce or online shopping platforms. The success of the Internet has brought about wealth creation and bridged the socio-economic status gap. Discussions have been held among nations on how countries can tap into the opportunities provided by the Internet to empower their communities financially, socially, and economically. The Internet has the potential to revive struggling economies and enable them to better compete with more developed nations.

The impact of COVID-19 has resulted in an online shopping boom as people adhere to WHO safety measures to stop the further spread of the coronavirus. Further research has been conducted on e-commerce, customer satisfaction, e-shopping, and changing shopping trends. However, no research has yet been done on the impact of COVID-19 on the economy and societal changes regarding online shopping. E-commerce is a new, developing area, and it is of great importance to the economy, governments, practitioners, academicians, and society; hence leading to our investigation and contributing to the gap which our study aims to fill. Therefore, the authors are motivated to investigate the impact of COVID-19 and sustainablee-commerce as a solution to contain the spread of COVID-19 while observing the WHO guidelines, staying home, and ordering online, and utilising supply chain delivery without the two parties meeting physically.

This study investigates the questions below to understand how e-commerce can be a bette rsolution to prevent the spread of COVID-19. Our paper also examines the impact of COVID-19 on the economy and society. This research seeks to answer the research questions below that form the theoretical and conceptual background to our paper.

1. Why could e-commerce be the best option to stop the spread of COVID-19?
2. How long will the current supply chain endure before collapsing?
3. Which is the most affected logistics and labour workforce?
4. What is the impact of the COVID-19 pandemic on the economy, society, and businesses?

1. Literature review

The Internet is an instrument and a set of technologies that has been very useful to business. The Internet revolution began in the early 1960s and continues to evolve to accommodate the current innovations and technologies that support infrastructure for better use. With the development of the Internet, human rights advocates and society have been empowered and can air information without prejudice via social media, the Internet, and TV (Curran et al., 2013). In addition, the Internet revolution has brought about democracy and freedom of speech. According to a study by Gomes (2019), the world should evaluate the readiness of contemporary society, business, and the economy to master the art of advanced technologies such as e-commerce and their functionalities for future business sustainability and the digital economy (Gomes, 2019). In similar research, the authors discussed the possibility of working from home, and the business sector should adopt information technology for business success (Yusoff et al., 2019).

Furthermore, the supply chain and logistics are major components in the success of e-commerce. Otherwise, consumers would have no access to goods and services if the retailers lacked the means by which to transport merchandise (Widyarto et al., 2019). A study by Solesvik (2019) stated the importance of information technology (IT), and e-commerce companies in Kenya contribute 5% of the total GDP. Therefore, investment in the infrastructure of hardware and software is a crucial component in GDP growth, together with good policies that support and empower the growth of e-commerce, as well as the right IT skills, personnel, entrepreneurial competence, e-commerce policies, and regulation for businesses. To be sustainable, businesses must incorporate all the three bottom-line dimensions – environmental, social, and economic – by taking advantage of the possible trade-offs available in the e-commerce sector to thrive and flourish in the longterm (Oláh et al., 2018).

According to global Internet statistics, more than 52% of the world's population has access to the Internet (acc. to Nadanyiova et al., 2020, it is up to 4.2 billion people), with 58% penetration, and 85% of those use it for online shopping and to search for information. Therefore, the Internet revolution and IT development have fuelled the growth and use of e-commerce worldwide. Especially during COVID-19, e-commerce has grown to fulfil its full potential. An overview of global e-commerce activity reveals that the total number of users amounts to 4.57 billion, or 59% of the total population, with an increase of +7.1% or about 301 million people, spending approximately six hours a day on online shopping. 81% search for a product or a service to buy online, while 90% have visited an online retail website. 66% use a mobile app to do online shopping, and 74% buy a product or a service online every week.

51% use mobile commerce (M-commerce) and social commerce (S-commerce). Table 1 shows global Internet penetration based on population estimates.

Table 1. GlobalInternet penetration and usage based on population estimates

Internet penetration and usage estimates – March 2021						
Regions	Population (Est.)	Population %	Internet users 2020	Internet penetration%	Population growth rate %	Internet growth rate %
Africa	1,340,598,447	17.2%	526,374,930	39.3%	11,559%	11.5%
Asia	4,294,516,659	55.1%	2,300,469,859	53.6%	1,913%	50.3%
Europe	834,995,197	10.7%	727,814,272	87.2%	592%	15.9%
L. America	658,345,826	8.5%	453,702,292	68.9%	2,411%	10.0%
Africa & ME	260,991,690	3.9%	180,498,292	69.2%	5,395%	3.9%
N. America	368,869,647	4.7%	348,908,868	94.6%	222%	7.6%
Australia	42,690,838	0.5%	28,775,373	67.4%	277%	0.6%
Global total	7,796,615,710	100.0%	4,574,150,134	58.7%	1,167%	100%

Source: Own elaboration based on World Internet Statistics, 2021.

The Internet depicts its importance to the world today through business. The COVID-19 pandemic has brought almost everything to a standstill. Despite the advantages of the Internet and the use of e-commerce platforms, businesses have suffered huge losses. Furthermore, supply chain disruption left people with noessential services, food, or medicines. Significant negative impacts are depicted in almost every sector. Firstly, the economy crashed, for example, a sample of countries for which travel bans were in force, the United States, Hungary, and Kenya, reveals that the travel industry is estimated to lose over $600 billion, $89.9 million, and $87.9 million in those countries respectively in 2021 due to the impact of COVID-19. The most significant expenditure is on food since most people are spending much more time at home because of the government lockdown and restrictionson the movement of goods and people. Second in this category is medication, as with the spread of COVID-19, there is a high need for protection equipment, e.g., personal protective equipment for medical practitioners, masks, gloves, and medicines.

Similarly, the transport and tourism sectors have suffered a massive blow due to movement restrictions. As a result of COVID-19, almost no recreation and amusement facilities were in operation worldwide. Furthermore, retail and e-commerce were hit due to the disruption and breakdown of the supply chain. However, by providing transporters with pass documents and working together with the e-commerce industry, e-vendors collaborated to ensure goods and services reached all destinations. The ban also affected small and medium enterprises (SMEs) adversely. Businesses,especially in Kenya, had taken loans to support their operations. Likewise, the loss of employment both in informal and formal sectors can be seen in the impact of COVID-19 losses on different sectors and countries in U.S. dollars ($), as illustrated in Table 2.

Table 2. Impact of COVID-19 losses on sectors and countries in U.S. dollars($)

Sectors	U.S.	Hungary	Kenya
Food services	128	93.3	83.9
Medication	112	81.6	73.4
Air transport	97	70.7	63.6
Other transportation	78	56.8	51.2
Recreation and amusement	54	39.3	35.4
Retail and E-commerce	49	35.7	32.1
Employment	40	29.2	26.2
SMEs	45	31.8	28.5
Total	603	89.6	87.9

Source: Own elaboration based on World Internet Statistics, 2021.

Why could e-commerce be the best option to contain the further spread of COVID-19?

E-commerce has numerous benefits, as illustrated in many studies, such as convenient online shopping at any time of day, saving time, comparing prices on different websites before completing actual purchases, and receivingthe delivery at one's doorstep. Studies have shown that Internet access has increased in SMEs via different devices such as computers, laptops, iPads, and smartphones,and fuelled the growth of e-commerce on the local and international markets (Ndayizigamiye and McArthur, 2014). The restrictions on travel to combat the spread of COVID-19 have given e-commerce a good platform to thrive due to its many benefits such as convenient online shopping (Baskaran, 2019; Fazal et al., 2020). This drives maximum satisfaction for online consumers. It is worth mentioning the convenience of online payment systems through secure and private browsers that guarantee the security of customer data (Brundage et al., 2015; Brusch and Rappel, 2020; Duarte et al., 2018; Xi et al., 2020; Xu and Duan 2020; Yu et al., 2020).

E-commerce is also a source of employment that enables many entrepreneurs to earn a daily income as people surf the Internet (Chen et al., 2020). As previous studies indicate, e-commerce has reduced stress and provided job opportunities for young people (Lindblom et al., 2020). Consumers adopt online shopping to save resources (Zatonatska and Fedirko, 2019), including money, time, and energy that can be used for the economicdevelopment of a country (Balsmeier and Woerter, 2019). Online customers take less time to search for products and compare prices with the click of a button instead of visiting physical shops (Collinson et al., 2020). E-retailing or e-commerce is the best solution, especially when customersare infected with the virus, to avoid stigmatisation and the future spread of the virus (Wagner et al., 2020).

The development of IT has empowered society and consumers to engage in e-commerce. Mobile phone penetration and the associated low cost have enabled most young people to access the Internet and online shopping. Mobile phones contribute to the growth of e-commerce worldwide at a rate of 80%; most online shopping has been done via phones (Chopdar and Balakrishnan, 2020; Gyenge et al. 2021). Moreover, online companies keep a database of every customer who visits their website, enabling firms to monitor customer preferences and tastes. As a result, retailers send promotion notifications

to consumers via email. Special offers and promotions help to lure most potential customers, turning them into actual buyers (Kang et al., 2020). These trends convert customers to online shopping very easily (Martí et al., 2020).

How isthe supply chain disrupted? The spread of COVID-19 has disrupted every country's transport and supply chain due to the total ban and movement restrictions. Most of those affected are supply chains for essential goods such as food and medical supplies. The cross-border restrictions and lockdowns in major cities have complicated and worsened the situation. Most suppliers held goods in their warehouses, creating shortages and sending society into panic mode. Therefore, consumers are forced to buy as much as possible to stock up at home (Chakraborty and Maity, 2020). The high resultant demand for goods with limited availability caused prices to escalate dueto the impact of COVID-19. The most common items bought online are masks, painkillers, vitamin C templets, aprons, sanitisers, and washing soaps for individual consumption. In contrast, hospitals exhibit a high level of demand for PPEs to protect and safeguard against the further spread of COVID-19. However, e-commerce has come to play a significant role. Nevertheless, with the restrictions on movement, supply chain disruption is a significant challenge to logistics and supply chains.

Who are the most affected during COVID-19? Logistics transporters, health workers, and the labour workforce are most affected. The outbreak of COVID-19 was declared by the World Health Organisation as a threat not only to public health but also to economic and business sectors. This means that highly populated countries are at the risk of the increasingly rapid spread of COVID-19. Similarly, businesses are closed, and employeeslaid off, with the resulting lack of income a significant detriment to personal and business finances.In turn, this has led to physical and mental health problems (Maffioli, 2020). Health workers and doctors workedin constrained circumstances in isolated centresforlong hours. In the case of Kenya, most Kenyans must work every day to be able to put food on the table. Also, they are used to active social lives, meeting in clubs and hotels to eat, drink and socialise. A higher number of cases of COVID-19 is the result. The same trend can be seen in Hungary as well.

Similarly, in other studies, the authors experimented with a prototype study of employee behaviour in organisations. The results showed that employees working in harmony create efficiency and eliminate waste by applying e-commerce (Richter et al., 2020). In another study, e-commerce was included in the perspective of total quality service: e-commerce leads to customer satisfaction with online shopping (Haleem et al., 2020). E-vendors take advantage of online shopping by increasing their customer base on international and local markets alike. They enjoy a large customer base andsell large quantities of goods at a low price, thus earning decent profits.

Where will COVID-19 leave the economy? COVID-19 has crippled the economy, resulting in negative economic, social, health, and business impacts. As to this study, enormous losses are experienced in developing countries, as well as developed nations. Different sectors are affected, such as aviation, tourism, retail sales, supply chains, and business industries. There is a high correlation between the movement of people and goods and the economic growth of countries and GDP. One example would be the situation of a total lockdown and no flights, resulting inmassive job losses, no sales of goods and services at airports, and disruption of the

supply chain. During the period of COVID-19, most production firms shut down, and 90% of workers were sent home with no pay, thus affectingfamilies' income and the level of household consumption as well as private and public consumption. Furthermore, the education sector was affected since most schools were shut down. Exchange programmes and scholarships were not spared either, especially in Europe, North and South America, where there is a high rate of infections and spread of COVID-19.

To illustrate the impact of COVID-19 on different sectors of the economy, this study drew data from different sectors. In terms of the loss of revenue, the tourism industry lost about $100 billion, the retail sales growth rate went down from 6.8% to 4.5%, the consumption rate – both public and private – in foodstuff declined from 6.2% to 3.8%, but medical uptake grew at a rate of 5.5% to 6.9%. Supply chains and shipments of goods were disrupted, and the most affected areas were electronics, automotive and technological companies. Oil prices have declined significantly since industries were shut down. The use of oil decreased approximately 45% based on statistics pertaining to oil produced and sold. This has brought the cause-effect scenario to other continents such as Africa, America, and Europe. Only e-commerce has an upward growth rate of 8.5% from 5.4% because of restrictions and the total banon movement. It is projected that COVID-19 effects might have negative spill-over effects on the economic sector for 2021 and 2022. The GDP of most countries will continue to decline, and others might not recover for the next several years to come.

Investment in real estate is not spared either. People concentrate on buying food and medical supplies, with personal and home care to ensure hygiene. Banks are suffering the same fate; no one is interested either in loans or investment. Bank loan rates are decreasing. Moreover, bankers must develop proper loan repayments by increasing the period of payment and lowering the interest rates. Governments will be required to inject funds into businesses. Otherwise, they may not recover easily, or might take a long time to do so, whichcould have a strongly negative effect on the country's GDP and economic growth rate.Likewise, governments should relax tax obligations, as well as social security payments for companies and individuals. The impact of COVID-19 on society and the economy has resulted in a research gap which points to the motivation for undertaking this research.

2. Materials and methods

The study used a self-fulfilling questionnaire sent to respondents in Hungary and Kenya between January and March 2020 to collect views on the impact on economic activity, society, business,and sustainable e-commerce during the COVID-19 pandemic with a sample size of 500 and a total population of 3000 respondents in each country. The authors provided an error margin of 5% at a 95% confidence interval level. The study used convenience and purposive sampling techniques to disperse the survey. A total of 1000 respondents formed primary data from the questionnaire in both countries. In addition, secondary dataoriginated fromthe World Health Organisation (WHO) and Johns Hopkins centre websites. Data was analysed using mathematical techniques and presented by means of figures, tables, and percentages to indicate the importance of the measurement (Guliyev, 2020).

3. Research results

The breakdown of all respondents who participated in the survey is as follows: 50.9% female and 49.1% male, with 35% aged 18-24, 32% in the 25-34 years age

bracket, and 33% aged 35 years and above, meaningmost participants in the survey belonged to the 'millennial' generation who more willingly use e-commerce and online shopping when compared to older generations. Entrepreneurs aged above 35 years are involved in providing goods and services on e-commerce platforms and undertaking online shopping. Most of the respondents indicated their involvement in s-commerce and m-commerce daily.

The quantitative data were analysed from the questionnaire responses received.The results show an increase in online shopping since the outbreak of COVID-19 in December 2020 due to restrictions and government bans on the movement of people and goods as directed by World Health Organisation (WHO) guidelines to further curb the spread of COVID-19. The results show an 80% increase in online shopping in the last month and the last three months collectively. This indicates that most customers opted for online shopping or e-commerce due to government-mandated restrictions on movement and total lockdowns. Indeed, only 10% of respondents last shopped online up to six months ago, and 5% of respondents shopped online less than one year ago or more than one year ago. Table 3 below shows online purchases during the COVID-19 period over timeframes ranging from one month to one year.

Table 3. Online purchases during the COVID-19 period

Period	References	%
Last month	Zambrano et al., 2020	45
Last 3 months	Collinson et al., 2020; Laguna et al., 2020	35
Last 6 months	Clements, 2020; Laguna et al., 2020; Pellegrini et al., 2020	10
Less than 1 year	Clements, 2020; Laguna et al., 2020; Pellegrini et al., 2020	5
More than 1 year	Huang and Zhao, 2020; Kaufman et al., 2020; Di et al., 2020	5

Source: Own elaboration, 2021.

E-commerce was not utilised at a high rate prior to the pandemic, but the stringent measures taken led to a substantial increase in online purchasing of almost everything to avoid becoming infected and to avoid furthering the spread of COVID-19. Furthermore, the Internet has become much cheaper, and most people can now afford it. Similarly, the millennial generation can not survive without online shopping; it has become an intrinsic part of their everyday lives. Therefore, this is where the world is heading: towards the Internet of Things. Almost everything is ordered through e-commerce platforms.

With the penetration of and access to the Internet, people access the Internet for various reasons, so the authors asked respondents how frequently they use the Internet and for what reasons. Most respondents indicated they often usedthe Internet for online shopping, job searching, official communication, academic research, and social media, with figures of 96%, 95%, 86% 75% and 60%, respectively. In addition, Internet or online shopping had the highest percentage in all three categories of frequency – once, occasionally, and everytime. Table 4showsthe reasons why respondents use the Internet.

Table 4. Reasons why respondents use the Internet

Reasons	References	Once	Occasionally	Every time
Internet shopping	Roy et al., 2020; Bauernschuster, et al., 2014;Feldm et al., 2002;Reimers, et al., 2016	25%	50%	96%
Surfing; job search	Chiu et al., 2007; Flaxman et al., 2020; White et al., 2008	26%	56%	95%
Communication; official email	Chiu et al., 2007; Edwards and Roy, 2017; Reimers et al., 2016	30%	45%	86%
Academic Research	Andrus et al., 2020; Kaya and Bicen, 2016; Vithayathil et al., 2020	40%	55%	75%
Social media; FB, WhatsApp	Chiou and Ting, 2011; Farag et al., 2007; Rotem et al., 2007	45%	65%	60%

Source: Own elaboration, 2021.

The time spent and the frequency of browsing on social media are also high. Respondents indicated they mainly rely on customers' reviews of products purchased online before making online shopping decisions. This is because they have more trust in reviews from friends and family members who use social media to give feedback to e-commerce companies. In addition, young people are addicted to their phones, chatting with friends, family, and colleagues. Apart from online shopping, other major reasons for Internet usage were job searching and academic research, as listed by 95% and 75% of respondents, respectively.

The authors asked respondents to what extent they agreed or disagreed with the reasons for online shopping on various e-commerce platforms. The choices were: strongly disagree, disagree, neutral, agree, and strongly agree. The statements contained several advantages for online shoppingover brick-and-mortar stores, where customers must drive for long hours, potentially get stuck in traffic jams, waste time looking for a parking space, and queue for payment. The various advantages of e-commerce were as follows: savings of time and money, a more relaxed shopping experience, more convenience, and more efficiency. The results demonstrate that most respondents would prefer online shopping due to its convenience, money- and time-saving benefits, due to it being a more relaxed experience and providing an efficient shopping experience, as listed by 70%, 68%, 65%, 62%, and 60% of respondents, respectively. Table 5 illustrates the reasons for the high levels of participation in online shopping given by respondents.

Table 5. The reasons for online shopping given by respondents

Reasons	References	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Saves time	Al-Dmour et al., 2017; Fazal et al., 2020; Kim et al., 2013	5%	15%	Nil	45%	65%
Saves money	Chiou and Ting 2011; To et al., 2007; Wei, Lee et al. 2018	8%	19%	1%	50%	68%
More relaxed shopping	Al-Debei et al., 2015; Liu and Forsythe 2010; Shin et al. 2013	10%	16%	Nil	51%	62%
More convenient shopping	Close et al. 2010; Crespo et al. 2009; Jiang et al., 2013	3%	8%	2%	62%	70%
More efficient shopping	Doolin et al. 2005; Kim et al., 2012; Maindardes et al. 2020	6%	11%	Nil	60%	60%

Source: Own elaboration, 2021.

The above statistics can be attributed to the human factor, as people would like to do things at a convenient time, place, and level of comfort. Increased Internet access via different devices at low cost, coupled with good policies supporting sustainable e-commerce platforms,assist in this activity. Saving time and money, asmentioned by 65% and 68% of respondents respectively, is of secondary importance, as the customer would not like to waste time looking for parking and paying the parking fees and, even worse, queuing in long lines to pay for the goods at the cashier's desk. More convenient and efficient shopping was listed by 60% and 62% of respondents respectively – consumers shopping online in their offices or at home at their leisure are equally important.

Additionally, the authors sought to ask respondents which products were most frequently purchased online. The results show that during the COVID-19 pandemic, most respondents made use of the limited financial resources at their disposal to purchase essentials rather than non-essential items, in the following order: medicine, food, groceries, home care, and beverages. The percentages for these categories were very similar across continents, as the impact of COVID-19 was universally and equally felt in almost every country at the same rate. Table 6 below illustrates items purchased online and categorised by continent from January to March 2021.

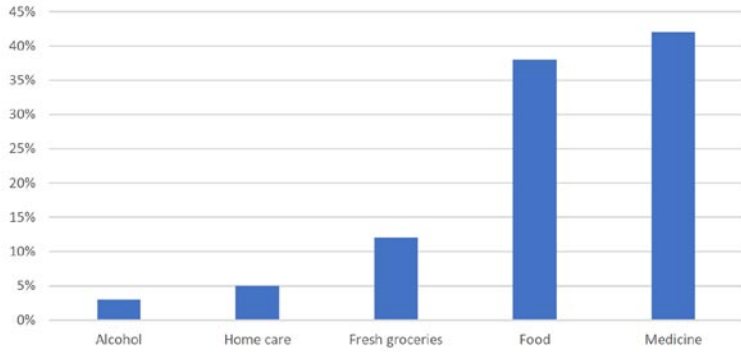
Table 6. Online items purchased and categorised by continent, January-March 2021

Asia	%	North America	%
Medicine	43	Medicine	40
Food	29	Food	25
Fresh groceries	15	Fresh groceries	10
Home care	13	Home care	20
Beverages	8	Beverages	10
Africa & Middle East	**%**	**Latin America**	**%**
Medicine	50	Medicine	30
Food	30	Food	10
Fresh groceries	10	Fresh groceries	10
Home care	5	Home care	25
Beverages	5	Beverages	25
Eastern Europe	**%**	**Western Europe**	**%**
Medicine	40	Medicine	45
Food	20	Food	30
Fresh groceries	15	Fresh groceries	20
Home care	10	Home care	15
Beverages	5	Beverages	10

Source: Own elaboration based on World Internet Statistics, 2021

Shopping trends are changing from brick-and-mortar shops to online shopping. At the same time, changes from non-essential to essential items during the COVID-19 period occurred due to financial constraints and the wider economic meltdown. The largest sharein overall purchases, namely of medicine, standsat 42% with food and groceries accounting for the second largest share of 38%. Home & personal care stands at 5% and alcoholic beverages account for the smallest share at 3%, as shown in Figure 1 below.

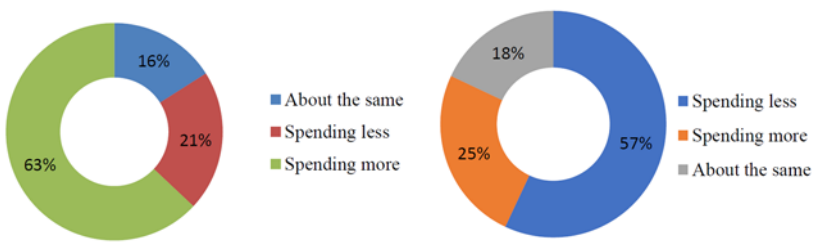
Figure 1. Items purchased online and categorised by continent, January-March 2021



Source: Own elaboration based on World Internet Statistics, 2021.

The results show that 61% of respondents spend more on essential items such as food and medicine, while 23% spend less and about 16% maintained the same level of spending as before the COVID-19 outbreak. Conversely, 57% reduced their spending on non-essential items, while 25% spent more and about 18% spent-the same amount as before the pandemic. Figure 2 shows the changes in spending on essential and non-essential items. The question on difference on spending due to impact of covid-19 in terms of essentials and non-essentials?

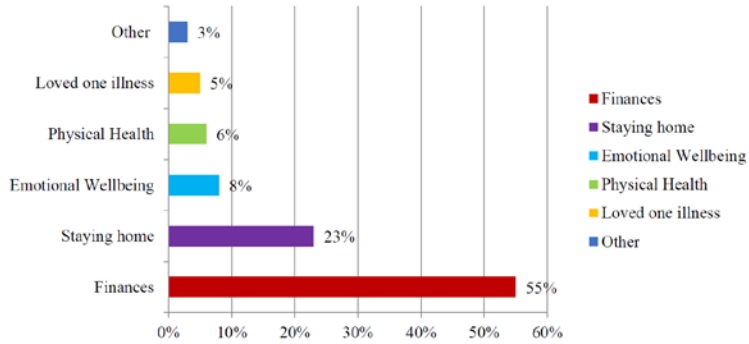
Figure 2. Changes in spending on essential and non-essential items



Source: Own elaboration, 2021.

In the next question, the authors asked the respondents what the biggest challenges during the COVID-19 pandemic were. The results indicated that respondents felt finances were the biggest challenge. Personal finances decreased greatly – as mentioned by 55% of respondents – sincemost firms closed and employees were laid off without pay. Furthermore, restrictions on movement forced people to stay at home, which was considered the second-biggest challenge, cited by 23% of respondents. Emotional wellbeing, physical and mental health were at 8%, 6%, and 5%, respectively. Figure 3 shows the biggest challenges during COVID-19.

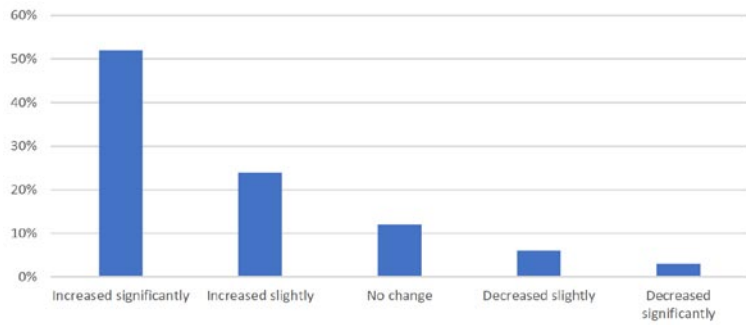
Figure 3. The biggest challenges during the COVID-19 pandemic



Source: Own elaboration.

The economic impact of COVID-19 led to financial hardship from the perspective of respondents. The question from the survey referred to the effect on respondents' level of income during the COVID-19 pandemic. The respondents answered whether their income: increased significantly, increased slightly, did not change, decreased slightly, or decreased significantly. 52% of respondents indicated that their income decreased significantly; 27% that their income decreased slightly; no change: 12%; increased slightly: 6%; and increased significantly: 3%. Figure 4 shows the effect on respondents' incomes during COVID-19.

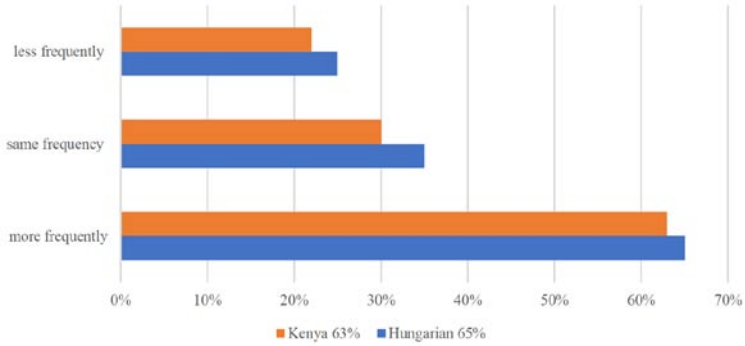
Figure 4. The effect on respondents' incomes during COVID-19



Source: Own elaboration.

To illustrate the impact of COVID-19 on the economy and sustainable e-commerce growth during COVID-19, the authors asked respondents whether more people chose online or brick-and-mortar shopping, and to indicate how frequently theyshopped online. The possible responseswere as follows: less frequently, the same frequency, and more frequently. Figure 5 shows the frequency of online shopping during COVID-19. A clear indication that online shopping increased during the pandemic is that 65% of Hungarian and 63% of Kenyan respondents shopped online more frequently, while the corresponding numbers of those who shopped online at the same frequency were 35% and 30%, and less frequently 25% and 22%, respectively.

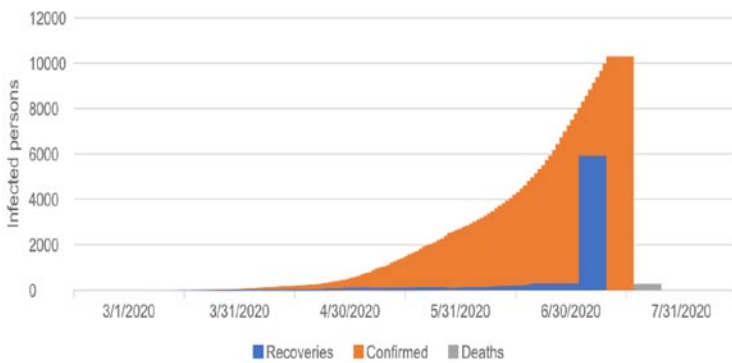
Figure 5. Frequency of online shopping during COVID-19.



Source: Own elaboration.

Figure 6 shows the number of confirmed COVID-19 cases, recoveries, and deaths from 19/03/2020 to 15/07/2020 in Hungary. As time passed, more infections occurred, and the number of confirmed cases of COVID-19 is much higher than instances of people recovering from infection. The death rate was lower in Hungary and Kenya than in other countries such as the USA, Spain, Italy, and the UK. With timely government intervention, the situation is under control according to the guidelines of the Hungarian Ministry of Health and the World Health Organisation. To draw a comparison between Hungary and Kenya, Hungary was able to further reduce the spread of COVID-19 much faster than Kenya in terms of the preparedness of hospitals and medical equipment. There is a high rate of rapid testing of citizens for COVID-19 in Hungary compared to Kenya due to the ease of access to hospitals.

Figure 6. Confirmed COVID-19 cases, recoveries, and deaths from 19/03/2020 to 15/07/2020 in Hungary

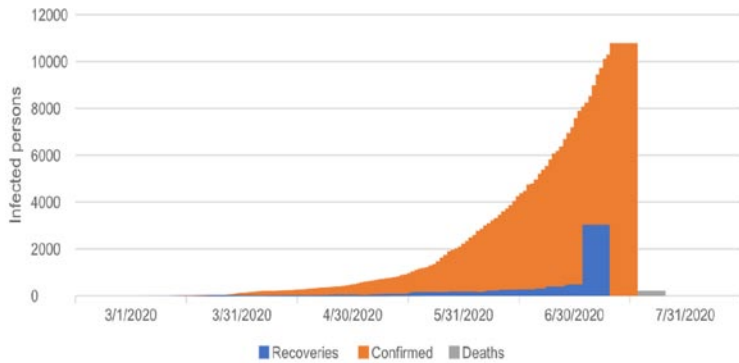


Source: Own elaboration based on World Health Organisation and Johns Hopkins websites, 2021

The government of Kenya could not combat the further spread of COVID-19 faster due to its lack of preparedness, shortage of PPEs and health care workers at the hospitals. However, many stakeholders such as the World Bank, the International Monetary Fund, and the World Health Organisation have advised on adopting

policies to reduce the spread of COVID-19. Figure 7 shows the number of confirmed COVID-19 cases, recoveries, and deaths from 19/03/2020 to 15/07/2020 in Kenya.

Figure7. Confirmed COVID-19 cases, recoveries, and deaths from 19/03/2020 to 15/07/2020 in Kenya



Source: Own elaboration based on World Health Organisation and Johns Hopkins websites, 2021.

4. Discussion

Is e-commerce a better option during the COVID-19 pandemic?

According to our results, the immense growth of e-commerceis clearly visible, especially due to the COVID-19 outbreak and the restrictions on – and total lockdown of – the movement of people and goods by governments. This has resulted in most people turning to online shopping. E-commerce is the most common solution because of its benefits and the level of Internet penetration. This has made e-commerce accessible in almost every country. The benefits of e-commerce include convenience, savings of time and money, 24-7 availability, price comparisons, ease of website interface use, security, privacy features that guarantee safety on e-retailer websites, a feeling of security and safety among consumers, and shopping online being a relaxing experience and consumer comfort levels increasing based on the number of choices (Li et al., 2020; Mainardes et al., 2020; Ystmark et al., 2020; Zheng and Song, 2020). E-commerce is a platform that brings the comfort of online shopping (Srinivasan et al., 2002).

Will the supply chain be disrupted?

Most supply chains have been disrupted. Government restrictions on the movement of goods and people have affected the majority of supplies (Bruinen de Bruin et al., 2020; Terlau and Hirsch, 2015). Also, certain vendors held back their supplies,therefore creating a shortage of goods on the market, resulting from increasing demand for the most essential goods. According to our study, the items most frequently purchased online are medical products, food, groceries, and home and personal care items, with alcoholic beverages being the least purchased. The implication is that, due to the restrictions of movement in transport, flights, trucks, and logistics service providers have been disrupted. As a result, most countries and businesses are experiencing low or no sales at all. Hence, business revenues have declined. At the same time,

observing safety measures to contain the spread of COVID-19 has caused many businesses to suffer losses, resulting in the closure of many of them. Moreover, the further spread of COVID-19 resulted inmore deaths, and a higher number of confirmed cases (Di Renzo et al., 2020). Thus, most countries have opted to close and open transport at their discretion, impacting the economy at will.

Who is affected by COVID-19?

The outbreak and spread of COVID-19 impacted the entire world, but the US is the most affected, with the highest number of confirmed cases, deaths, and recoveries. Hungary and Kenya are affected on a relatively smaller scale when compared to the US, Spain, Italy, and the UK (Maffioli, 2020). Similarly, doctors and health care workers have been on the receiving end of this pandemic; having to work long hours with fewer health personnel, a lack of medical equipment, and the initial lack of a vaccine to contain COVID-19 were the biggest challenges, not only to the health sector but also to the economy (Addo et al., 2020). Society and logistics service providers continue to experience the impact of COVID-19 in the form of decreased income due to job losses. On the other hand, companies have sent workers home with low pay or no pay at all, affecting the consumption of goods and services as the majority of citizens limit their expenditure to essential goods only (Stafford et al., 2020).

What impact will COVID-19 have on the economy and the transformation to the digital economy?

The GDP growth rate of many countries decreasedin 2020. Similarly, the same trend has persisted in 2021 because most industries are shut down or operating at low-scale levels of production. The impact of COVID-19 may continue for several years before recovery; therefore, the possibility of economic meltdown hovers in the background. Restrictions on movement, for example travel restrictions and curfews, have affected the tourism industry which subsequently suffered significant losses. Similarly, most businesses are losing revenue while still having to pay huge, fixed costs. Imports and exports are also a major contribution to the country's GDP and are affected negatively due to supply chain disruption and restrictions on movement (Zambrano et al., 2020). Consumption tendencies have shifted from non-essential to essential goods because of economic and financial hardships affecting both personal and organisational expenditure. The only industry that can be said to be operating to a greater extent is e-commerce. Hence, online retail sales have doubled if not multiplied. This has brought about a positive impact on the growth and development of e-commerce worldwide. However, the global economy will struggle to stabilise due to the impact of COVID-19 on various sectors (Kumar and Somani, 2020). If the government and other stakeholders do not initiate policies and measures to support businesses and private investment, businesses may well experience a challenging existence and contraction over a long period.

5. Conclusions

The world has experienced the negative impact of COVID-19 since it was not prepared for the nature and magnitude of such a pandemic. This has been evidentsince the World Health Organisation declared COVID-19 a pandemic, as did various health ministries, affecting sectors such as education, business, and tourism. As a result, the supply chain has been disrupted and businesses brought to a standstill. This is because most developing countries

had no policies and infrastructure to fully support and operationalise e-commerce without information and communications technology (ICT) support from the government in all parts of the country, especially Kenya (Sicari et al., 2018; Teece, 2018).

It is high time to warn governments to adopt information technology policies that support and guarantee sustainable e-commerce. Businesses should make use of e-commerce for a sustainable future. By doing so, business enterprises will be guaranteed a quick recovery from the economic impact of COVID-19 through e-commerce and its added value to society. Furthermore, youth is the backbone of tomorrow. The majority are unemployed and unengaged in productive activity (Balsmeier and Woerter, 2019). Therefore, the government should tap into such resources and equip youths with the right skills,e.g., IT and e-commerce soft skills. This study revealed that 52% of the population employ social media for chatting and patronising online shops (Bakalis et al., 2020). The government can fund such youths to establish small and medium-sized enterprises (SMEs), thus empowering them both economically and socially. This study advises developed nations to invest in developing countries and guide them towards focusing their energies on furthering the growth of e-commerce. As conveyed inthis study, this is the path to business sustainability because of the many benefits of e-commerce. Similarly, a good idea would be to let all stakeholders work together towards achieving a better society, coupled with vibrant policies and economic initiatives to support businesses and uphold the development of information technology through e-commerce that guarantees a sustainable future in all industries (Oláh et al., 2020). Governments can enact and implement policies that support the use of ICT and e-commerce for a better and brighter future (Frost and Paper n.d.; Bibri et al., 2020).

The COVID-19 pandemic is a tragedy for the entire world. The business sector has suffered massive losses and significant supply chain disruption. Therefore, there is a great deal to be done to revive the economy and society from the negative impacts of COVID-19. It is crucialto take up lessons that have been learned during the COVID-19 period, especially pertaining to supply chain disruption (Nikolopoulos et al., 2021). Whether international or local, businesses cannot afford to neglect information technology and its infrastructure which enables supply chain and logistics companies to develop a network that can accommodate any disruptions. Better supply chains and logistics enhance the delivery of goods and services, particularly during future pandemics, and at the same time, protect businesses and the economy of each country. Supply chains have been greatly disrupted, with a shortage of essential goods, resulting in an increase inthe price ofcommodities such as oil and basic goods, e.g. food, due to higher demand (Hobbs, 2020).

More importantly, it is the role of governments to put policies in place that support the growth and stability of e-commerce, as such policies are lacking in Kenya. Furthermore, providing goods transporters with movement certificates will ensure the supply of goods and services is supported and avoids future breakdowns.

It is important to mention that the health sector is the most affected, andthe economy is experiencing crises since factories ceased production during the COVID-19 pandemic. Many people lost their jobs while others were furloughed with little pay or no pay at all. Primarily, after the government loosened restrictions on movement, businesses have been slow to recover from the economic impact of the COVID-19 pandemic (Gilbert et al., 2020).

Previously, Kenyan politicians and members of the elite travelled to developed nations for treatment, but this time around, due to the lockdown, such travel was impossible (Daily Nation newspaper, 20/3/2021). However, retail and e-commerce are among the significant beneficiaries from the impact of COVID-19; they areamong the industries experiencing an increase in sales as there is higher demandfor essential goods rather than non-essential goods. Meanwhile, the greatest challenges facedduring the COVID-19 pandemic are indicated in this study as financialissues, stay-at-home mandates that contributed to physical and mental health problems, and the business interests of other stakeholders; as such, governments and non-government organisations are still working outhow to support the economy on the road to a full recovery. Thus, the impact of the COVID-19 pandemic is feltfar beyond borders and it is a social and economic challenge on a global scale (Pantano et al., 2020).

The economy has experienced a loss of revenue from different sectors due to the result of the COVID-19 pandemic; for example, tourism revenue declined instantly and dramatically, business travel income was lost, airlines missed out on revenue due to restrictionson movement, and the energy and oil industry has suffered significant losses.

Similarly, the automotive, real estate, and banking industries have been severely affected, leading to the loss of jobs, and in turn to low or no income in the private sector, the result of which is low levels of consumption of goods and services. Economic, social, and business dimensions are the most affected and have struggled to remain afloat. However, with the help of governments injecting funds, offering tax relief, incentives and support, the economy will recover inthe space of a few years. Companies should create social and electronic commerce platforms with SMEs and large companies to be able to bounce back faster. However, governments should have precautionary measures put in place for the protection of human rights and against an economic breakdown. All sectors have experienced difficulties in their operations and in slow growth, except for trade and retail which falls under e-commerce, which shows steady and increasing growth (Bruinen de Bruin et al., 2020). Therefore, the world is heading towards a digital economy sooner rather than later. Governments are advised to adopt policies that support the sustainability of e-commerce.

The impact of the COVID-19 pandemic on sustainable e-commerce, supply chains, labour, logistics service providers, and economic crises as observed from the results and summary of this article, can be useful to all stakeholders when it comes to restoring the economy to normal.

The exponential and steady growth of e-commerce, depicting high sales on online platforms, is due to the impact of the COVID-19 pandemic. The benefits of e-commerce have fuelled the growth of e-commerce, coupled with restrictions on movementand lockdowns. Internet penetration and accessibility have contributed to the development of e-commerce. E-commerce has brought together all key stakeholders in LSP, customers, and suppliers to ensure sustainable e-commerce without disruptions. Therefore, e-commerce is the best option to contain and stop the further spread of the impact of the COVID-19 pandemic.

The supply chain is the link of goods and services from sellers to buyers. This can be ensured by providing the transport of essential goods with a permit or certificate of movement. E-commerce is more practical than theoretical, through empowering investors environmentally, socially,

and economically. Otherwise, if there is a breakdown in the supply chain, e-commerce is also negatively impacted, leading tolow sales, low growth, and low e-commerce development. Also impacted were major sports activities around the world,with cancellationsof e.g., premium leagues and athletics. Restrictions on movement and partial banson people travelling affected flights, buses, and trains. Day-to-day activities, e.g., weddings, various religious gatherings, and clubbing, were also disrupted.

Employees were sent home by most organisations with no or low incomes, which meant services were disrupted because the majority of labour and transport services are offered in- person, e.g., truck driverswere sent home or laidoff. In addition, anxiety among the family members of workers and service providers has an effect, with stress and disorders due to a worse financial situation, staying at home, and physical and mental health problems. Similarly, the disruption and shutdown of restaurants, schools and businesses also negatively impacted employees and service providers, which was detrimental to the economy.

Firms ceased production and the supply of essential goods such as food and home care products. Economic losses occurred in businesses, locally and internationally, in different sectors and industries. There was a gradual decrease in business operations due to lockdowns and curfews. Financial challenges facing SMEs and local traders involved lower or no sales or income, and thus not being able to make loan repayments.

This study investigated the impact of COVID-19 on e-commerce, supply chains, labour, LSPs, and the economy only. Therefore, the theoretical and literature review is cited as a limitation. Moreover, this study used convenience and purposive sampling techniques; therefore, data generalisation of the entire population was not available.

This study added new knowledge to the literature review and academic scholarly work through its novel findings. However, more studies need to be carried out. The practical implications are countless – the COVID-19 pandemic positively impacts the growth of e-commerce, but more negatively when considering supply chain breakdowns, job losses, issues faced by logistics service providers, and economic-crises. Furthermore, the study of sustainable e-commerce involvesa paradigm shift to a digital economy.

Future collaborative studies ought to be carried out in different fields that will provide better results pertaining to the impact of the COVID-19 pandemic. This is due to the fact that COVID-19 is still a new phenomenon, and researchers are on course to discovering the unfolding impact ofsaid pandemic. Governments should invest more resources in laboratories and higher learning institutions to research the impact of COVID-19. This research was undertaken only in Hungary and Kenya, but with awider scope would give more generalised results. Furthermore, the government and the Ministry of ICT should developpolicies that support sustainable e-commerce, both now and in the future. This was notedespecially in Kenya where there is a lack of databases within government ministries and concerned authorities referring to an e-commerce framework and policies. The government should also put energy into developing policies, and into initiating further funding for learning institutions and laboratories for research and innovations in technology used by most developed countries. Financial literacy policies are also essential, as many Kenyans suffered due to a lack of savings. Most of them depend on day-to-day business income-generating activities to provide for their families, espe-

ciallyin comparison to Hungarians. With the impact of the COVID-19 pandemic, society suffered emotional stress due to a worsening of the financial situation. Finally, with a second and third wave flaring up, governments should adopt measures to contain break outs in good time to avoid arepetitive situation whereby many citizens become infected due to government laxity, by adopting policies that support sustainable e-commerce.

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