

# TECHNOLOGY ADOPTION: A SOLUTION FOR SMES TO OVERCOME PROBLEMS DURING COVID-19

**Mr. Anuj Kumar, Ph.D. Research Scholar (GL-2789, Aligarh Muslim University); Assistant Professor (Bharati Vidyapeeth's Institute of Management Studies and Research, Navi Mumbai)**

**Dr. Nishu Ayedee, Assistant Professor, Bharati Vidyapeeth (Deemed to be University), Institute of Management and Research, New Delhi**

## ABSTRACT

*This research study is aiming to provide a solution to the problems facing by SMEs during COVID-19. The main aim of this research to explore the problems faced by SMEs during COVID-19 and how technology adoption can help them in sorting out those problems. The research methodology will be based on previous literature review. Five significant problems of SMEs during COVID-19 are layoffs of employees, financial crunch, health issues of employees, fall in sales and turnover and fall in customer demands. The adoption of different components of technology, technology 4.0. social media and e-commerce can clarify customer demands, increasing automation, maintaining physical distance and increase in sales and turnover. The factors of technology adoption based on previous literature taken from the TAM model and UTAUT model. These factors are the owner's characteristic, perceived usefulness, perceived ease of use and facilitating conditions.*

**Keywords:** SMEs, TAM, UTAUT, Performance, Social Media, E-commerce, Artificial Intelligence, Adoption.

## INTRODUCTION

It is hard to define SMEs because there is no fixed definition. The classification of SMEs is based on investment and the number of employees. SMEs have an important role in the balanced growth of the economy around the world Sharma, et al. (2014). These organizations are the backbone of economic development of a particular nation. In all the countries, SMEs are the primary source of income for the government. Unfortunately, SMEs expect to provide a significant share in the economic growth of the nations, but the organizations are facing the problem of resource limitations. SMEs need to fulfil the goals of growth, development, creativity, innovation, contribution to the economy, economies of scale in production and to face tough competition. It is not possible to fulfil several goals within limited finance and resources. As the relative size of the SMEs increase, it makes a substantial impact on the progress of the nation as well. In most of the high-income countries, SMEs are contributing 50% of the GDP. In developing countries, SMEs are still in the growth phase, and they are exploring the technology adoption in different forms. SMEs are playing an important role in employment generation in the countries.

At present, the situation is worse; COVID-19 pandemic is making a destructive impact on all the businesses, including SMEs business. SMEs are facing a difficult time with many ceasing to operate due to an increase in overall costs, and cash reserves are depleting. During COVID-19 pandemic SMEs are already facing layoffs and closures in business, attrition of employees, weak growth of small businesses and several other problems. The status of SMEs is terrible in all the countries.

For example, before COVID-19 (Kumar, et al., 2020), Indian SMEs were generating approximately 80 million employment opportunities, 8% of GDP, 45% of manufacturing output and 40% of exports from other countries Saluja, (2012); SMEVenture, (2017). The COVID-19 has created several problems for SMEs worldwide, which include layoffs of employees, closure of firms due to cash shortage, the decline in sales, indefinite period of sustaining in business and loss of business opportunities. What can be a possible solution for SMEs to deal with COVID-19 impact and lead towards sustainable business growth? Technology adoption can be an effective solution. In this paper, the writer will discuss how technology adoption can be useful for SMEs in dealing with all challenges.

### **Objectives of Research**

The key objectives of this research mention below:

1. To explore the problems of SMEs during COVID-19.
2. To provide a solution to SMEs problems in the form of technology adoption.

### **RESEARCH METHODOLOGY**

In this study the research methodology/ technique is based on previous literature review on adoption of technology in SMEs. The researchers have studied previous literature on different technological components and how they can improve the performance of SMEs and the factors responsible for technology adoption. The problems of SMEs have also found out from previous literature.

### **Problems of SMEs during COVID-19**

The SMEs are facing problem in entire business either on supply-side or demand side. On the supply side, the labour shortage is affecting the firms. Many migrant labours are moving to their hometown, so they are not available for work. Many of them have been affected by COVID-19 disease. The governments have announced lockdown, so any movement of human beings is not possible. All school, factories, transportation is closed. There is a fall in capacity utilization. The demand for SMEs products and related services is declining. Most of the consumers were spending their disposable income on buying products, but due to COVID-19, most of the consumer is facing a job loss or salary cut, so the spending power is decreasing. Consumers and financial market area in the state of uncertainty because COVID-19 is still one and no-one knows till how far this situation will continue?

The first major problem in all countries is job risk. Many employees are losing their jobs because the firms are facing lockdown, and they have not trained employees on work from the home methodology. Big multinationals are continuing with few employees because they connect through the internet and technology. In SMEs, the technological infrastructure is a significant barrier in technology adoption. If employees cannot work from and firms are facing a cash crunch, it will be hard to retain the employees. In Australia, 68% of all jobs are coming from the SMEs sector, so there is a strong possibility of job loss (OECD, 2020). The lockdown period is extending, and due to financial constraint, the SMEs owners/managers cannot retain with the staff and provide them salaries in countries like India, China, and Germany. In the US, 11 million jobs came from SMEs sector; those 11 million jobs are on the stake (OECD, 2020). New-Zealand has also faced a 4% decline in the job market of SMEs sector during March-April' 2020.

The second major problem is a concern for employees' health Ratnasingham, et al. (2020). The organizational leaders are in a dilemma about whether to call employees for work or not.

The employees who live in a remote place do not want to join a job because they are concerned about their health Dai, et al. (2020); Nurunnabi, et al. (2020). Similarly, organizations are also concerned about the health and wellbeing of employees.

They do not want to call staff unnecessarily, but all the work is not possible from home. The third major problem for SMEs is the financial crunch Schivardi & Romano (2020). Almost all the small and medium business organizations are facing a financial crunch. In India, only 6% of SMEs have finances to operate for the next three months; 27% SMEs are cashless Kumar et al. (2020).

In China, 85% of SMEs will have cash for less than three months, and the situation can be worse? Kilpatrick et al. (2020).

The liquidity is a big problem in the small and medium business sector. There is a sharp decline in revenue, and that decline is affecting the overall processing of the organizations. The production and operations of the small firms are on hold.

The customers are expecting organizations to reinvent themselves using technology. SMEs are looking for a reduction of tariff and other types of a grant from the government. Still, all such charges and tariff reduction will be useful if the small firms will reinvent themselves and try to achieve economies of scale amid COVID-19.

The fourth problem for SMEs during COVID-19 is fall in sales and turnover. In all the countries fall in sales and turnover of SMEs is visible.

Due to lockdown in many countries, the income level of customers has been affected; hence the sales are decreasing. The demand for manufacturing and services product is decreasing.

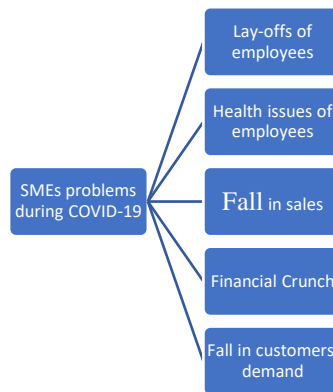
The low demand is adversely affecting the sales and turnover of the company. In the United Kingdom, 69% of SMEs are facing severe cash flow problems with 35% are facing the fear of not reopen again Petropoulos, (2020) ; in China, 80% of SMEs have stopped their operation during February' 2020; in the United States 70% of SMEs are expecting disruptions in supply chain nearly 80% SMEs are facing destructive impact directly or indirectly (OECD, 2020);78% of Canadian SMEs have reported a drop in sales; in Greece, SMEs have experienced 60% decline in sales; in Thailand, 90% of SMEs are expecting drop in revenue; in New Zealand, approximately 71% SMEs have experienced gain hit, and in India, cash situation is awful for SMEs (OECD, 2020).

In India, only 6% of SMEs have the cash to survive for the next six months, 27% SMEs are already without money, and 20 % SMEs have cashless than one month. The fifth major problem of SMEs is fall in customer's demand Dai, et al., (2020); Beraha & Duricin, (2020).

The income level of the customers is decreasing due to which demand for product and services is shrinking. Customers are also sceptical about the delivery of the products because they do not want any physical interaction in Table 1. Hence, they are not ordering the products in Figure 1.

## Evidence in support of SME's problems during COVID-19

<b>Table 1</b>		
<b>SME'S PROBLEMS DURING COVID-19</b>		
<b>S. No.</b>	<b>Problem of SMEs</b>	<b>Evidence</b>
1	Layoff of employees	The adverse effect of COVID-19 can be seen on the employment in SMEs Bartik, et al. (2020).
		The jobs are at risk due to SMEs failure to overcome the negative impact of COVID-19 (Kalemli-Ozcan, et al., 2020).
		Employees have been laid off because SMEs have fewer funds to give salaries (OECD, 2020). Employees salary is really a headache (ECCP, 2020)
2	Health issues of employees	The employees' absenteeism and refusal to work has been increasing due to health issues (Ratnasingham, et al., 2020)
		Labours are concerned about their health, so they are not returning to work (Dai et al., 2020).
		Employees' health is a concern for SMEs (Nurunnabi et al., 2020).
3	Fall in Sales	Malaysian SMEs have experienced 70% in their turnover (Effendi et al., 2020).
		In almost all the countries, China, the UK, Japan, Italy, India, Germany, Poland, US, Korea, Hungary, SMEs sales have been fallen down (OECD, 2020).
		SMEs sales and turnover is a serious issue (ECCP, 2020).
4	Financial crunch	SMEs in Malaysia are facing impact on financial cash flow (Ratnasingham et al., 2020; Kumar et al., 2020).
		The effect of COVID-19 can be seen on Serbian SMEs in the form of a decrease in revenue, and they also lack funds (Beraha & Đuričin, 2020).
		Financial the SMEs are weaker and fragile (Bartik et al., 2020; Liguori & Pittz, 2020; Schivardi & Romano, 2020).
		Financial crunch is increasing in SMEs (Kalemli-Ozcan et al. 2020)
5	Lack of customer's demand	SMEs in Malaysia are facing adverse effect on market demands as customers are cancelling their orders (Ratnasingham et al., 2020).
		The customers demand manufacturing products is decreasing because they fewer salaries (Juergensen et al., 2020).
		Due to lockdown, consumers have financial constraints; hence demands are decreasing (Dai et al., 2020; Beraha & Đuričin, 2020).



**FIGURE 1**  
**SMES DURING COVID-19**

### **Technology Adoption: Solution for SMEs during COVID-19**

The adoption of technology in SMEs can help them in solving their problems occurred during COVID-19. It is possible by effective utilization of e-commerce, social media, and several other technological platforms. Social media tools cover Facebook, Linked-in, blogs, Twitter, You-tube, Instagram; E-commerce channels include several platforms like Alibaba, Magento, Shopify, Weebly and the other technological platforms include technology 4.0 (artificial intelligence, 3D printing, machine learning, robotics, drone etc.) and cloud computing and other forms of technology.

### **Technology 4.0**

Nowadays, technology 4.0 is emerging as a solution provider for SMEs amid COVID-19 pandemic. Artificial intelligence-based algorithms and models can help in fast processing and reasoning Akpan, et al. (2020). Another component of technology 4.0 is big data analytics which can help in extracting information from a big chunk of data. The social networking data can be a source of input for big data analytics. Both artificial intelligence and big data techniques can help SMEs in smart manufacturing Moeuf, et al. (2017). Cloud computing is another component which helps in leasing with multiple computers in real-time and fewer resources. Sales and turnover are continuously lacking for SMEs. Artificial intelligence-based propensity models and solutions can help in identifying potential customers. The sales managers are in a dilemma in which customers need to be prioritized. The propensity models can help them in prioritizing the customers and thereafter improves sales productivity (Gerner, 2020). Artificial intelligence and robotics can work in avoiding physical contacts at the workplace. At the initial level, firms and hospitals can use artificial intelligence for fast diagnosis and results. SMEs can allow their employees to work from a remote location if they are adopting artificial intelligence and other components of technology 4.0. Artificial intelligence can help in automation of approximately 80% of routine tasks such as emails, collecting important information and extracting the data (Malhotra, 2020). It can help in understanding customers' demand and maintaining a smooth relationship with those customers.

## **Social Media Tools**

Another category of online resources is social media tools and platforms. Social media tools are providing various opportunities to small and medium enterprises for a better shopping experience, communication, and collaboration.

The social media tools are best not to improve visibility in the market but also to gain trust and confidence of customers. In developed and developing countries, many customers are using social media accounts either on smartphones or laptops. The advertising and marketing communication on social media accounts better connect customers with companies 24x7 (Kumar & Ayedee, 2018). These social media tools provide a chance of two-way communication to the organizations (Kumar, 2020). The traditional marketing channels and print media was only enhancing one-way communication between two parties. Still, with the help of social media tools, two-way communication is possible because customers can comment and give their opinions. Small and medium enterprises can adopt the born-global approach since the time of their inception by using social media tools.

Social media tools are also a form of usage of internet marketing in firms. As argued by Taiminen & Karjaluoto (2015) if the small and medium enterprises effectively use digital media tools in marketing, it can provide excellent results. The usage of digital marketing tools is still underdeveloped stage because the small organizations did not derive the full potential of digital media tools. Digital marketing use by small and medium organizations in two forms, i.e. one-way communication, and two-way communication. One-way communication does not entertain end users to put their points.

In contrast, two-way communication gives a platform to both the company and end users to put their comments and have a shared dialogue. Banners, emails, print media are one-way communication channels. In contrast, social media tools are two-way communication channel because it allows feedback from customers. This practical usage of digital resources which falls under the category of digitization will lead the organization towards achieving economies of scale in marketing (Taiminen & Karjaluoto, 2015).

The researchers believe that by achieving economies of scale in marketing, the organization will lead towards ecovation, i.e. economic growth. Why should small and medium enterprises adopt digital media tools? These tools will help speedy communication, cost-savings, building more awareness among employees, better customer services and more visibility of brands around the region.

Soto-Acosta et al. (2014) argued that the practical usage of web resources could help organizations in improving knowledge sharing and brings innovation in the process. Nowadays, the firms are using more collaborative internet resources, the collaboration of these internet and ICT resources will help in disseminating more useful information among the organizations. The knowledge sharing through web-resources relates with small and medium enterprises because it helps in generating new knowledge which doesn't exist previously Soto-Acosta, et al. (2014). Through this knowledge, the organization can create new products and services. These technologies will create such resources which can provide more output in terms of sales and volume to the organizations.

## **E-commerce Channels**

To keep business sustainable and to counter the competition, the SMEs can use e-commerce platforms to enhance their performance. E-commerce platforms are a cost-effective solution for growing sales and business expansion. These e-commerce platforms also increase the global reach of the companies outside India. It observed that 77% of SMEs who have adopted e-commerce platforms are generating higher revenues, profit margin and

increased accessibility as well Vellody & Bahl (2015). The e-commerce channels generate higher revenues because it provides the customer with an opportunity to connect with company 24X7.

E-commerce platforms are providing different types of advantages and higher profits to SMEs still only 27% of small and medium enterprises are using those platforms.

There are many e-commerce platforms which are adopted by Indian SMEs. For example- Alibaba, Amazon, and Flipkart etc. The demand for gems and jewellery exports is increasing in foreign countries like the UAE, Hong Kong, and the USA. Alibaba is providing a platform for Indian merchants to sell their products worldwide. DNV Traders is a Mumbai-based jewellery merchant. With the help of Alibaba as an e-commerce platform, the company can expand its business in various countries like USA, China, UAE and other continents (Mansur, 2019).

For selling a product or service, the match between demand and supply is necessary. Alibaba, as an e-commerce tool, provides a wide variety of potential partners to small and medium enterprises. They can establish communication with anyone and anywhere. Alibaba is not only providing a better match for small and medium companies; it will also offer export services such as customs clearance, foreign exchange, tax refund and trade financing etc. Amazon is also emerging as the most popular and prolific e-commerce platform for Indian SMEs. Amazon has collaborated with The Federation of Indian MSMEs so that it can offer better market to sellers and also conduct various exhibitions and events (Mint, 2018). Amazon, Flipkart and other small e-commerce platforms are focusing on small cities because a wide variety of potential is still unexploited in those cities (Fatima, 2014). There are various e-commerce technologies which can be used by the organizations for their development and business expansion. M-commerce technologies include mobile phone devices, smartphones, and PDAs Khaskheli, et al. (2017). Such technologies can increase the revenue, communication and improve the brand image of the company. M-commerce technologies are affordable and easy to use because everyone uses a mobile phone in their daily life. Online technologies can reduce the cost of brick and mortar stores.

There are many successful examples of small-medium enterprises which are using m-commerce for their development- Uber and Airbnb are prime examples. Tagliavini et al. (2001) also argued about the practical usage of e-commerce activities over SMEs. The practical use of internet and resources in the SMEs can help in improving the public relations, customer relationship management and pre-post sales activities of the organization. What is the main objective of making products and services? The companies make products and services so that it can increase its customer base by selling those products and services to the customers inside the country and outside the country. Small and medium enterprises also want to increase the brand visibility of their products and services, but with traditional resources, it will be a costly affair. The usage of internet, e-commerce channels and social media tools can help those organizations in improving their brand visibility around the world with limited financial resources. Technology adoption can enhance the brand visibility of small and medium enterprises. The websites can widen the marketing area for small and medium businesses by improving the company's visibility. It will also enhance the image of the company in different regions. It is a very complicated and tedious process for small organizations to take their products towards in foreign market. The usage of the internet and technology can help those organizations in bringing the product to foreign countries with less effort. It will enhance the image of the company by promoting dynamism and innovation spirit in them.

SMEs have a lack of time and resources. The managers or owners for small and medium businesses do not have ample time to look after customers' timely support. The e-commerce channels provide active support to small and medium enterprises in delivering

operational support 24x7 to their customers Tagliavini, et al. (2001). Suppose the customers get timely support than their loyalty will increase towards the company, and it will reduce the site assistance and other related costs. Small organizations cannot have brick and mortar offices in every country. The traditional paper-based system did not allow taking orders and having more brand visibility because there are finance and resource constraints.

With online order processing system organizations wither big or small can use the internet for effectively taking orders and provide online support to the customers. The practical usage of the internet and technology will reduce the waiting time of the customers. It is more comprehensive to do market analysis with the help of the internet or technology. It will help in acquiring new customers and taking customer satisfaction to a new level.

E-commerce channels and practical usage of internet and resources help the small and medium organizations in improving their overall communication with the customers Olatokun & Kebonye, (2010). There are different enablers of establishing contact with the customers. Few of these enablers are website, email, blog, social media platforms and other internet related services. Adaption of e-commerce channels can improve the managers' communication with customers because the company is responding the customers 24x7 and at the same time customers can also post their comments and views through blogs and social media platforms Fossoet et al. (2014). In this era of globalization, many organizations are thinking globally but acting locally so that they can produce products and services as per customers' requirements how organizations will customize their products and services if they don't know about the customers' choices and needs. Internet resources are bringing customers closer to the company because they can communicate through various platforms.

Previous studies and researchers have justified that usage of the internet can make the overall process of small and medium enterprises faster and economical. The use of the internet can offer various advantages and benefits to the SMEs.

Both suppliers and marketers will get an opportunity to sell their products and services to a broad market because internet usage provides access to a wide range of needs (Brunn, et al. (2002); Essig & Arnold (2001); Hurwitz, (2000); Tumolo, (2001). Secondly, it provides chances for better collaboration and partnership in the international market. SMEs owners can build a networking partnership (Bakos, 1998). Thirdly, usage of the internet adds flexibility in communication with customers. Both customers and sellers are connected 24x7. Customers can raise their complaint at any point in time. The internet provides better connectivity and smooth flow of information Tumolo, (2001); Essig & Arnold (2001). The smooth flow of information and better connectivity enhance the relationship with the customers. Customers enjoy better accessibility with firms. At any point in time, customers can communicate about their needs and wants to the managers in Table 2.

<b>Authors</b>	<b>Impact on SMEs performance</b>	<b>Other studies</b>
(Masood & Sonntag, 2020)	The adoption of industry 4.0 components can help SMEs in improving their financial performance, overall cost, and efficiency.	(Kumar, et al., 2020)
(Nagalakshi & Kumar, 2020)	The technology can help SMEs employees in working from home, avoiding physical contact and continue with their performances. Technology 4.0 based models can improve their understanding of market demands and sales. It can	(Malhotra, 2020), (Gerner, 2020)



	help in improving the turnover and sales of SMEs.	
(Gualtieri, et al., 2020)	Robotics based technology can help SMEs in avoiding physical contact and improve production and efficiency.	(Seyitoğlu & Ivanov, 2020), (Zheng, 2019)
(Apulu & Latham, 2011)	ICT offers different types of potential opportunities for the SMEs. It includes cost saving, better collaboration, improved creativity, and innovation and reaches to the niche market.	(Kutlu & Özturan, 2008), (Ongori, 2009), (Ongori & Migiro, 2010)
(Jahanshahi, et al., 2012)	The research result signifies that e-commerce adoption has a positive and significant impact on operational performance, market-based performance, and organizational performance of SMEs. Still, it is not making a positive impact on financial performance.	(R & M, 1999), (Turban, et al., 2002), (Kumar & Ayedee, 2018), (Kumar & Aggarwal, 2018), (Kumar & Pandey, 2018)
(Bayo-Moriones, et al., 2013)	ICT adoption favourably impact the final performance of the organization, improve market share, profits, margin, and better communication with customers	(Chairoel, et al., 2015), (Apulu & Latham, 2011), (Hashim., 2007), (Kumar & Ayedee, 2019)
(Tarutė & Gatautis, 2014)	ICT adoption positively affects the financial performance of the SMEs. Financial performance includes profitability, growth, and market value. It also improves the strategic understanding of the organizations.	(Consoli, 2012), (Santos & Brito, 2012)
(Ainin, et al., 2015)	Facebook usage has a substantial impact on the financial and non-financial performance of SMEs. Financial performance includes cost reduction on marketing, customer service, improved customer collaboration and information accessibility.	(Wong, 2012), (Ferrer, et al., 2013), (Rodriguez, et al., 2014)
(Popa, et al., 2016)	The research results suggested that e-business is making a positive impact on the financial performance of the firms and organizational innovation is acting as a mediator for improved financial performance	(Soto-Acosta, et al., 2014), (Zhu & Kraemer, 2005)
(Tajvidi & Karami, 2017)	The research results highlighted that there is a positive and significant relationship between social media usage and firm performance. Firm performance can be measured in terms of growth and profitability.	(Kim & Johnson, 2016), (Watson, 2007)
(Sedighi & Sirang, 2018)	The research results justified that e-commerce adoption made a positive and significant effect on the performance of SMEs. The version includes financial performance, growth, innovation,	(Popa, et al., 2016), (Soto-Acosta, et al., 2014)

	and interaction with customers	
(Selase, et al., 2019)	The usage of internet and technology positively affect the market performance of the organizations. The market performance includes increased sales transactions, sales volume, and inquiries.	(Chong, et al., 2012), (Premkumar, 2003)
(Wahyuni, et al., 2020)	The utilization of e-commerce in business will help reduce the cost, speed up the transaction process and improving the marketing efforts of the business	(Kim & Park, 2013), (Stockdale & Standing, 2004), (Modimogale & Kroeze, 2011)

## Key Findings

The above discussion helped in understanding the role of technology adoption in solving the problems faced by SMEs during COVID-19. The key findings are:

1. Industry 4.0 technologies include artificial intelligence, robotics, big data and IoT can help SMEs in reducing physical touch at the workplace. Employees can work from a remote location and perform all major duties. These technologies will also help in channelizing the demands accordingly sales and turnover can increase. The customers' needs can be analyzed through the model, and SMEs can move towards profitability. The profitability will help in retaining the employees. So, technology 4.0 can address all the problems that occurred during COVID-19.
2. Secondly, focus on social media and e-commerce channels. In many countries, the adoption of technology 4.0 is a challenge. In those countries, the SMEs can invest in social media tools and e-commerce technologies for better performance during COVID-19. Social media tools can be an excellent resource in maintaining two-way communication with the customers and correctly analyzing their demands. After the demand analysis, production can be in synchronization, which will help in improving the sales of the SMEs.
3. Thirdly, technology adoption can help SMEs in moving towards automation-based manufacturing. The scenarios and modelling based on technology can help them in automating their process, and thereafter organizations can move towards economies of scale and profitability can be increased. With the increase in profitability, SMEs can manage its financial crunch.

## Factors Responsible for Technology Adoption

The past researchers have argued about different theories and models for technology adoption. Fishbein & Ajzen (1975) proposed the idea of reasonable action. The critical parameters of the theory of rational action were attitude and subjective norm. Further, Ajzen (1991) proposed the theory of planned behaviour with and an additional parameter called perceived behavioural control. Davis (1989) came up with the Technology Acceptance Model with two critical constructs of attitude: perceived usefulness and perceived ease of use (Abed, et al., 2015; Ajzen, 1991). Tornatzky & Fleischer (1990) came with TOE (technology, organization, and environment) framework for technology adoption. Venkatesh, et al. (2003) came up with Unified theory of acceptance and use of technology with critical constructs as performance expectancy, effort expectancy, social influence and facilitating conditions. The extended version if the UTAUT model is UTAUT 2 with three additional constructs as hedonic motivation, price value and habit (Venkatesh et al., 2012).

As discussed above, many theories and models related to technology adoption. The first fundamental construct for the adoption of technology in SMEs can be a business owner. The IT knowledge and skill of the business owner/manager can be a motivating factor in the adoption of technology in SMEs.

Business owners have an essential role to play in decision making on the adoption of technology. Many employees are not comfortable in technology adoption because business owners themselves are not interested. In previous literature, many researchers have argued on the role of business owners in technology adoption. During COVID-19, many business owners/ managers have realized that without technology adoption, survival is impossible, so they are looking to adopt technologies as soon as possible. Those who know already looking to embrace it, others are also motivated to do it due to pandemic.

The second construct for technology adoption can be perceived usefulness. This construct is from TAM model of technology adoption. Perceived usefulness defines as the degree to which an individual thinks that he/she will get performance benefit by the adoption of the technology. The individual thinks and analyze the performance benefits by using technology, either e-commerce or social media. He/she also think about the potential advantage of one technology over another.

Social media and e-commerce adoption can be beneficial for organizations because it will help in generating higher revenues and improve the cost-effectiveness of the company.

The third construct is the perceived ease of use. It is also from the TAM model. Why employees show resistance to technology adoption? Because they are not comfortable using technology and not trained on that technology.

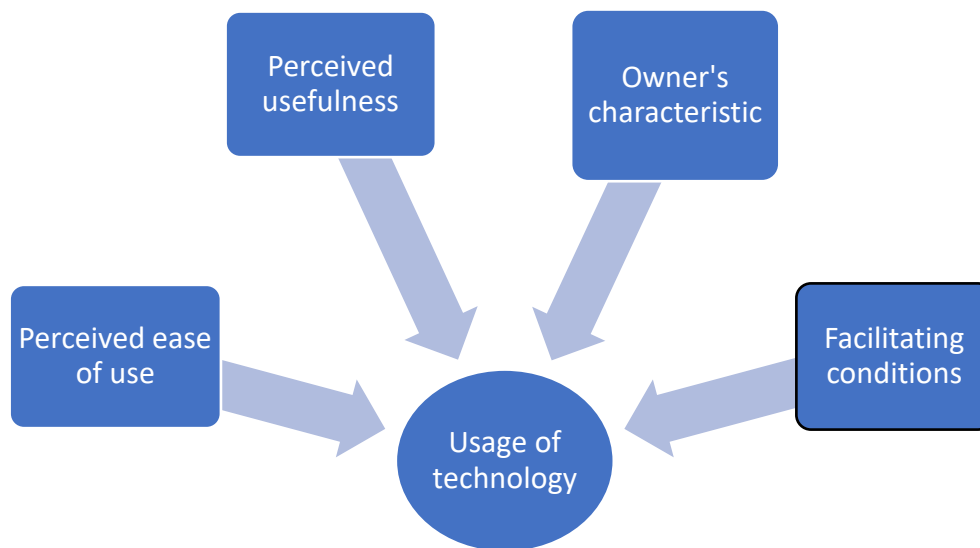
*“Perceived ease of use is the degree to which an individual believes that a particular system is free to use, and no such expertise requires in adoption.”*

If an individual feels that a specific course is not comfortable to use, then he/she will try to avoid it. In today's era, when social media is an essential component of an individual's life, the ease of use will be much higher in the adoption of technology in the form of social media rather than e-commerce.

The fourth construct can be facilitating conditions. This construct is from the UTAUT model of technology adoption. Facilitating conditions is the degree to which an individual believes that the organizational and technical infrastructure will be useful to support the overall system during technology adoption (Table 3 and Figure 2).

Many organizations start technology adoption in the form of e-commerce and social media, but they do not have the proper infrastructure to use that. During COVID-19, many firms tried to adopt technology, but lack of technical infrastructure did not make it possible.

<b>Key factors for technology adoption</b>	<b>Previous studies supporting the factor</b>
Owner's characteristic	(Hanum & Sinarasri, 2017), (Rahayu & Day, 2015), (Nguyen & Waring, 2013), (Olatokun & B., 2011)
Perceived usefulness	(Venkatesh, et al., (2003), (Davis, 1989), (W.H. Makame, 2014), (Zarehan, et al. (2011), (Taylor & Todd, 1995)
Perceived ease of use	(Venkatesh et al., 2003), (Taylor & Todd, 1995), (Nguyen & Luu, 2020), (Kaur & Kumar, 2020)
Facilitating conditions	(Anderson & Schwager, 2004), (Al Mursalin, 2012)



**FIGURE 2**  
**USAGE OF TECHNOLOGY**

## DISCUSSION AND CONCLUSION

The above research stated that during a pandemic, the SMEs worldwide are facing the problem of business growth, sales, revenue, and employee retention. The adoption of technology in different forms can be a potential solution which can help SMEs in dealing with various problems faced during COVID-19. The different components of technology adoption can also help in avoiding physical contact, forecasting demand, increasing overall sales & turnover, market access and turn them towards profitability. Previously long-distance customers could not connect with the organizations, but the usage of internet and other e-commerce resources is improving overall communication between customers and companies. Many small and medium organizations are adopting a global approach since the time of their inception in developed as well as developing countries. It is possible because of the internet and other e-commerce resources. Internet and e-commerce have reduced the usage of mortar and brick offices by providing virtual technical offices to small and medium organizations.

Finally, it concludes that all the five problems of SMEs sorted with practical usage of technology adoption. The factors identified for technology adoption as perceived ease of use, perceived usefulness, owner's characteristics and facilitating conditions. Technology adoption is not possible without the owner's consent.

The owner should motivate the employees to use technology for better financial and non-financial performance. In this pandemic time, employees will realize the perceived usefulness of technology adoption because only technology can help the continuous operations of a business in the absence of physical interaction.

### Limitations and Scope of Future Research

This research is limited to secondary data and previous studies done on the usage of technology adoption in SMEs.

But all the constructs of technology adoption, impact of financial performance and other non-financial performance judged based on previous literature. There is a vast scope of primary research on this topic in different countries. The researchers can check the operationally of adoption factors for managing problems of COVID-19 by conducting primary research.

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