

A TWO-DECADE LITERATURE REVIEW ON CHALLENGES FACED BY SMES IN TECHNOLOGY ADOPTION

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ABSTRACT

The purpose of this study is to discuss the importance of technology for SMEs. The world is moving towards technology 5.0, SMEs have not able to adopt technology 2.0 effectively. COVID-19 pandemic has taught the world about the importance of technology in effective working from remote places. In the first section of this study, the authors will discuss the importance of technology adoption; later, the second section will focus on the various challenges in the adoption of technology. The research methodology is based on a systematic literature review. The authors have reviewed the literature of the last twenty years to judge the challenges pertaining to technology adoption. The literature has been reviewed in a longitudinal manner. The findings of this study suggest that the significant challenges in technology adoption are the cost of technology and infrastructure, technical skills and efficiency, adoption challenges, lack of organizational support, and governmental support.

Keywords: SMEs, Technology, Challenges, Management, Literature Review.

INTRODUCTION

Currently, the whole world is looking to develop such a society in which the poverty level should be less, more employment, sustainable production, and increase in the usage of technology as well. SMEs be the engine of economic growth and development of any nation. The government cannot ignore the SMEs and requisites for progress. SMEs can help the nation in increasing its manufacturing GDP. The whole burden of an economy cannot rest on the shoulders of government and big multinational organizations. There are countries that exist around the world in which people have less education, less money, and a Lack of desired skill set. SMEs can play a significant role by providing employment to such people by providing them some initial training. On the other hand, SMEs also have limited oxygen in terms of money and other resources. It is quite tricky for all SMEs to hire the best talent from around the world. SMEs need to grow substantially with limited resources and need to contribute towards the economic development of the nation. There are few significant sectors in which the role of SMEs is prominent for any country:

1. Employment generation
2. Economic Development
3. Increasing manufacturing output
4. Improving the skillset
5. Increase in the total exports
6. Improve business capability

Before going further, it is necessary to understand the definition of SMEs. In the authors' opinion, there is no such definition for SMEs. Few countries categorize SMEs as per revenue; others categorize them based on the number of employees working or the investment level. It can be said the definition of SMEs varies from one country to another. Now, all the nations of the world are facing the atrocities of COVID-19. The researchers, academicians, and managers are trying to work on an effective solution for mitigating the impact of COVID-19. In the current scenario, few researchers have argued that technology adoption can be a key for SMEs, which can help them in this situation. Kumar & Ayedee (2021) argued that technology adoption could be critical for SMEs to counter the problems of COVID-19. The different types of technology can improve the operations at the SMEs level. Kumar et al. (2020) also argued that technology adoption is vital for SMEs during COVID-19 because technology can help the employees in working from a remote location by avoiding physical touch. Papadopoulos et al. (2020) also argued about the usage of digital technologies for SMEs to improve their performance, especially during COVID-19. Digital technologies can help in overcoming the repercussions of COVID-19. Creativity and innovation is the need of the hour. In this pandemic hour, design can only help SMEs. The invention can be in their business models. The SMEs can align their business models based on digital technologies. In comparison to well-established firms, SMEs can quickly transform their business models because these organizations are much more flexible in nature. SMEs are ready for open innovation because there are fewer people who will offer resistance to change (Priyono, et al., 2020). Free design is dynamic in nature, and it requires acceptability from the employees and employers. The business units of big multinationals floated in many countries, so they will not prefer open innovations in their business model. At present, SMEs are under enormous pressure because they are working with limited resources. They are the major epic center of public crisis because they are directly connected with the public at a lower level and middle level (Guo, et al., 2020). Guo et al. (2020) argued that digitization could help SMEs in dealing with public crises that arise during COVID-19. Not only at the time of the COVID-19 pandemic, but the researchers and academicians have also argued about the adoption of various types of technologies for a long. Researchers have argued that the usage of social media tools not only helps in the business growth of SMEs (Kumar & Ayedee, 2018) but it also helps them in reaching the goals of sustainability (Kumar & Aggarwal, 2018; Kumar & Ayedee, 2019). The social media channels and other technological platforms like e-commerce, cloud computing, m-commerce have the capability to take small organizations towards growth with limited resources. The big multinationals are focussing on strategic management of organizations, and they are adopting new practices which keep them ahead in the race of creativity and innovation (Kumar & Ayedee, 2019; FRANKOVSKÝ, et al., 2019). As the resources of SMEs are limited, so are the chances of design, and scope is also limited. They don't have to go through significant cultural changes in their organizations. They can highlight their innovative capacity by technology adoption. A number of theories discussed technology adoption in SMEs. In actuality, it is time for SME managers to understand the usage of approaches and adopt technology in their daily operations.

It is true that technology adoption and its need have been discussed by various researchers and academicians prior COVID-19 pandemic, during the COVID-19 pandemic, and it will be continuously discussed post COVID-19 pandemic also. As said above, there are theories explaining the adoption of technology in SMEs, but there are some real challenges that halt the process of adoption. In this paper, the authors will try to find out the real challenges in the adoption of technology by SMEs.

Objective

The main objective of this paper is to explore the challenges faced by SMEs in the adoption of various types of technology.

RESEARCH METHODOLOGY

The research methodology in this paper is focused on a systematic literature review. A series of research papers discussing challenges faced by SMEs in the adoption of technology has been reviewed in a longitudinal manner. Snyder (2019) argued that a systematic literature review could be used as a research methodology. The researchers can search the papers on their subject domain and afterward can do a structured review by making Table 1 (Paul & Criado, n.d.). In this research, the authors have searched the previous two decades of literature to find out the common challenges faced by SMEs while adopting the technology. The various databases used for searching research papers are ProQuest, Ebsco, Elsevier, Google Scholar, etc.

LITERATURE REVIEW

Table 1
TWO DECADES LITERATURE REVIEW

S. No.	Year	Authors	Challenges
1	2001	(Tetteh & Burn, 2001)	The biggest challenges discussed by the authors are virtual infrastructure management and e-business value chain analysis. These two challenges can apprehend the scope of business processes for value chain analysis.
2	2001	(Hsiao, 2001)	The most significant technological challenges for adopting the IOS system are related to technical difficulties, which include payment gateway securities problems, dealing with technical complexities, facing issues system integration, and IT infrastructure cost. The intra organizational challenges include a Lack of awareness in the adoption and implementation of business process re-engineering. The organizational challenges include a Lack of proper guidance, practical knowledge, and insufficient information.
3	2002	(Harker & Akkeren, 2002)	The major challenge is the rate at which technological changes are happening; it is tough for the business owners/managers to change as per the environment. Other challenges are the level of mistrust in the IT industry, the cost of technology, and the adoption level of IT technologies.
4	2002	(Windrum & De Berranger, 2002)	Significant challenges counted in the e-business adoption process by SMEs are Organizational characteristics, Organizational action, Internal and external expertise, Sector and supply chain factors, Locational factors,

			and late adaptation.
5	2003	(Drew, 2003)	The biggest challenge is the implementation of the internet and e-commerce in SMEs. After the adoption, the staff members in the organizations lack the necessary skills and technical proficiency to deal with e-commerce.
6	2003	(Seyal & Rahman, 2003)	Lack of sufficient E-commerce knowledge and skilled employees that unable to perceive its benefits and which leads to lagging in the implementation of the e-commerce process successfully. Employees' insufficient knowledge and compatibility is also an issue for the organizations in the path of technology adoption.
7	2004	(Santinha & Soares, 2004)	The ways in which employees, organizations, and institutes deal with ICT will be a challenge. The practical implementation and pursuit for efficacy in ICT will be another challenge for the organizations.
8	2004	(Stockdale & Standing, 2004)	The significant challenges, according to the authors, are Lack of proper understanding of SMEs, Lack of technical and professional efficiency, internal barriers, financial limitations in the organization, and internal barriers.
9	2005	(McCole & Ramsey, 2005)	The most formidable challenges in New Zealand SMEs are their slow reactions to perceive deviations in modern technologies, sluggish to reply, less faith in technology, or sanctuary associated with internet empowered business. The dynamic changes in technology are also creating challenges.
10	2005	(Pease & Rowe, 2005)	According to significant author challenges faced by SME, is successful implementation and possible adoption of e-commerce process & practices are significantly less and slow, as compare to Large enterprises. The diffusion rate is unequal in the application of regional versus urban areas. City size, location, and distinctive culture are also considerable challenges.
11	2006	(McCole & Ramsey, 2006)	Specific challenges resolutely faced by SMEs are data security threats, Mobile terminals with different capabilities & different formats to exchange data. Heterogeneous wireless services, Lack of IT-Experts, as well as Lack of R&D facilities. Apart from mentioned challenges biggest challenge is the lack of necessary infrastructure, ie. Low memory, battery capacity, and poor bandwidth quality facilitate the adoption process.
12	2006	(Dutra, et al., 2006)	Scotland SMEs are facing challenges in the E-procurement adoption process are a security risk, poor communication & network issues, Complex documentation process, Use of complicated language and complex terms & conditions for tender submission, as well as Lack of IT skilled people for the e-procurement process.
13	2007	(Grama & Fotache, 2007)	Romania SME sector facing challenges due to the lack of a constitutional framework, immaturities of enterprises, insufficiently developed infrastructure. Negligence towards effective use of technologies as well as how to sell products & services through the internet.
14	2007	(Nguyen, et al., 2007)	The author has adequately discussed an extensive barrier in the effective implementation of CRM practices in e-business are lack of understanding regarding CRM implementation, Lack of good leadership, apparent Lack of factual information regarding the proper utilization of useful CRM tools.
15	2008	(Arendt, 2008)	The most typical challenges confronted by SMEs represent a distinct lack of fundamental technical knowledge, lack of experts and skilled employees, and less practical approach in the successful adoption of Information and Communication Technologies (ICT) as compared to the humongous enterprises and that leads to "the digital divide" or "digital exclusion" between SMEs and Large Enterprises.
16	2008	(Wolcott, et al., 2008)	The crucial and commercial challenges decisively faced by micro-enterprises in the successful adoption and implementation of ICTs to

			create economic worth for their considered trades are lack of resources & poor IT infrastructure, inadequate skillful IT users, resistance towards new technology adoption, the apparent mismatch between appropriate technology & cultural factors, and last but not the least insufficient operational support & administration.
17	2009	(V, et al., 2009)	Open innovation rehearses in improving SMEs have been disregarded, and proverb difficulties when SMEs embrace available advancement rehearses are authoritative load, acquiring monetary help, absence of mechanical skill, deficient market insight, development cost, client necessities, and client request examination, representative opposition towards required change.
18	2009	(Snider, et al., 2009)	The biggest challenge faced by SMEs in the modification of ERP software and its implementation in business process, due to the absence of technical proficiency as well as business expertise in employees as compared to an outside consultant.
19	2010	(Scholz, et al., 2010)	Major Business Intelligence benefits and challenges with a significant focus on SMEs are the high costs of execution and maintenance of BI and data warehouse solutions, the technology itself is used willingly by SME. which properly designate the business behavior and inner structure of the observed SMEs
20	2010	(Al-Fawaz, et al., 2010)	Challenges and influential factors in ERP adoption and implementation are lack of clarity about the needs & necessity of ERP, Lack of considerate between essential business, IT processes & firm's positioning, lack of dynamic competencies to create any concrete output from ERP.
21	2011	(Hamisi, 2011)	Significant logistical challenges in the adoption of technology faced by Tanzanian SMEs are exceptionally high costs for logistic & supply chain, complicated global sourcing, unintegrated as well as obsolete technologies.
22	2011	(Awa, et al., 2011)	Challenges confronted by Nigerian SMEs to persistently pursue Information Technologies are due to demographic and psychographic characteristics that are undoubtedly having a profound effect on decision-makers' implementations of IT technologies. Top administration negligence towards IT technologies. SMEs are often inhibited by their inadequate related resources.
23	2012	(Moghavvemi, et al., 2012)	Factors gently persuading SMEs in Malaysia to adopt organizational IT innovations voluntarily is the dearth of IT adoption has been identified, which includes a shortage of financial resources and proficiency. Lack of skills employees and acquaintance with regard to IT advantages.
24	2012	(Imanipour, et al., 2012)	The most significant Obstacles in the growth of Iranian SMEs is distinctive characteristics of small and medium enterprises that undoubtedly have a disingenuous cut-throat role in the effective adoption and implementation of business process management (BPM) in SMEs
25	2013	(Lewandowski, et al., 2013)	The most common challenges experienced by SMEs during the successful "implementation as well as post-implementation" of efficient ERP SAAS are functionality, consistency, compatibility, and serviceability.
26	2013	(Shemi & Procter, 2013)	Challenges confronted by Botswana-based SMEs to adopt e-commerce applications are technical challenges, administrative challenges, ecological challenges as well as executional challenges.
27	2014	(Dahnil, et al., 2014)	As compared to large enterprises majority of SMEs professed the lack of "capital, human and technological" resources and finding costly affairs in successful adoption, effective implementation & execution of IT into their business process. In Malaysia, fundamental problems confronted by SMEs for Lack of expertise in the proper usage of social media marketing practices.
28	2014	(Mba & Cletus, 2014)	SMEs in Port-Harcourt City in Nigeria are unprotected from the listed challenges in their day-to-day procedures, comprehensively addressed

			poor funding, scarcity of social infrastructures, noticeable lack of administrative skills, and several taxations constitutes prevent the outstanding performance of SMEs in Port-Harcourt City, Nigeria.
29	2015	(Bharathi & Mandal, 2015)	The current status and highlighted challenges in the adoption of ERP services are listed as implementation cost, organizational cost, security cost, organizational functionality factors. Prioritize and exuberant the "analytic hierarchy process (AHP)," the most critical aspects of cloud ERP towards the justifiable business performance of SMEs.
30	2015	(Awa, et al., 2015)	The most considerable challenges confronted by SMEs for e-commerce implementation are lack of supportive infrastructure, facilitative conditions, size of organizations, employees' attitude towards e-commerce application, and perceived service quality.
31	2016	(Chatzoglou & Chatzoudes, 2016)	The author has examined the key determinants that invariably affect e-business implementation by SMEs are conducive IT support, technical skill sets, organization's size scope, administrator's domain knowledge & expertise, implementation cost, government & suppliers support, competitors pressure, consumer willingness, and apparent acceptance.
32	2016	(Coleman, et al., 2016)	SMEs in the European business fraternity contemplates sufficient reasons for the low adoption rate of "big data analytics," apparent lack of fundamental understanding and cognizance about new business trends and elite prospects, inherent conservatism towards advanced business practices, scarcity of data analytics proficiency as well as a skilled data analyst, shortage of beneficial consultancy services, data security issues, financial glitches.
33	2017	(Kabanda & Brown, 2017)	A considerate analytical practice of successful ICT adoption and effective implementation in Tanzanian SMEs faced challenges due to inadequate use of websites - primarily for marketing, usage of Mobile technology for transactional purposes, collaboration with technical service providers to resolve technical problems.
34	2017	(Shah, et al., 2017)	Formidable challenges related to successful adoption and effective implementation as well as execution process of big data in SMEs are noted as technical, economic, and managerial.
35	2018	(Salleh, et al., 2018)	The most familiar challenges typically faced by SMEs that prevent many SMEs from using cloud computing are specific as data safety, and secrecy concerns are stated as the crucial challenge, incapability, or distress in switching over cost for another vendor, internet connectivity and speed, along with network obtainability. SMEs adequately met high-instability when markets faced recurrent fluctuations in market demands and customer preferences.
36	2018	(AlSharji, et al., 2018)	Technological Setting Organizational Framework Environmental Situation is the most significant challenge faced in social media adoption by SMEs in the UAE.
37	2018	(Kumar & Ayedee, 2018)	Lack of funds, unskilled labor, less quality realization, less financial forte, and unhealthy work culture. Given less importance to quality, the brand image of SMEs as compared to large enterprises are less persuasive, and that affects the monetary movement of SMEs.
38	2019	(Singh, et al., 2019)	Challenges faced by the Indian food sector are financial issues, the dearth of technical assistance, lack of skilled labor, the practice of outdated technologies, and governance issues.
39	2019	(Prause, 2019)	Challenges in the adoption of Industry 4.0 in Japan are summarized as over-all & precise technological factors, administrative and conservational factors
40	2019	(Kumar & Ayedee, 2019)	The lack of professional training and switch-over cost are the main hurdles in the implementation of technology.

41	2020	(Kumar, et al., 2020)	The foremost challenge confronted by SMEs in the adoption of I4.0 applications is the lack of drive and enthusiasm from business partners as well as clients, and the dread of I4.0 technology's failure affects most of the group performance.
42	2020	(Effendi, et al., 2020)	Social Media Adoption in SMEs Impacted by COVID-19. Social media adoption has undoubtedly helped SMEs to be able to rise from economic adversity. But social media is significantly affected by the technological context, administrative framework, environmental situation, and social media cognizance.
43	2020	(Kumar, et al., 2020)	Technology adoption by SMEs during pandemic COVID-19 is not serving the actual purpose due to unskilled employees. Significant challenges for SMEs are The cost incurred in Traditional marketing channels and marketers is finding it expensive. The accomplishment of CSR goals by diminishing the conservational concerns
44	2021	(Kumar & Ayedee, 2021)	Challenges faced by SMEs during COVID-19 are deficiency of ICT infrastructure, lack of standards, data security apprehensions, high investment necessities, skills scarcities, lack of monitoring framework, unwanted strain, no workforce.
45	2021	(Turkyilmaz, 2021)	The critical challenges towards the adoption of Industry 4.0 among Kazakhstan enterprises. The deficiency of skilled personnel in SMEs, a lack of acute strategy is also one of the significant problems. At the current ICT level and over-all Kazakhstan's structure level, data safety issues are also significant concerns.
46	2021	(Nasution, 2021)	Both innovativeness and proactiveness of Entrepreneur Orientation (EO), risk-taking and the proactiveness of EO, knowledge management process, future uncertainty, and primitiveness of EO and E-commerce adoption, innovativeness of EO, dynamic capability (DC) toward the effective implementation of electronic commerce (e-commerce) of SMEs in North Sumatera.
47	2021	(Chang, 2021)	The profound impact of technical aspects like readiness to adopt I4.0, technological shelter, technological incorporation. The reflective impact of organizational financial obligations, lack of top management support, competitive pressure, and environmental uncertainty has a substantial effect on the adoption of Industry 4.0 technologies.
48	2021	(Ali Qalati, 2021)	Key challenges in the successful adoption of effective Social Media platforms by SMEs are organizational construct which includes internal characteristics of firms, employees' size, organizations' turnover, administrative structure, restricted sources, correlated issues, economic uncertainty, trading partner pressure, and competition enforcement.
49	2021	(Maisiri, 2021)	The explicit inhibitors for sustainable I 4.0 adoption in the sub-Saharan African, developing countries are lagging industrial development, insufficient innovation system, a slow leap of deliberate adoption, restricted access to I 4.0 technology, limited access to internet supply, and scarcity of critical skills.
50	2021	(Viswanathan, 2021)	The World Economic Forum survey specified that lack of professional skills training at academic institutes is one of the formidable obstacles restraining entrepreneurship potential. In the present situation, unstable market with rising demand due to customer-oriented service industry, robust supply chain management with vigorous technology is impending.

ANALYSIS AND DISCUSSION

Based on the literature review of the last two decades, the following challenges were found more common in SMEs while adopting various sorts of technology, i.e., technology 4.0, social media tools, e-commerce, m-commerce, and different other kinds of technology in Table 2.

Common challenges	Authors	Frequency
Lack of technical skills and efficiency	(Hsiao, 2001), (Harker & Akkeren, 2002), (Drew, 2003), (Stockdale & Standing, 2004), (Dutra, et al., 2006), (Arendt, 2008), (Snider, et al., 2009), (Moghavvemi, et al., 2012), (Shemi & Procter, 2013), (Chatzoglou & Chatzoudes, 2016), (Coleman, et al., 2016)	11
Security issues	(Hsiao, 2001), (Dutra, et al., 2006), (Wolcott, et al., 2008), (Chatzoglou & Chatzoudes, 2016), (Coleman, et al., 2016)	5
Lack of organizational support	(Hsiao, 2001), (Windrum & De Berranger, 2002), (Pease & Rowe, 2005), (Dutra, et al., 2006), (Grama & Fotache, 2007), (Al-Fawaz, et al., 2010), (Dahnil, et al., 2014), (Mba & Cletus, 2014), (Shah, et al., 2017)	9
Cost of technology and infrastructure	(Tetteh & Burn, 2001), (Harker & Akkeren, 2002), (Stockdale & Standing, 2004), (McCole & Ramsey, 2006), (Grama & Fotache, 2007), (Wolcott, et al., 2008), (V, et al., 2009), (Scholz, et al., 2010), (Hamisi, 2011), (Moghavvemi, et al., 2012), (Mba & Cletus, 2014), (Bharathi & Mandal, 2015), (Shah, et al., 2017), (Kumar & Ayedee, 2018), (Maisiri, 2021)	15
Adoption challenges	(Hsiao, 2001), (Windrum & De Berranger, 2002), (Drew, 2003), (Santinha & Soares, 2004), (McCole & Ramsey, 2005), (Awa, et al., 2015), (Lewandowski, et al., 2013), (Imanipour, et al., 2012), (Kumar & Ayedee, 2021)	10
Less support from the government	(Grama & Fotache, 2007), (Wolcott, et al., 2008), (Shemi & Procter, 2013), (Chatzoglou & Chatzoudes, 2016), (Kumar & Ayedee, 2019), (Effendi, et al., 2020), (Kumar, et al., 2020)	7
Internet and outdated technology	(Harker & Akkeren, 2002), (McCole & Ramsey, 2006), (Kumar & Ayedee, 2019)	3

Based on the analysis of all the challenges, it can be said that the significant five challenges for the SMEs owners and managers are lack of technical skills and efficiency, cost of technology and infrastructure, adoption challenges, lack of organizational support, and less support from the government.

Cost of Technology and Infrastructure

It is true that adoption of technology will lead SMEs towards economies of scale by reducing their overall cost, but the initial hurdles are there. Most of the researchers have discussed that the initial cost of implementing the technology is too high, and the infrastructure required for overall set-up is also a problem. SMEs owners and managers need to overcome this challenge before thinking about the adoption of any type of technology at the organizational level.

Lack of Technical Skills and Efficiency

Another formidable challenge in the path of technology adoption is the current level of technical skills and efficiency of the employees, managers, and owners. Their knowledge level is less on technology. They are not fully trained in the adoption of technology. In few organizations, even the owners and the managers are not technically proficient. We often talk about technology 4.0, but in the current scenario, many of the organizations haven't even adopted technology 2.0, which includes social media tools. Digital marketing is the new trend of marketing, but SME owners need training on that as they lack technical skills, so the technical efficiency is also not at par with the expectations.

Adoption Challenges

The adoption challenges are very much related to the overall attitude of the employees, budget constraints, and internal organizational characteristics. The old-age employees don't want to change themselves as they are much more comfortable with routine practices. Lewin's change management model also argued about the attitude and unwillingness of employees towards new changes (Ayedee & Kumar, 2020; Kumar & Ayedee, 2019). Besides the mood, the financial constraints are also created adoption challenges at the organizational level. The internal executive comfort with new technology, willingness towards creativity and innovation, secrecy issues are other concerns in the adoption of technology.

Lack of organizational support

If SMEs want to switch over technology completely, then they need corporate help. Corporate sponsorship is judged at various ends. The organizations should support organizations in terms of finance, training, switch over time, expert talks, supportive infrastructure, and effective implementation of the change management process.

Lack of governmental support

The governments also have an essential role to play in the adoption of technology at the organizational level. The government-funded training programs can help the SMEs owners, managers, and employees in the adoption of technology. Besides that, there are some other special schemes that can help the organizations in successful adoption. Governmental support can also help the organizations in setting up the necessary technological infrastructure for the adoption of technology.

CONCLUSION

Based on the above discussion, it can be concluded that technology adoption is much more demanded in SMEs, and after COVID-19, the intensity of technology adoption is much more. It is high time for SMEs owners and managers; now, they can not ignore the adoption of technology. The two decades literature review suggested that managers are facing different types of challenges and hurdles in the adoption of technology, i.e., data security, low technical skills, efficiency, high cost of infrastructure, training cost, adoption challenges, less government support, less organizational support, local sources, administrative challenges, organizational challenges, attitude issues, and several other issues. The high-frequency difficulties are the high cost of infrastructure, less technical skills and efficiency, less support from the government, adoption challenges, and lack of organizational support.

Future Research Directions

The current study is not without limitations; there are exciting revenues for future research. In this study, the authors have analyzed specific challenges in the adoption of technology in SMEs. This study is not location-centric; future researchers can collect primary data from some region or location and thereafter analyze the data to find out whether the same challenges will come as the most prominent challenges in the adoption of technology or not. There can be other challenges that have not been explored yet.

Implications for Business Managers

The Asian Business is primarily dependent on small and medium enterprises. The contribution of SMEs can not be ignored in economic development. In fact, the central governments are expecting much more assistance from small and medium enterprises. The managers of small and medium firms have a challenging time because technology adoption is still in the initial face in many Asian countries. Less knowledge is a barrier for owners and managers. This study will provide directions to SME managers and owners. They can easily judge out the initial level challenges in the adoption of technology. After judging out the initial level challenges, SME managers can effectively think for the proposed solutions to deal with the challenges. In this study, they are getting an insight into the last twenty years of literature to know the various challenges. Businesses have less time to read different types of content and literature. This study can be dealt with as a consultancy report or research paper for those businesses. Further, after reading this paper, the company can explore whether they are facing some type of challenges while adopting the technology in their firms.

The need for technology adoption is much more relevant because many SMEs have lost their status and financial revenues during COVID-19. Those who were thinking that they can survive without technology, it is impossible for them now. Technology is making it possible to work from a remote location and matches the productivity as it was in offline mode. In many Asian countries, firms are facing severe financial times. Switching over to technology can save marketing and promotions costs because traditional marketing is much more costly in comparison to technology-based digital marketing. There is tough competition between Asian countries both inside and outside. Asian countries are competing with each other to perform better and improve their GDP. At the same time, they are also facing pressure from developed countries.

In developed countries, organizations are much more advanced when it comes to technology adoption. In Asian countries, SMEs need to go to the level of developed countries. Technology adoption can help them in reaching that level. SMEs play a role of a catalyst by increasing the competition and heat in the market. SMEs are not only competing in their own business segment, but they are also competing with big multinationals. The continuous struggle for supremacy is going on.

The big multinationals, as well as SMEs, want to win the race of power by producing excellent products and services. SMEs acted as a cushion for different economies during the recession period too.

After going through the study, Asian businesses will be much more comfortable in judging the challenges, and they can look for solutions at various levels to counter those challenges. In Asian countries, governments need to play a central role in helping the organizations to counter the challenges related to cost and training. The government needs to respond to the primary level needs of SMEs in technology adoption. The loan schemes by the governments can help SMEs in dealing with finance-related challenges. Further, different types of programs can be initiated to improve the digital literacy of both employees and employers. The owners and managers also need to understand the motivational level of the employees. Managers have the responsibility to motivate the employees and take them towards practical usage of technology. If they feel confident in the use and adoption of technology, then they can transform this positive energy towards the employees. After going through this study, they can effectively communicate with their employees and discuss the adoption level challenges. They can discuss out the solutions for resolving the adoption level issues as well. The managers need to show their social as well as emotional intelligence in motivating the employees towards technology adoption.

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