

## Technology Adoption Strategies and Challenges of SMEs in Packaging Industry

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### Abstract:

**Purpose** – This paper contributes to the existing literature available on the Technology Adoption model and the challenges faced by the SMEs in implementing e-commerce strategies to expand the business. This study adds to the pool of knowledge on adoption of technology and can lead to collaboration, information sharing, and teamwork among SMEs.

**Design/methodology/approach** – The study uses cross-sectional and qualitative research methods to conduct research on SMEs involved in the packaging industry in PCMC, Maharashtra, India. Non Probability sampling was used to conduct face to face interviews with owners of SMEs from the PCMC area. These interviews were conducted over a period of 3 months to unearth the data by using a semi-structured questionnaire.

**Findings** – The study found that though some of the SMEs had reservations on using the TAM model however they all were in agreement that the model can be effectively used to expand the business. SMEs used a combination of strategies involving online payment mode, website, and efficient IT infrastructure to adopt e-commerce for marketing their product and to gain a competitive advantage in the local and the global market.

**Practical implications** – The study can help the SME owners by providing them various e-commerce strategies that could enable them to respond to business stimuli so that they can align their adaptation to any extraneous change. They can also understand the challenges in implementing e-commerce in their business. The study also suggests a direction to potential policy changes that can help SMEs in adoption of ecommerce strategies.

**Originality/value** – The findings of this study adds to the literature by studying the challenges of SMEs in the packaging industry and studies their awareness, readiness and current strategies adopted and also gives a direction for further study in other sectors and with larger samples.

**Keywords:** Technology Adoption Model, Small and Medium Enterprises, e-commerce, online transaction, IT infrastructure.

### Introduction

According to research published on [www.statistica.com](http://www.statistica.com) the global retail e-commerce sales is projected to reach 6.54 trillion USD by 2022 thus making it the top activity online. E-commerce uses telecommunication networks to share business information and transactions between the parties involved. It is an online platform between buyers and sellers. E-Commerce acts as an interactive mode between a business entity and its customer or between a business entity and its vendors for the placement of the orders (Abiso & Ajagbe, 2018). With the inception of e-commerce, doing business has become easy. It has reduced the boundaries between the parties. The adoption of e-commerce reduces transaction costs and capital investments in stores or showrooms. This allows the firm to increase its profitability and to enjoy high margins of profit.

E-commerce has many advantages and can dramatically change the way business is conducted. It reduces the buying time among the customers. Customers can browse various substitute products, compare them with various parameters and buy whatever they like. Customers can buy their product even if the physical stores are away from them or the products are not available in their locality. Secondly, E-commerce reduces the cost of operation of the firms that are selling their product through stores or showrooms. The firms have to pay a lot of money to maintain the store. They need to pay extra money in the form of store design, repairs, inventory, the salary of the employees, etc. as a result of which the firms do not receive enough return on investment. Firms that use Franchising channels can also take the benefit of e-commerce. They can sell their product directly to the customer with the help of e-commerce even if their franchisee is not present in that area.

Organizations need not spend a lot of money on promoting their product. E-commerce can give various solutions to the firm for promoting their product. There are several quick and affordable ways to market their product. The virtual marketplace of e-commerce has various visual channels- and the business entity (sellers) can show off their product in 3D resolution along with their description. Many e-commerce companies like Amazon, Flipkart, Myntra Ajo, etc use various advertising tools to add info graphics, high resolutions images, and even videos to promote their product. Many e-commerce marketplaces offer customer insight tools that can be used to analyze customers. Business through e-commerce gave flexibility to the customers. Customers can search, compare and place their orders at any time. E-commerce has eliminated geographical boundaries. Customers can buy their products at any time and from any place. These customers can go for repetitive purchases because of the convenience they get. Transactional time is also reduced if you are doing your business through e-commerce.

Small and medium enterprises (SMEs) play a vital role in the economic growth and development of any nation. But in developing nations like India, SMEs are unable to take international opportunities due to a lack of knowledge about the lack of e-commerce strategies and solutions (Agboh, 2015). Many Indian SME business owners perceive e-commerce contributes additional cost in doing business (Ahmad, Abu Bakar, Faziharudean, & Mohamad Zaki, 2015). Lack of proper understanding of the benefits of e-commerce has contributed to the low rate of adoption of e-commerce technology in developing economies (Agboh, 2015). India is the second-most populous country in the world and it is the home of 1.36 billion people. The E-Commerce market is expanding every day attracting an increasing number of retailers to conduct business online.

Many large industries have access to e-commerce to a large extent but SMEs in developing countries show slow growth in the adoption of e-commerce (Agwu & Murray, 2015). According to UNCTAD (Press, 2020), eighty percent of the world population resides in developing countries. E-commerce shows the fastest growth in sales to consumers and crosses border purchases. The USA, China and UK dominate the e-commerce market and 1.4 billion customers purchase their products through e-commerce. In 2018, the total sales value through e-commerce which includes B2B (21 trillion dollars) and B2C (4.6 trillion dollars) was equivalent to be thirty percent of the world GDP. In 2014, the Government of India has announced various initiatives like Digital India, Start-Up India, Skill India, Make in India, etc. If these programs are effectively implemented, they can give an immense boost to the Indian e-commerce industry. According to

(IBEF), E-commerce has brought a revolution in the way of doing business in India. Much of the growth was triggered by the increase in Smartphone and internet penetration. The Indian E-commerce market is likely to grow to 200 billion US dollars by the year 2026 from 38.5 billion dollars in the year 2017.

According to IBEF, in India, there were approximately 6.3 crore MSMEs and the number of registered MSMEs grew 18.5% YoY to reach 25.13 lakh in 2020 which was 21.21 lakh in 2019. MSMEs sector contributes 29% towards national GDP through its domestic and international trade. In the year 2020, Small Enterprises grew at the rate of 22.4% and Medium size enterprises grew at a rate of 16.75%. Most of the SMEs were being encouraged to market their product especially through the Government e-marketplace (GeM), owned and run by the government. All the public sector undertakings (PSUs) source their procurement from this e-commerce website. The main reason for not using e-commerce by SMEs is the delay in the payment from the PSUs. Doing business with PSUs requires a strong financial reserve and adequate working capital to maintain adequate liquidity in the business.

SMEs can play a major role in fulfilling the vision of Indian 5 trillion US dollar economies. These sectors have the potential to serve as a key employment generator. This is the reason why the Government of India is giving more emphasis on entrepreneurial activity. SMEs have the potential to create more employability in the rural areas that can stop the migration of rural peoples to urban areas. The government can stop overcrowding and congestion in the cities by promoting SMEs. To achieve these targets, the government should invest heavily in providing more back-end services to improve the efficiency of SMEs. Low provisioning for R&D and lack of automation are the major hindrances of these sectors to become competent. The government should provide technology-related solutions at a subsidized rate and could give concessions on taxation in the R&D expenditure. This can motivate SMEs owners to improve their performance on the quality and quantity of their output. This can make them competent enough to market their product to large industries domestically or globally located which can enhance the SME's share in export and contribution towards GDP. Though challenges of removing bottlenecks of road and transport infrastructure as well as competition from Chinese suppliers needs a greater effort from the Government.

## **Objective of the Study**

The primary objective of the study is to identify the factors that create an hindrance for the acceptance of the e-commerce strategies among the SMEs and to know the various reasons associated with it.

## **Research Design**

There are many research designs in Qualitative research some of them are narrative, phenomenological, ethnographic, and case study. In this research narrative study was not taken because narrative design requires story telling as the method of data collection (Cash, Hicks, Culley, & Adlam, 2015). Narrative researcher relies on a representation of the participants' written or spoken words to describe and reconstruct the individuals' personal experiences (Lewis, 2015). Narrative research design is not suitable the purpose of the study is to collect and analyze the data related to e-commerce not to examine the life experiences of SMEs owner.

Phenomenological research design is used when researcher tries to understand the experience of the participants' related to certain phenomenon (Sutton & Austin, 2015). This type of research is most popular in scientific research. In this study participants experience related to certain phenomenon was not observed hence, this design is not used. Ethnographic research focuses on the behaviors, beliefs and cultural values of the individuals (Schober, Gerrish, & McDonnell, 2016). This study focuses on the extended observation of a given community of business to portray the culture that administrates the behavioral pattern of the participants and hence ethnographic study cannot be used for this study. In this study multiple case studies was appropriate as the objective of the study was to collect and analyze data from multiple sources, interviews and relevant document of the company. Multiple case study design is used to understand the complex issues in the real business scenario (Harrison, Briks, Miller, & Franklin, 2017). This design also provide deeper insight to the research topic (Park & Park, 2016). As a result of which, multiple case study research design is used to explore the strategies that some SMEs owners had adopted to market their product. In Qualitative research data saturation plays a vital role. Data saturation happens when marginal inputs becomes zero means additional data does not result into new information (Yin, 2018). Data saturation guides the qualitative researcher about the sample size. When no more data given any informative results, the researcher should stop their futher investigation as no new trend could not be observed (Merriam & Tisdell, 2015). In this study the researcher ensures data saturation. Interviews with the SMEs owners in the packaging industry were conducted till no new theme or trends that emerged from the incoming data.

## **Sampling**

There are 27 SMEs firms who are engaged in the packaging industry out of which 13 firms had adopted e-commerce somehow to market their product. Out of these 13 firms' owners, only 9 firm owners had participated in this study. In this study non probability sampling is used. Purposeful sampling is a non random sampling in which sample specific cases are taken into consideration for getting the meaning full data for the study (Rowley, 2014). In this sampling method participants having expertise in their area are taken into consideration (Palinkas, Horwitz, Green, Wisdom, Duan, & Hoagwood, 2015). According to (Yin, 2018), in qualitative study, a sample size of 5 is sufficient for case study research and three participants are sufficient enough to produce meaningful and reliable data for the study. A sample population of at least three participants might provide quality data required to achieve data saturation (Fugard & Potts, 2015). Researcher should collect relevant data from enough participants to minimize the likelihood of bias and would give the best opportunity to achieve data saturation. SMEs owner database was taken from the PCMC industrial directory. SMEs owners who are involved in the day to day management of the business are taken for the study.

## **Data Collection**

In this study semi structured questionnaire was used to collect the data. Semi-structured interviews enable the respondents to respond to the open ended question. (McIntosh & Morse, 2015). In semi-structured interviews, in order to extract useful data for the research, the researcher requires additional preparation of the interview guide, proper selection of the respondents and voluntary consent of the respondents (Castillo-Montoya, 2016). All the respondents had given their verbal consents and also shared their relevant data required for the

study. In order to make this interview more valuable, the researcher obtained secondary data (audited balance sheet) from six participants. Three participants were ready to face the interviews but they showed their unwillingness to share their audited balance sheet. Hence semi-structured one to one face interviews was conducted to explore the SMEs Owners' strategies for the e-commerce adoption strategies. One-to-one interview promotes more knowledge generation than telephonic interview. One-to-one interview with semi-structured questionnaire and concise hand notes of the interview can provide an objective analysis of the respondents (Hadi, 2016). Due to pandemic protocols it was very difficult to conduct face-to-face interviews as a result of which it took almost three months to complete the data collection.

In order to conduct ethical research, researcher must comply with the guidelines of ethical research. According to (Ferreira, Ferreira, & Buttell, 2015), in qualitative research when human elements were involved, the researcher had to make ethical consideration into account. The researcher should address ethical issues by ensuring the protection of all research participants and adhering to the principles of the Belmont Report of 1979 (Jeanes, 2017). There are three basic ethics in the research which involves human elements. These are Principles of the respect for persons, beneficence and justice. These ethical standards lend a hand to the researchers to prevent manipulation or misrepresentation of data from encouraging the pursuit of knowledge and truth, which should be primary objective of any research (Nebeker, Linares-Orozco, & Crist, 2015). For ethical study, the researcher should first take the consent of the participants before the data collection process starts. Researcher must take permission from the participants and provide full disclosure and knowledge before collecting the data. To comply all these, the participants are first contacted, purpose of the study was discussed, approval taken from them and assurance given to them about the non discourse about their firm details.

In qualitative study, researcher should ensure the trustworthiness, consistency and richness of the study through triangulation involving the use of different data collection methods (Fusch & Ness, 2015). For achieving methodological triangulation, researcher reviewed the documents related to the topics. Semi structured questionnaire act as an effective method of data collection as it gives the freedom to the participants to express their issues. After the face-to-face interview, the compilation of the data was done by sorting necessary information from interview transcript and company documents. The complied data were disaggregated and codes or labels are assigned to them. After the completion of compilation, the data was rearranged into graphical and tabular form for data interpretation. Using the tables and graphical pictures a narrative report was prepared.

## **Results**

### **Theme 1: Online Transaction**

Now in the era of digitalization, e-commerce technologies like electronic fund transfer and EDI improves trading partner relationship, reduces cost of operations, makes payment faster with an ease, improves the customer services and increase the business profitability. The first theme Payment mode is the output of question 1-2. All the respondents accepted of using inline payment as a strategy to adopt e-commerce to market their product. Though all the participants

acknowledge online payment as an e-commerce strategy but many of them show their hesitation to use this strategy. Responding to question 1, R1 R4 & R6 said, *“We experience delays in receiving payment due to customer’s lack of trust on online payment. They rely most on cheque and demand draft payment... small proprietorship firms opt for cash payment.”* R2 & R7 said, *“Some customers find challenges on online payment due to limited or no access of internet. These customers restrict themselves to do transaction from the bank only.”* R8 said, *“I restrict myself to do online payment due to phishing attack. I deactivated my online banking.”*

Responding to Question 2, R6 said, *“sometimes our payment gets delayed due to multiple option of payments other than normal bank transactions, which includes google pay, phone pe, airtel money, mob wick BHIM app etc provided by the scheduled bank and telecommunication service providers. Different customers use different payment options and due to some technical problems the payments get delayed.”* R9 said, *“we have given our target audience more accessibility by providing them multiple payment options but most of our customers prefers to deal in cash or any bank instrument. So we have to send our marketing executives to their work place for collecting cash or monetary instrument from them.”* Most of the respondents acknowledge that their customers prefer to pay them in cash. All of the customers were aware of the various digital; they had all the apps installed in their mobile but when it comes to business they prefer to go for cash or any other traditional instruments. R3 said, *“SMEs business owners tackle the challenges in payment by adopting the easiest form of payment, which is by using a mobile money transfer. The interoperability of telecommunication service providers enhanced the use of mobile money transfer on the platforms to make payments by customers.”*

## **Theme 2: Efficient IT infrastructure**

India is considered to be a major exporter of Information Technology (IT) and IT-enabled services (ITES) related services. IT sector grows almost ten percent in the year 2019-20. After the economic reform (1991), Indian IT industry made an unprecedented growth in the world. These companies have set up thousand of centers within the country and extended their presence around 80 countries across the world. Majority of the corporate giants are outsourcing their IT or ITES related services to the Indian IT companies which accounts for fifty five percent of the global service sourcing market (US\$ 200-250 billion) in the year 2019-20 (Sirohi, 2020). According to World Bank data (2019), India has 81.27 mobile phone subscribers per 100. The number fixed broadband users increases from 18.17 to 19.75 millions. Individuals using internet (% of population) has increased from 22(2016) to 34.5(2019). Whereas there was a decline in the fixed telephone subscriber from 21.9 to 21 million customers (Bank, 2019). Above data clearly indicates there is huge increment in the number of subscription.

According to (PTI, 2020), The Indian Internet infrastructure is not ready for the paradigm shift to go online which became mandate by the situation arising due to COVID-19. According to the report, the survey with over 7,600 respondents found that in order to use internet at home, 72.60 percent of the respondents use mobile hotspot, 15 pc use home broadband, 9.68 pc use Wi Fi dongle and 1.85 pc have poor to no internet connectivity. "The data revealed that amongst the respondents, who used home broadband, over 3 pc faced cable cuts, 53 pc faced poor connectivity, 11.47 pc faced power issues and 32 pc faced signal issues. When it came to mobile hotspot, 40.18 pc faced poor connectivity, 3.19 pc faced power issues and 56.63 pc faced signal issues. Signal issues and connectivity are the major issues faced by large number of subscribers.

The above reports clearly indicate that India has inadequate IT infrastructure to cater the demand of the Indian population which creates hurdle in the infusion of e-commerce not only among SMEs but also among the citizens (Kabanda & Brown, 2017). Indian companies have the opportunity to ascertain reliable network and electrical infrastructure for business sustainability (Choshin & Ghaffari, 2017). Government and other stakeholders in the ICT sector should focus on these infrastructural issues; e-commerce implementation will be faster which can results into the economic development. The cost of e-commerce implementation can be minimized. SMEs depend on government readiness and support to expand the ICT infrastructure and the managerial capabilities of the business owners regarding innovation and growth (Ewurah, 2017).

Theme 2, Efficient IT infrastructure materialized with question 3-6. Almost all of the respondents acknowledge that government should support them by improving the IT infrastructure and implementation of E-commerce at cost effective manner. R1 R4 R6 & R9 identified, *“The main hurdle for adopting e-commerce strategies were the high cost of e-commerce tools and inadequate IT infrastructure.”* R3 & R9 said, *“Though government is promoting Digitalization but they are unable to provide the services to the users. We are thinking of introducing 5G in India but our 4G works at a speed of 3G.”* R5 said, *“Investing in modern laptops, desktops and smart phones for employees is a costly affair. We require some support from the government to go online.”* R7 & R8 said, *“Maharashtra government has done a lot to improve the electrical infrastructure. Now we have 24x7 hours supply of electricity except Thursday but when some major fault happened, the department takes lot of time to reinstate the line as a result of which we have to procure a standby generator for smooth functioning of our work.”*

### **Theme 3: Website**

Website becomes a virtual market place for the organization. Customer can directly look into, enquire and do transaction with the help of website. All the participants recognized website as a strategy to adopt e-commerce to market their product. Though all agreed but only four participants have their own websites. Theme 3- Websites emerges from question 6-10. R1 said *“We use website to display all of our products for visualization by our prospective customer.”* R4 & R7 said, *“Hoisting our own website gave us a competitive advantage over our competitors. Our geographical reach had increased, now we are getting orders from outside Maharashtra.”* R5 said, *“website is successful medium to market our product. We have designed our website with more interactive way for our prospective customer. This helps us much during the pandemic period. Website help us to maintain the pandemic protocols and also done our business through online media.”* Five of the respondents do not have any website. According to them hoisting a website is a costly affair. Most of their customers are within Pune and nearby Pune. R2, R8 & R9 said, *we prefer to give our advertisements on just dial and indiamart. This is cost effective and customers mostly use these websites to search for vendors. These companies charge a nominal price for promoting our product. We provide them the requisite information rest are taken care by them. By doing this we minimize our liability.”*

## **Findings**

TAM model is used by researcher to understand the users’ decisions to accept new technology depending on perceived usefulness and perceived ease of use. There is a mixed reaction towards

the acceptance of TAM model. The findings of this study indicate that some SMEs are ready to adopt e-commerce for marketing their product by implementing strategies based on TAM. Some of the respondents restrain themselves for accepting the TAM model. They are very comfortable with the traditional method of doing business. All the respondents agreed that TAM can help them for expanding their business but still they hesitate to implement this fully on their organization. All the participants used a combination of strategies involving online payment mode, website and efficient IT infrastructure to adopt e-commerce for marketing their product and to sustain them in the competitive business. With the successful implementation of e-commerce SMEs owner could get competitive advantage in the local and global market. They can expand their geographical reach without expansions. The results of the study could help the SMEs owner who are seeking to adopt e-commerce strategy by contributing to collaboration, information sharing and team work among themselves. The results of the study can help the SMEs owners by providing them various e-commerce strategies which could enable them to respond to business stimuli so that they can show their adaptation to any extraneous change.

Indian government is promoting Atmanibhar Bharat to create more employability. They have started a lot of schemes like Prime Minister Employment Generation Program (PMEGP), Credit Guarantee Trust Fund for Micro & Small Enterprises (CGTMSE), Credit Linked Capital Subsidy for Technology Up gradation (CLCSS) etc for the expansion of the SMEs. SMEs play a vital role in the economic growth of a developing country. SMEs are considered to be the backbone of Indian Economy. They are contributing

Forty percent of the workforce employability and forty five percent to the manufacturing output (Goyal, 2013). SMEs business owners can expand their business by adopting e-commerce strategies which can lead to more revenue generation. They can go for expansion which might engage more staff, thereby providing job opportunities for the local community where the company is operating. The results of the study can bring some positive social change by implementing e-commerce strategies in their organization. They can understand the challenges of implementing e-commerce and can gain knowledge of various strategies for adopting e-commerce.

In this study it was found that most of the SMEs owners knew about various tools of e-commerce but they did not have in depth knowledge of it. Though SMEs are contributing a lot for the economic development of India but it is not sufficient enough. There lot of opportunities unexplored in this field. Most of the owners do not recognize the advantages of using e-commerce because they assume that implementation of e-commerce will increase cost for them. Government should encourage these firms by proving certain subsidies on implementing e commerce. If these SMEs expand their business, it will be a win -win situation for government as well as firm. SMEs owners can sustain their business; their firm will create more employability and pay more taxes to the government. More employability can create more demand in the market as the purchasing power of the citizens will increase. Lack of knowledge and competence to adopt e-commerce strategies results into low adoption rate among SMEs owner.

## **Conclusion**

The findings of this study indicate that some SMEs are ready to adopt e-commerce for marketing their product by implementing strategies based on TAM but most of the respondents restrain themselves for accepting the TAM model. They were comfortable with the traditional method of



doing business. All the respondents agreed that TAM can help them for expanding their business but still they hesitate to implement this fully on their organization. With the successful implementation of e-commerce SMEs owner could get competitive advantage in the local and global market. They can expand their geographical reach without expansions. The results of the study could help the SMEs owner who are seeking to adopt e-commerce strategy by contributing to collaboration, information sharing and team work among themselves. The results of the study can help the SMEs owners by providing them various e-commerce strategies which could enable them to respond to business stimuli so that they can show their adaptation to any extraneous change. SMEs business owners can expand their business by adopting e-commerce strategies which can lead to more revenue generation. They can go for expansion which might engage more staff, thereby providing job opportunities for the local community where the company is operating. SMEs owners knew about various tools of e-commerce but they did not have in depth knowledge of it. Though SMEs are contributing a lot for the economic development of India but it is not sufficient enough. There lot of opportunities unexplored in this field. Most of the owners do not recognize the advantages of using e-commerce because they assume that implementation of e-commerce will increase cost for them. Government should encourage these firms by proving certain subsidies on implementing e commerce.

### **Limitations and Further Scope of Study**

The purpose of this study was to identify the various e-commerce strategies implemented by the SMEs owner engaged in the packaging industry in PCMC area. In developing countries like India, most of the SMEs use limited e-commerce strategies to market their product. The findings of the research give a road map to the researcher to further explore regarding other e-commerce strategies and the factors which create hindrances in adopting e-commerce strategies. Main limitation of the study was the small sample size of nine SMEs owner engaged in the packaging industry. Further, Researcher can use larger sample size and can generate more themes. Researchers can go for quantitative research to explore the impact of these factors on the acceptance of e-commerce strategies. This study can be used in the other sectors to identify the various themes. This study was cross-sectional and qualitative; researcher can use longitudinal and quantitative or mixed strategy to find other strategies. This study was conducted in PCMC area of the Pune district which is considered to be an IT hub in India. Researcher can use the method in non IT hub areas to find other themes and factors which create hindrance in adopting e-commerce strategies.

Researcher has limited knowledge and competency in the field of e-commerce. This study was limited to researcher's background as a business practitioner and personal's belief regarding the use of e-commerce in marketing their product. Findings were found out by the accurate interpretation of the participants' responses to the semi structured interviews. Researcher recommends that further study should involve experts from e-commerce and practitioner of e-commerce to get deep insight to the topic which might have missed in this study

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