

TECHNOLOGY ADOPTION BY INDIAN WOMEN ENTREPRENEURS: AN ENABLER OR DIFFERENTIATOR?

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ABSTRACT

Indian Women entrepreneurs have their own set of characteristics and challenges owing to unique social and familial environments. Research has indicated that technology adoption can be a game-changer for small and medium enterprises. This paper reviews the existing literature in the field to understand the implications, and characteristics of technology adoption by SMEs. Technological innovations which have been adopted by SMEs to enhance growth, efficiency, and sustainability are social media, E-commerce, cloud computing, Robotics, etc. This paper attempts to explore the adoption of these technologies by Indian women entrepreneurs. Lastly, it attempts to understand whether the technology adoption is an enabler or differentiator for these entrepreneurs.

Keywords: Technology Adoption, Indian Women Entrepreneurs, Social-Media, E-commerce, Industry 4.0.

INTRODUCTION

Entrepreneurship has been said to be the backbone of any economy. It brings much-needed income, GDP, employment, and regional balance to any developing economy. Most of the developing economies have gender imbalances when it comes to entrepreneurship. Indian Government has been taking multiple actions to encourage women entrepreneurship in the country. The GOI has defined women entrepreneurship as “an enterprise owned and controlled by women having a minimum financial interest of 51 percent of the capital and giving at least 51 percent of the employment generated in the enterprise to women. Indian Government has taken many initiatives to encourage women entrepreneurship. There are multiple schemes that provide loans and technical assistance to women, especially rural women.

Indian Women Entrepreneurs

Indian women entrepreneurs have been known to go more for traditional businesses. However, recently the scenario is changing. Indian women entrepreneurs have started exploring fields like information technology, advertising, etc. The reason for this can be traced to changing environmental conditions in India. For instance, the sociocultural environment in India has changed drastically over the last couple of decades. The socio-cultural environment changes have

brought many changes in women entrepreneurship. Indian society has started providing higher education to females and accepted their ambitions and aspirations which is a positive factor for women entrepreneurship (Koneru, 2017).

Women entrepreneurs face multiple challenges on their path to becoming successful. One major obstacle is a patriarchal society and gender bias (Porter & Nagarajan, 2005). Women in India are generally supposed to be the primary caregiver in a family. They are supposed to take care of the elders, sick and young children. Traditional cultural and religious factors challenge women entrepreneurs (Cho & Chaudhuri, 2020). Societal factors have a huge impact on the success of women entrepreneurs (Roy, Mohapatra, & Banerjee, 2022). In the initial stages of entrepreneurship, societal factors like poor educational opportunities for females, poor societal status, lack of independence, lack of safety and limited spatial mobility and lack of vocational training opportunities create challenges for females. As the women entrepreneur becomes successful her family support and social network create a web of strength around her. The support of her parents, in-laws, husband, immediate family, and friends plays a big role in her success.

Personal, social, and environmental factors greatly impact the motivation level of women entrepreneurs (Lenka & Agarwal, 2017). The motivational factors behind entrepreneurial intentions have been studied by many researchers (Chhabra, Raghunathan, & Rao, 2020). The factors are generally divided into push and pull factors. Pull factors constitute parameters like passion, hobby, independence, success, experience, technical expertise, and profit whereas push factors constitute parameters like poverty, death of a spouse, dissatisfaction with a current job, etc.

Financial factors have a huge significance in the growth of women entrepreneurs (Jyoti, Sharma, & Kumari, 2011). Most of women tend to neglect saving money or keep their financial assets in their own name. In India, lots of women do not have bank accounts in their own names. The most common reason for this is illiteracy and awareness. In case of the death of a spouse, they have to depend on their in-laws to get access to their own savings. Sometimes, they also tend to hand over the gifts and jewelry received in the marriage to their in-laws. Improved education, better laws, improved financial literacy, and other socio-political factors are bringing a change in women entrepreneurship. The high cost of acquiring a loan is one more hurdle in this field. There have been a lot of positive changes have happened in the economy recently. The credit availability for women entrepreneurs has improved in general. Women entrepreneurs in the informal sector are gradually getting better access to financial loans, which has a huge impact on their success (Williams & Gurtoo, 2011).

The lack of exposure to technical education and skill enhancement opportunities has also been cited as a challenge to women entrepreneurs. Most females are not given access to higher education in technical fields and many a time, the family persuades them to go for the more traditional type of educational courses. This leads to their low level of knowledge in the field. Usually, Indian society discourages females from doing a job. This, in turn, results in a lack of experience for women entrepreneurs.

Technology Adoption in Indian SMEs

Technological innovations which have been adopted by SMEs to enhance growth, efficiency, and sustainability are social media, E-commerce, Industry 4.0, Robotics, etc (Zamani, 2022). SMEs can create value for their firm through the adoption of these innovative tools by getting the benefits of reduced costs and efforts by substituting human labour and tedious effort

with state-of-the-art automated technologies (Bhalerao, Kumar, & Pujari, 2022). Researchers in many countries have studied the adoption of technologies like social media (SM), E-Commerce and Industry 4.0 by SMEs. The majority of research has studied the facets affecting the decision to adopt new innovations along with exploring the challenges faced by the SMEs while doing so. The technological aspects are studied and examined for technological adoption in SMEs. Industry 4.0 technologies have been found to be beneficial in improving productivity for SMEs (Chang, Chang, & Lu, 2021). The benefits range from better customer relationships, to enhanced productivity and better employee engagement (Masood & Sonntag, 2020).

S-commerce, is social commerce, that covers social media platforms for promotion and sales of products and services. For e.g., Facebook, Instagram, Twitter, Pinterest, and WhatsApp S-commerce denotes the social media platforms that enable the purchase and marketing of goods and services. It includes the combination of parameters on SM cited for buying, giving feedback regarding the product or service, and the shopping experience. S-Commerce contains and highlights user-generated content, connections, and other interactive features that are made public over the connections on the internet. The adoption of this technology creates value for SMEs (Derham, Cragg, & Morrish, 2011). The utility of social media in marketing goods and services and also, in connecting with customers and influencing them to try the goods and services has been very impressive (Kumar & Pandey, 2018). The customers do not need to leave the site to shop for the products and can also leave their reviews on the same site. Indian SMEs have started adopting social media for better performance (Chatterjee & Kar, 2020). Social media embraces innovative ways to engage customers and this can be very beneficial for the SMEs (Subagja, Ausat, & Suherlan, 2022). SM creates benefits like better customer reach, cost-effectiveness, and better technical knowledge (Derham, Cragg, & Morrish, 2011). In totality, a firm's performance is said to grow and improve post the adoption of social media (Ahmad, Bakar, & Ahmad, 2018). There are many challenges that are faced by SMEs during the process of social media adoption (Masood & Sonntag, 2020) (Pandey, Kumar, Pujari, & Arora, 2023). One of the major ones is the lack of awareness of the benefits accruing from the adoption of social media. The cost of adoption of social media is also considerably high for some SMEs and this could prove to be a hurdle in the adoption (Kumar & Ayedee, 2018). The lack of required skills is one more challenge faced by the SMEs.

E-commerce, refers to the platforms which are available over the internet and are used for the purchase and selling of products goods, and services. It has gained popularity over time due to the ease with which customers can browse, shop and do business. The convenience of time, location, and ease of accessibility to national and international brands. E-commerce contains a range of actions, including online shopping, electronic payment, and online banking. There are multiple challenges faced by the SMEs in adoption of e-commerce. The most common systems are B2C which is Business-to-consumer involving the business and individual customers, B2B which is Business-to-business involving the business and business, C2C which is Consumer-to-consumer involving the individual customers to individual customers, and C2B which is Consumer-to-business involves individual consumers selling products and services to business (Shahjee, R., 2016). E-commerce adoption has been known to be beneficial for firms and is impacted by many technological, organizational, and environmental factors (Nyoro, Kamau, Wanyembi, Titus, & Dinda, 2015). There are multiple factors that influence the technology adoption by SMEs (Setiyani & Rostiani, 2021). The lack of skills required to adopt new technology is a major hurdle for SMEs (Kapurubandara & Lawson, 2006).

Industry 4.0, popularly termed as Fourth Revolution involves the current trend of automation and technologies for the development of Artificial Intelligence (AI), the Internet of Things (IoT), autonomous robots, and cloud computing(cc). The main parameters of Industry 4.0 contain the use of smart manufacturing, the combination of physical and digital systems, and the capability to analyze and utilize large amounts of data in real-time. It utilizes huge data sets to analyze and combine physical and digital systems. Technologies like AI has lots of benefits that are being utilized (Kumar, Pujari, & Gupta, 2021) . The aim of Industry 4.0 is to generate better flexibility and reaction in the manufacturing process which adapts to dynamic market environments and demands (Monika, Apoorva, & Kumar Anuj, 2022).

Technological Adoption by Indian Women Entrepreneurs

In this era of technology, we have seen technology as a gamechanger for all businesses. The technology adoption has been known to be enabler for any entrepreneur, especially female entrepreneurs. Technology brings efficiency and increased productivity for businesses. The skills required to adopt technologies like ICT and comfort level with these technologies make a huge difference to the entrepreneurial intention for women entrepreneurs (Shukla, Kushwah, P., & Sharma, 2021). The adoption of technology creates a booster for growth and sustainability for any entrepreneurial venture. It also brings innovation. Adoption intention results in high entrepreneurial orientation which supports micro-entrepreneurship (Chatterjee, Gupta, & Upadhyay, 2020). The incidences of technopreneurship have increased with the increased use of ICT and other digital technologies (Irene, 2019). Indian women entrepreneurs are looking forward to improving their business prospects by adopting technologies (Salam, 2018).

RESEARCH METHODOLOGY

The research methodology for this paper is conducting an in-depth literature review and interview method. The fifteen respondents were female entrepreneurs who were invited for semi-structured interviews containing both, structured and unstructured questions. Business sector of these fifteen respondents were catering, boutique, food delivery, real estate, agricultural products etc. These entrepreneurs were interviewed regarding their perceptions and experiences regarding technology adoption.

Data Analysis

The first female entrepreneur had a boutique and she extensively used social media for marketing. When asked whether she considered ‘Technology adoption as an enabler’ answered affirmatively and said she was reaping benefits in terms of better brand visibility, customer reach, and improved access to suppliers. One of the female entrepreneurs felt her use of online platforms like Google Meet has enabled her to get most of her work done online. This allows her to balance her family and work responsibilities in a better way. This also gave benefits like lesser costs, better safety, and independence. An owner of a food business felt that her data management has improved extensively after using cloud computing.

There were few respondents who felt that poor technology adoption has become a differentiator between them and their male competitors. An entrepreneur in the real estate business mentioned that most of her male peers were using virtual reality to showcase their buildings. She felt that her resistance to adopting these technological innovations has reduced her

market share. She mentioned factors like cost and lack of required expertise for not adopting the technology. One more entrepreneur in the agriculture business felt that her lack of awareness has resulted in her poor connect with suppliers and customers.

Out of fifteen female entrepreneurs felt that technology was definitely an enabler which has allowed them to scale up their businesses and create better value for their customers through feedback, reviews, orders and delivery scheduling.

Technology as an Enabler for Women Entrepreneurs

Technology has become an enabler for modern women entrepreneurs. Rather than being a differentiator. It is helping women entrepreneurs to overcome obstacles like limited mobility and lack of safety etc. With help of technological tools like Instagram, WhatsApp, Facebook and cloud computing, Indian women entrepreneurs are reaching out to their customers and suppliers in faster, cheaper and safer ways. Adoption of technology gives women entrepreneurs a solution to societal malice like lack of safety, hurdles in mobility, dependence on males in the family or firms to connect with the stakeholders. It creates better opportunities for these women to perform better and face the challenges (Suseno & Abbott, 2021). Technologies like ICT are like catalyst for uplifting growth status of women entrepreneurs. Platforms like Zoom, Microsoft teams and google meet have aided these entrepreneurs to have online meetings in place of offline meetings. Integration of such technologies has shaped the growth avenues for female entrepreneurs by adding to knowledge sharing, networking and e-commerce functions (Goswami & Dutta, 2018). The utility of social platforms has increased multi-folds in the recent times and it has contributed immensely to the growth of women entrepreneurs (Sathya & Prabhakar, 2018). These social platforms have enabled Indian women entrepreneurs to stay connect with existing customers and reach out to newer customer segments. This has enhanced their marketing performance. It helps to reduce their marketing costs and contact their tech savvy customers on the platforms of their preference. One more study mentions that use of these technologies has become crucial for the survival of entrepreneurial ventures (Gnanasaranya, 2017).

Technology as a Differentiator for Women Entrepreneurs

There are multiple factors that impact the adoption of technologies like Cloud computing, E-commerce, etc. by women entrepreneurs in India. The perceived difficulty, perceived utility (PU), effort expectancy, and perceived ease of use (PEOU) are a few of the important ones. Women entrepreneurs are lacking in their adoption of these technologies and there is an imperative need to encourage technology adoption for their success and stability in the competitive markets (Dutta, 2020). Low level of business performance by women entrepreneurs results from low access to the internet and poor awareness. This results in poor growth and stability of the business (Dsouza, 2023). Most women entrepreneurs compared to their counterparts have less awareness, information, and skills to adopt these latest technologies. The result is a difference between the performance of women entrepreneurs and male entrepreneurs. Poor adoption in the areas like financial technology for e.g., integration with payment gateways, app-based payments and links, cyber security, and data protection are still the major differentiators between male and female entrepreneurs in India.

CONCLUSION

In the era of digitalization, women entrepreneurs cannot ignore the fact that technology adoption acts as a medium of competitive advantage. It aids firms to become more competent and competitive. Data management through technology ensures seamless, protected, and tailored data sharing and better data management. Application, adoption of technology, and modernization can aid in constant business innovation; reduced physical mobility constraints in a completely virtualized environment and also accelerate business growth. Women entrepreneurs need to cross this hurdle of poor technology adoption to achieve the goals of improved marketing and the overall performance of their firms. Building online existence of the firm can enhance women entrepreneurs brand visibility and create a robust digital identity, expand customer engagement, enhance awareness among all stakeholders. The policymakers must incorporate technology training programs and digital awareness/ training for female entrepreneurs. This will enable these entrepreneurs to come at par with their male counterparts. Technology empowerment is the need of the hour. This will ensure the inclusion of these entrepreneurs in the growth story of the emerging Indian economy.

REFERENCES

- Ahmad, S.Z., Bakar, A.R., & Ahmad, N. (2018). Social media adoption and its impact on firm performance: the case of the UAE. *International Journal of Entrepreneurial Behavior & Research*.
- Bhalerao, K., Kumar, A., & Pujari, P. (2022). A Study of Barriers and Benefits of Artificial Intelligence Adoption in Small and Medium Enterprise. *Academy of Marketing Studies Journal*, 26, 1-6.
- Chang, S.C., Chang, H. H., & Lu, M.T. (2021). Evaluating industry 4.0 technology application in SMES: Using a Hybrid MCDM Approach. *Mathematics*, 9(4), 414.
- Chatterjee, S., & Kar, A.K. (2020). Why do small and medium enterprises use social media marketing and what is the impact: Empirical insights from India. *International Journal of Information Management*, 53(102103).
- Chatterjee, S., Gupta, S.D., & Upadhyay, P. (2020). Technology adoption and entrepreneurial orientation for rural women: Evidence from India. *Technological Forecasting and Social Change*, 160, 120236.
- Chhabra, S., Raghunathan, R., & Rao, N.M. (2020). The antecedents of entrepreneurial intention among women entrepreneurs in India. *Asia Pacific Journal of Innovation and Entrepreneurship*, 14(1), 76-92.
- Cho, Y. L., & Chaudhuri, S. (2020). Women entrepreneurs in Asia: Eight country studies. *Advances in Developing Human Resources*, 22(2), 115-123.
- Derham, R., Cragg, P., & Morrish, S. (2011). "Creating Value: An SME And Social Media. PACIS 2011 Proceedings, (p. 53).
- Dsouza, A. &. (2023). Factors Affecting Women Entrepreneurs' Success: A Study of Small and Medium-Sized Enterprises-A Review. *International Journal of Case Studies in Business, IT, and Education*, 7(2).
- Dutta, S. &. (2020). Modified UTAUT2 to Determine Intention and Use of E-Commerce Technology Among Micro & Small Women Entrepreneurs in Jharkhand, India. In *Re-imagining Diffusion and Adoption of Information Technology and Systems: A Continuing Conversation: IFIP WG 8.6 International Conference on Transfer and Diffusion of IT, TDIT 2020* (pp. 688-701). Tiruchirappalli, India.: Springer International Publishing.
- Gnanasaranya, S. (2017). Adoption of ICTs by Women Micro-entrepreneurs in Rural Areas-A Study in Dindigul District, Tamil Nadu, India. *International Journal of Knowledge Management and Practices*, 5(2), 16.
- Goswami, A., & Dutta, S. (2018). Empowering Women Entrepreneurs in India With ICT Applications. In *Handbook of Research on Women's Issues and Rights in the Developing World*. In *Handbook of Research on Women's Issues and Rights in the Developing World* (pp. 269-280)). IGI Global.
- Irene, B. N. (2019). Technopreneurship: a discursive analysis of the impact of technology on the success of women entrepreneurs in South Africa. In *Digital Entrepreneurship in Sub-Saharan Africa: Challenges, Opportunities and Prospects* (pp. 147-173). Springer.
- Jyoti, J., Sharma, J., & Kumari, A. (2011). Factors affecting orientation and satisfaction of women entrepreneurs in rural India. *Annals of innovation & entrepreneurship*, 2(1), 5813.

- Kapurubandara, M., & Lawson, R. (2006). Barriers to Adopting ICT and e-commerce with SMEs in developing countries: an Exploratory study in Sri Lanka. In Proceedings of the 2006 Collector Conference on Electronic Commerce., 82, pp. 2005-2016. Sydney.
- Koneru, K. (2017). Women entrepreneurship in India-problems and prospects.
- Kumar, A., & Ayedee, N. (2018). Social media tools for business growth of SMEs. *Journal of Management*, 137-142.
- Kumar, A., & Pandey, A. (2018). Usage of social media as an integrated marketing tool in business. *Journal of Management*, 123-128.
- Kumar, A., Pujari, P., & Gupta, N. (2021). Artificial Intelligence: Technology 4.0 as a solution for healthcare workers during COVID-19 pandemic. *Acta Universitatis Bohemae Meridionalis*, 24(1), 19-35.
- Lenka, U., & Agarwal, S. (2017). Role of women entrepreneurs and NGOs in promoting entrepreneurship: case studies from Uttarakhand, India. *Journal of Asia Business Studies*, 11(4), 451-465.
- Masood, T., & Sonntag, P. (2020). Industry 4.0: Adoption challenges and benefits for SMEs. *Computers in Industry*, 121, 103261.
- Monika, A., Apoorva, B., & Kumar Anuj, P.P. (2022). Scope of industry 4.0 components in manufacturing SMEs. In *Computational Intelligence in Manufacturing* (pp. 161-174). Woodhead Publishing.
- Nyoro, M., Kamau, J.W., Wanyembi, G.W., Titus, W. S., & Dinda, W. A. (2015). Review of Technology Acceptance Model usage in predicting e-commerce adoption. *International Journal of Application or Innovation in Engineering & Management*, 4(1), 46-49.
- Pandey, A., Kumar, A., Pujari, P., & Arora, M. (2023). Strategic Technology Adoption of social media in Indian SMEs. *International Management Review*, 19(1), 44-53.
- Porter, E. G., & Nagarajan, K. V. (2005). Successful women entrepreneurs as pioneers: Results from a study conducted in Karaikudi, Tamil Nadu, India. *Journal of Small Business & Entrepreneurship*, 18(1), 39-52.
- Roy, S., Mohapatra, S., & Banerjee, D. (2022). I mean business: exploring women entrepreneurs' journey in India from an emancipation perspective. *Journal of Entrepreneurship in Emerging Economies*, 14(6), 1072-1095.
- Salam, A. (2018). Impact of digitization on women entrepreneurs. *International Journal on Recent Trends in Business and Tourism*, 2(4), 35-38.
- Sathya, P., & Prabhakar, S. M. (2018). A study on the use of Whatsapp for E-commerce by women entrepreneurs with special reference to women clothing and accessories. *Research Journal of Humanities and Social Sciences*, 9(1), 95-99.
- Setiyani, L., & Rostiani, Y. (2021). Analysis of E-Commerce Adoption by SMEs Using the Technology - Organization - Environment (TOE) Model: A Case Study in Karawang, Indonesia. *International Journal of Science, Technology & Management*, 2(4), 1113-1132.
- Shukla, A., Kushwah, P., J. E., & Sharma, S. K. (2021). Role of ICT in emancipation of digital entrepreneurship among new generation women. *Journal of Enterprising Communities: People and Places in the Global Economy*, 15(1), 137-154.
- Subagja, A.D., Ausat, A. M., & Suherlan, S. (2022). The Role of Social Media Utilization and Innovativeness on SMEs Performance. *JURNAL IPTEKKOM (Jurnal Ilmu Pengetahuan & Teknologi Informasi)*, 24(2), 85-102.
- Suseno, Y., & Abbott, L. (2021). Women entrepreneurs' digital social innovation: Linking gender, entrepreneurship, social innovation and information systems. *Information Systems Journal*, 31(5), 717-744.
- Williams, C.C., & Gurtoo, A. (2011). Evaluating women entrepreneurs in the informal sector: Some evidence from India. *Journal of Developmental Entrepreneurship*, 16(3), 351-369.
- Zamani, S. Z. (2022). Small and Medium Enterprises (SMEs) facing an evolving technological era: a systematic literature review on the adoption of technologies in SMEs. *European Journal of Innovation Management*, 25(6), 735-757.

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