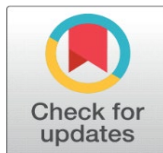
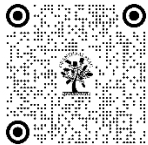


DIGITAL TRANSFORMATION TO SPUR WOMEN EMPOWERMENT IN MSMEs: A CASE STUDY APPROACH

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ABSTRACT

Empowered women are important to uplifts their economic, social, and political status. Women entrepreneurship refers to women who initiate, organize, manage, and operate business enterprises. As Jawaharlal Nehru aptly put it, “To awaken the people, it is the women who must be awakened. Once she is on the move, the family moves, the village moves, the nation moves”. Despite women constituting nearly 50% of the world’s population, India looks a comparatively lower female population than males. Socially, women are often not treated as equals to men. However, in modern society, they are breaking barriers and engaging in miscellaneous activities, including business ventures. Micro, Small, and Medium Enterprises (MSMEs) play a vital role in industrial development. According to the Ministry of MSME, this sector employs over 110 million people through more than 63 million enterprises, significantly contributing to India’s Gross Domestic Product (GDP). MSMEs account for approximately 30% of the GDP and are crucial drivers of economic growth.

This paper would explore how digital transformation in MSMEs has empowered women entrepreneurs by providing them with new opportunities for growth, market access, and financial independence. The study could include case studies of successful women-led MSMEs that have embraced digitalization.

Keywords: Women Empowerment, Digital Transformation, MSMEs, Case Study

1. INTRODUCTION

The connection of women empowerment and digital transformation within the Micro, Small, and Medium Enterprises (MSME) sector represents a critical area of study, particularly in the context of developing economies. MSMEs play a crucial role in the economic development of nations by driving innovation, generating employment, and contributing to GDP. In India, for instance, MSMEs provide employment to over 110 million people and account for nearly 30% of the country’s GDP. However, despite their significance, MSMEs often face significant challenges, including financial constraints, limited access to markets, and a lack of technological resources. These challenges are even more noticeable for women entrepreneurs,

who traditionally come across from additional barriers such as gender discrimination, limited restricted social mobility and access to finance.

Digital transformation, it is the incorporation of digital technologies into all areas of a business, fundamentally changes how businesses operate and deliver value to customers. For MSMEs, digital transformation involves a range of technological innovations, from the adoption of e-commerce platforms and digital payment systems to the use of cloud computing, data analytics and artificial intelligence. The advent of these technologies offerings a unique opportunity to overcome some of the traditional barriers that faced by women in the MSME sector. By leveraging digital tools, women entrepreneurs can enhance operational efficiency, expand market reach, and improve their access to financial services. Moreover, digitalization can empower women by enabling them to build networks, gain knowledge, and participate more efficiently in the economic life of their communities.

The role of digital transformation as a catalyst for women empowerment in MSMEs is particularly significant in developing countries, where gender disparities in business and economic participation are more pronounced. In these regions, digital technologies can serve as powerful tools for social change, providing women with the means to overcome systemic barriers and achieve economic independence. However, the impact of digitalization on women-led MSMEs is not uniform and can vary based on factors such as access to technology, digital literacy, and socio-cultural dynamics. Therefore, understanding the nuances of this relationship requires an in-depth analysis of specific cases where digital transformation has been successfully implemented in women-led MSMEs. Increasing women's participation in MSMEs is a key development goal. It aims to reduce poverty, improve family health, and empower women economically.

This paper aims to explore the role of digital transformation as a catalyst for women empowerment in MSMEs through a case study approach. By examining real-world examples of women entrepreneurs who have successfully adopted digital technologies, this study seeks to identify the key drivers, challenges, and outcomes associated with digitalization in the MSME sector. The research will focus on the socio-economic impact of digital transformation on women entrepreneurs, including its effects on business growth, financial inclusion, and social mobility. Furthermore, the paper will analyze the enabling factors that have contributed to the success of digital initiatives in these businesses, such as government support, access to digital infrastructure, and the availability of training programs.

Through this case study approach, the paper will provide insights into the broader implications of digital transformation for women empowerment in the MSME sector, offering valuable lessons for policymakers, business leaders, and development practitioners. By highlighting the successes and challenges faced by women entrepreneurs in the digital age, this research will contribute to a deeper understanding of how digitalization can be harnessed to promote gender equality and drive sustainable economic development in the MSME sector.

2. REVIEW OF LITERATURE

The concept of digital transformation as a means to empower women, particularly within the MSME sector, has garnered significant attention in recent years. This literature review synthesizes existing research on the relationship between digital transformation and women empowerment in MSMEs, exploring key

themes such as the barriers to digital adoption, the socio-economic benefits of digitalization, and the role of government and policy interventions.

2.1. DIGITAL TRANSFORMATION AND MSME GROWTH

Bharadwaj et al. (2013) highlights the significant impact of digital transformation on the growth and sustainability of small and medium enterprises (SMEs). They argue that digital tools are allowing SMEs to compete with larger corporations by improving market access and reducing operational costs. E-commerce platforms, social media, and digital payment systems enable SMEs to reach a broader customer base and streamline operations. These tools help SMEs to expand their market reach, increase efficiency, and drive business growth. Digital transformation is presented as vital for SMEs to get sustain long-term success and overcome traditional barriers in a competitive environment.

Ghobakhloo (2018) argues that digital MSMEs is more than a technological upgradation, it represents a tactical shift that basically changes how businesses create and deliver goods and services. Many MSMEs, particularly those led by women, face significant barriers to digital adoption, including inadequate digital skills, limited financial resources, and lack of access to essential infrastructure. These challenges can aggravate the digital divide. Ghobakhloo emphasizes the need for targeted interventions, such as financial support and digital literacy programs, so that MSMEs can benefit from digital transformation and achieve sustainable growth.

The McKinsey Global Institute (2015) highlights the challenges in developing economies to transformation of a business digitally, where inadequate digital infrastructure and socio-cultural barriers can hinder the progress. The World Bank (2020) further emphasizes that these barriers disproportionately affect women, limiting their participation in the digital economy, hindering inclusive growth and development in these regions. It requires targeted efforts to promote gender equality and improve infrastructure in the digital space.

2.2. WOMEN EMPOWERMENT THROUGH DIGITALIZATION

The United Nations (2019) highlights that digital technologies can empower women by opening new avenues for entrepreneurship, education, and civic engagement. In the realm of MSMEs, digitalization helps women entrepreneurs overcome challenges like restricted market access, financial barriers, and societal limitations. By leveraging digital platforms, women can market their products and services globally, enhancing their business visibility and potential revenue. This process not only drives economic growth but also fosters greater inclusion and equality for women in the business world.

Bhardwaj and Goundar (2020) observe the achievement of women entrepreneurs in India who have used e-commerce platforms like Amazon and Etsy to grow their businesses beyond local markets. These platforms not only offer opportunities for networking but also facilitate market expansion, knowledge sharing, and community building, that further boost business prospects. Additionally, digital financial services, such as mobile banking and digital payment systems, are vital in promoting financial inclusion for women entrepreneurs, allowing them to access and manage their financial resources more efficiently.

A study by Demirgüç-Kunt et al. (2018) revealed that digital mobile banking has significantly boost women entrepreneurs' access to credit and savings, which are

crucial for business expansion. By decreasing dependence on traditional banking, where gender biases may exist, digital financial services empower women to manage their finances more autonomously.

2.3. BARRIERS TO DIGITAL ADOPTION FOR WOMEN-LED MSMEs

The International Telecommunication Union (2020) reports that women-led MSMEs encounter significant obstacles in adopting digital technologies and there is digital gender divide that poses a major challenge to women in accessing and using digital tools, mainly in developing countries women in these regions are 14% less likely to own a mobile phone and 23% less likely than men to use mobile internet. These disparities hamper women's ability to involve efficiently in the digital economy and limit their capacity to leverage the opportunities those offered by digital transformation. Addressing this divide is the key for ensuring that women can equally benefit from the advancements in digital technologies, which are crucial for business growth and their empowerment.

Asiedu (2019) highlights that Socio-cultural factors significantly limit women's access to education and digital skills training, which are crucial for efficiently using digital tools. In male-controlled societies like India, these challenges are added more resistance from family members or community leaders who may obstruct or discourage women's participation in digital entrepreneurship. This societal resistance not only limits women's ability to engage in digital transformation but also spreads the existing barriers to their economic empowerment. For Addressing these socio-cultural hindrances, it is important to fostering a more comprehensive environment where women can fully harness the benefits of digitalization for their entrepreneurial endeavours.

Klapper & Parker (2010), reveal that financial barriers are critical obstacle to digital adoption for women-led MSMEs. Generally, women entrepreneurs have less access to capital as compared to their male counterparts. This financial disparity hinders their ability to acquire and implement digital tools and services so it become more challenging for them to invest in essential digital infrastructure. which are often costly and may be prohibitive for small businesses, especially in low-income environments. As a result, women-led MSMEs may struggle to keep pace with digital advancements, it limits their competitiveness and growth potential in the market.

2.4. THE ROLE OF GOVERNMENT AND POLICY INTERVENTIONS

According to Bala Subrahmanya (2015), explore that supportive government policies that focus on promoting digital literacy, improving digital infrastructure and providing financial incentives are essential. These initiatives can empower women by equipping them enough resources to adopt and effectively utilize digital technologies with the necessary skills. By fostering an inclusive environment, these policies can help women-led MSMEs grow, innovate, and compete more effectively in the digital economy. Ultimately, targeted government actions can transform the role of women entrepreneurs in digital landscape.

Government of India. (2018), Digital India initiative represents how policy interventions can boost digital adoption among MSMEs. Programs like the Pradhan Mantri Mudra Yojana have been crucial in supporting women entrepreneurs by offering micro-financing and enabling them to invest in digital tools and

infrastructure. This initiative has helped to overcome lower financial barriers and encouraging more women to adopt digital technologies. These efforts have enhanced their business operations and market reach, highlighting the significant role of government support in driving digital transformation and empowering women entrepreneurs in the MSME sector.

Soriano and Galindo-Martín (2019) emphasize capacity-building initiatives and targeted training programs are crucial for empowering women entrepreneurs like digital literacy programs that designed specifically for women to close the digital gender divide and enable them to fully utilize digital technologies for their businesses. Furthermore, public-private partnerships are instrumental in making affordable digital tools and services more accessible. By collaborating, the public and private sectors can support the digital transformation of women-led MSMEs, ensuring they have the resources and knowledge to thrive in the digital economy.

The literature on digital transformation as a driver of women empowerment in MSMEs indicates that digitalization presents substantial opportunities for business expansion and socio-economic empowerment but these benefits are not guaranteed. Women entrepreneurs encounter various obstacles, such as the digital gender gap, socio-cultural limitations, and financial difficulties, which need to be addressed to fully harness the potential of digital technologies. To overcome these challenges and ensure that digital transformation translates into meaningful empowerment for women in the MSME sector, government interventions, targeted training initiatives, and supportive policies are essential.

2.5. OBJECTIVES

- To Explore the Role of Digital Tools in Enhancing Women's Entrepreneurial Capabilities
- To Identify the Barriers to Digital Adoption Among Women Entrepreneurs
- To Assess the Impact of Digital Transformation on Women-Led MSMEs

3. METHODOLOGY

To effectively meet the three research objectives, a comprehensive and well-structured research methodology is essential. This study adopts a mixed-methods approach, integrating both qualitative and quantitative techniques. Case studies and surveys are employed to investigate how digital tools enhance women's entrepreneurial capabilities, particularly in areas like market expansion and operational efficiency. To identify barriers to digital adoption, the study utilizes surveys and focus group discussions, uncovering challenges such as financial limitations and a lack of digital skills. To find the impact of digitalization by the analysis the change in revenue before and after digitalization women led MSMEs. A survey on 30 women led MSME has been conducted. Purposive data collection has been done. to evaluate whether digitalization has had a significant effect on the revenue of women-led MSMEs. The following hypotheses were formulated for the analysis.

H0: There is no significant change in revenue due to digitalization.

H1: There is significant change in revenue due to digitalization

The impact of digital transformation on business performance is evaluated through paired t-tests focusing on pre- and post-digitalization revenue growth and market reach.

3.1. MSME SECTOR AND WOMEN PARTICIPATION IN INDIA

The Micro, Small, and Medium Enterprises (MSME) sector in India has been a key driver of economic growth, contributing significantly to employment, innovation, and exports. The sector has grown substantially over the past few decades, driven by favourable policies, increased access to finance, and a growing entrepreneurial spirit. As of the latest reports, there are over 63 million MSMEs in India, contributing about 30% to India's GDP and employing over 110 million people. The sector has seen a significant shift towards digitalization, with more MSMEs leveraging technology for business processes, marketing, and customer engagement.

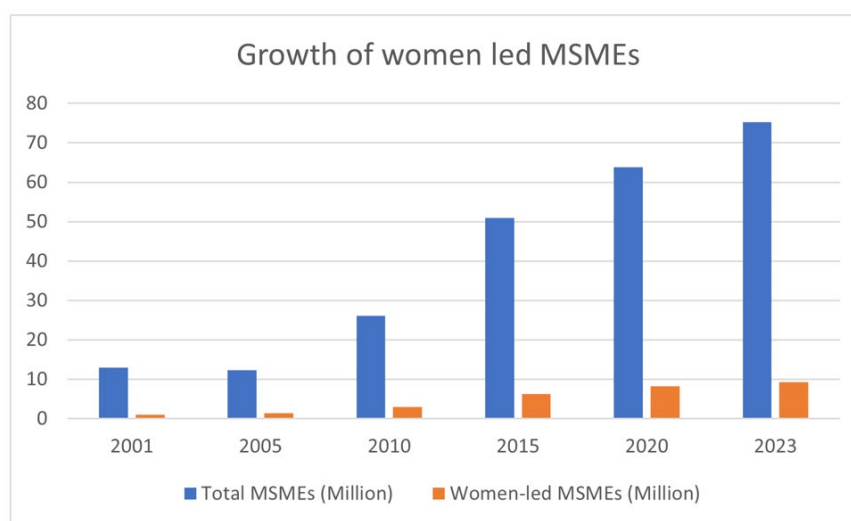
Growth in Women-led MSMEs: Women's participation in the MSME sector has seen a gradual but steady increase, reflecting broader societal changes and targeted government initiatives aimed at promoting women entrepreneurship.

Table 1

Table 1 Here is a Table Summarizing the Growth in Women-Led MSMEs in India Over the Years

Year	Total MSMEs (Million)	Women-led MSMEs (Million)	Percentage of Women-led MSMEs (%)
2001	13	0.96	7.40%
2005	12.3	1.39	11.30%
2010	26.1	2.97	11.40%
2015	51	6.3	12.40%
2020	63.88	8.2	12.80%
2023	75.3	9.35	12.40%

Source (MSME annual report 2020-21, Nsso data 73 round, census of MSME)



- In 2001-02, women owned approximately 7.4% of MSMEs.
- By 2010, this figure had increased to around 11.4%, reflecting a growing number of women entering the entrepreneurial space.
- As of the most recent estimates, women now lead about 12.8% of MSMEs, indicating continued progress but also highlighting the need for further support and encouragement for women entrepreneurs.

- Women-led MSMEs are primarily concentrated in sectors like textiles, handicrafts, food processing, and retail. However, recent trends show an increasing presence in technology, education, and healthcare sectors.

4. DISCUSSION AND ANALYSIS

The integration of digital tools in Micro, Small, and Medium Enterprises (MSMEs) not only fosters women's entrepreneurship but also significantly contributes to economic growth by enabling women to access global markets and enhance their competitiveness. Here are few examples of a successful women-led MSME that has effectively embraced digitalization:

- **Case study 1:**

Fable Street, an Indian fashion brand founded by Shradha Agarwal, specializes in workwear for women. They use an online store and digital marketing to reach and engage customers. By embracing digitalization, the company has effectively utilized an e-commerce platform and digital marketing strategies, such as social media and online advertising to expand its reach and engage with customers. This approach has helped them to build a strong and robust brand presence and successfully meet the needs of professional women. (Sharma, M. (2020,))

- **Case study 2:**

Falguni Nayar, founder of Nykaa, transformed the beauty and wellness industry in India by utilizing digital platforms to create a successful online marketplace. Nykaa's e-commerce model, supported by social media and influencer marketing, has made it a leading beauty destination. (Nayar, F. (2020).)

- **Case study 3:**

Jasmine Crowe - As the founder of Goodr, Jasmine Crowe has developed a tech-based solution to minimize food waste while addressing hunger. Her platform links businesses with surplus food to local shelters and food banks, supporting social change and women's empowerment. (NPR. (2021,))

- **Case study 4:**

Nadia Boujarwah - Co-founder of Dia&Co, a fashion subscription service for plus-size women, Nadia Boujarwah has used digital platforms to challenge beauty norms and build a supportive community for women to embrace their bodies. (Tovar, V. (2022,))

- **Case study 5:**

Sujata Bhatia - Co-founder of Bharat Matrimony, one of India's leading matrimonial services, Sujata Bhatia has utilized technology to help thousands of women find suitable partners and has promoted women's empowerment through various initiatives. (Bharat Matrimony)

Each of these entrepreneurs showcases how digital tools can expand business reach, build community connections, and advance women's empowerment in their fields.

5. IMPACT OF DIGITAL TRANSFORMATION ON WOMEN-LED MSMEs

A paired t-test was used to determine whether there is a statistically significant difference between the revenue before and after digitalization among the surveyed MSMEs. The paired t-test compares the means from two related groups (in this case, the same MSMEs' revenue before and after digitalization) to assess whether the average difference is significantly different from zero.

Table 2

Table 2 Paired Samples Statistics				
Mean Difference	Standard Deviation of Difference	T-Statistic	Degrees of Freedom (df)	P-Value
3882758.62	3084878.9	-6.778	29	2.32E-07

The analysis provides strong evidence that digitalization has a significant positive impact on the revenue of women-led MSMEs. The positive mean difference of 3,882,758.62 suggests that the significant increase in revenue post-digitalization, with the highly significant p-value, we can reject the null hypothesis. This result emphasizes the critical role of digital transformation in driving the growth and success of women-led MSMEs

- According to this surveyed data of 30 women led MSMEs, women entrepreneurs in the MSME sector continue to face numerous challenges:
- **Access to Finance:** Women often find it more difficult to secure funding due to gender biases and a lack of collateral.
- **Skill Development:** Limited access to skill development and business training hampers the growth of women-led MSMEs.
- **Market Access:** Women entrepreneurs often struggle to access broader markets, limiting the growth potential of their businesses.
- **Social Barriers:** Societal norms and family responsibilities can also restrict the ability of women to fully engage in entrepreneurial activities.

5.1. FUTURE OUTLOOK

The future of women's participation in the MSME sector looks promising with increasing awareness, support, and opportunities:

- **Digitalization:** The adoption of digital platforms and e-commerce is expected to open new avenues for women entrepreneurs, allowing them to reach wider markets.
- **Government Support:** Continued government focus on women's entrepreneurship will likely lead to more targeted schemes and policies to support women-led MSMEs.
- **Changing Societal Norms:** As societal attitudes continue to evolve, more women are expected to take up entrepreneurship, further driving their participation in the MSME sector.

6. CONCLUSION

The integration of digital tools in women-led MSMEs has significantly impacted their revenue and overall business growth. A survey of 30 women-led MSMEs revealed that digitalization has led to a substantial increase in revenue, as evidenced by the paired t-test analysis. This result underscores the critical role of digital transformation in empowering women entrepreneurs by expanding their market reach, enhancing customer engagement, and building strong brand identities. Despite these benefits, women in the MSME sector still face considerable challenges, including limited access to finance, skill development opportunities, market access, and societal barriers. These obstacles can impede the full realization of the benefits of digitalization. However, the future looks promising, with increasing digital adoption expected to open new avenues for women entrepreneurs. Continued government support and evolving societal norms will be essential in further promoting women-led MSMEs, allowing them to thrive and contribute more significantly to economic growth. The continued growth of women-led MSMEs will not only enhance economic diversity but also contribute significantly to the overall empowerment of women in India.

CONFLICT OF INTERESTS

None.

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REFERENCES

- Asiedu, E. (2019). "Does the Digital Gender Divide or Socio-Cultural Norms Matter? A Comparative Study of Women in Developing Economies." *Journal of Development Economics*, 138, 57-72.
- Bala Subrahmanya, M. H. (2015). "Digital Transformation of MSMEs : A Strategy for India." *Journal of Innovation and Entrepreneurship*, 4(1), 12-19.
- Bhardwaj, A., & Goundar, S. (2020). "E-commerce as a Tool for Women Empowerment in MSMEs : A Case Study of India." *Journal of Small Business and Enterprise Development*, 27(3), 423-443.
- Bharadwaj, A., El Sawy, O. A., Pavlou, P. A., & Venkatraman, N. (2013). "Digital Business Strategy : Toward a Next Generation of Insights." *MIS Quarterly*, 37(2), 471-482.
- Bharat Matrimony. (N.d.). Successful years. Bharat Matrimony.
- Chatterjee, S., & Mishra, R. (2020). "Digitalization in the Textile Industry : Empowering Women Entrepreneurs." *Journal of Textile and Apparel, Technology and Management*, 11(3), 210-230.
- Demirgüç-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J. (2018). "The Global Findex Database 2017 : Measuring Financial Inclusion and the Fintech Revolution." World Bank Group.
- Ghobakhloo, M. (2018). "The Future of Manufacturing Industry : A Strategic Roadmap Toward Industry 4.0." *Journal of Manufacturing Technology Management*, 29(6), 910-936.

- Goyal, P., & Yadav, V. (2019). "Women Entrepreneurship in Retail Sector : A Case Study Approach." *Journal of Small Business and Enterprise Development*, 26(4), 591-610.
- Government of India. (2018). Pradhan Mantri Mudra Yojana (PMMY) : Annual Report. Ministry of Finance.
- International Telecommunication Union. (2020). "Measuring Digital Development : Facts and Figures." ITU Publications.
- Klapper, L. F., & Parker, S. C. (2010). "Gender and the Business Environment for New Firm Creation." *The World Bank Research Observer*, 26(2), 237-257.
- McKinsey Global Institute. (2015). "The Power of Parity : How Advancing Women's Equality Can Add \$12 Trillion to Global Growth." McKinsey & Company.
- Nayar, F. (2020). Nykaa: The story of building India's biggest beauty marketplace. *Vogue India*.
- NITI Aayog. (2023). Decoding Government Support to Women Entrepreneurs in India.
- Sharma, M. (2020, October 14). How Shradha Agarwal built FableStreet into a Premium Workwear Brand for women. *YourStory*.
- NPR. (2021, September 3). Jasmine Crowe : What can we do to tackle food waste and hunger ? NPR.
- Tovar, v. (2022, november22). Dia & co Reports Plus-Size Customers Spending more on luxury. *Forbs*