



Digital Adoption and Financial Performance of Small and Medium Enterprises in Jharkhand: An Empirical Study

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Abstract: The digital transformation has become a major source of competitiveness and development of businesses in the global market. In the developing countries like India, small and medium enterprises (SMEs) are of particular interest to the adoption of digital technologies as they are the important stakeholders in terms of employment creation and economic growth of the region. The current research will focus on the connection existing between digital adoption and financial performance of SMEs in Jharkhand. The research relies on the primary data obtained with the help of the structured questionnaire given to the owners and managers of SMEs working in the chosen state districts. The discussion is aimed at how digital tools like digital payment systems, online marketing systems, accounting systems, and e-commerce applications can affect business performance measures such as sale growth, operational effectiveness, and customer accessibility. The data collected was interpreted by using descriptive statistics and correlation analysis which were used to test the hypotheses proposed. The results show that SMEs that incorporate digital technologies record an increase in financial results and growth in the market. The significant percentage of the surveyed enterprises indicated higher sales and better customer interaction and higher efficiency in their operations after adopting digital tools within their business operations. This paper thus notes the significance of digital adoption in making SMEs in emerging regional economies more competitive and sustainable. The results also indicate that policy efforts that enhance digital literacy, infrastructure, and affordable digital solutions could be further used in enhancing digital transformation in the SME sector.

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Introduction

Over the last few decades, the digital technologies have dramatically altered the manner in which businesses are being conducted throughout the globe. The use of digital technologies of cloud computing, computer payment systems, web-based markets, and social media sites has transformed the way traditional businesses are conducted and offered fresh possibilities of expansion and effectiveness. Digitalization makes firms more efficient in their operations, minimize costs of transacting, and target broader markets with more ease. Due to this, the business that successfully embraces digital technologies can usually become more productive, connect better with customers, and retain its competitiveness in a constantly changing economic landscape.

Small and Medium Enterprises (SMEs) are important in the development of an economy especially in the emerging economies, like that of India. These businesses play a significant role in the creation of jobs, local growth and innovation. As cited by the Ministry of Micro, Small and Medium Enterprises, the SME sector contributes a huge percentage of the Gross Domestic Product (GDP) and exports of India, as well as, it is a source of livelihood to millions of its population. SMEs are regarded as the support of the Indian economy as they are flexible and adaptable. Nevertheless, a number of SMEs have encountered issues with limited financial and technological resources and limited access to the market, which might impede their sustainability and further growth.

Digitalization has become a significant business driver of SME growth and competitiveness in the modern business world. Using digital technologies like online payment systems, digital accounting software, and online stores can enable small business owners to become more efficient in their operations and increase the market coverage that is not limited by geographic features. SMEs can also use digital marketing mediums such as social media platforms and online advertising platforms to communicate with the customers directly and develop closer relationships. Digital adoption can therefore help to improve the financial results by boosting sales, improving productivity and lowering operation costs.

Although there are these possible advantages, the degree of digital penetration among SMEs in various regions in India is very different. Although the digital revolution has been fast in metropolitan regions, in less developed areas, most enterprises are still finding it difficult to integrate technology. The digital illiteracy, poor internet connectivity, poor infrastructure, and financial implication are some of the factors that tend to limit the capacity of small businesses to embrace digital technologies. All these struggles are especially apparent in those states where development of industries and penetration of technology are uneven.

Jharkhand is a state in eastern India, which is endowed with resources and has enormous SME potential as a result of the emerging industrial base and entrepreneurial practices. Nevertheless, the uptake of digital technologies among the SMEs in the state is quite low as compared to other more developed parts of the country. A lot of businesses are also yet to embrace the digital tools in their daily business operations through the traditional business practices. The level of digital adoption and its effects on the businesses should consequently be understood in order to help advance sustainable development of SMEs in the area.

In this regard, the given paper aims to analyse the connection between digital adoption and the financial performance of the Small and Medium Enterprises in Jharkhand. The study will offer information on how digital transformation can support the competitiveness and growth opportunities of the SMEs by examining the application of the digital tools and the impact they make on the business. The results of the study can also be used in the policy debates of enhancing digital infrastructure and facilitating technological adoption by small businesses in the emerging regional economies.

Review of Literature

Digital transformation is a relatively recent field of study with a focus on a specific aspect, namely the role of digital transformation in small and medium enterprises (SMEs). Analysts have effectively noted that the introduction of digital technologies can have a considerable effect on the performance of the business, the increase of its market share, and its financial results. With the continued use of digital tools in communication, transaction, and data management by business entities, the issue of how digitalization can contribute to the development of SMEs has become a subject of significant scholarly and policy-making focus.

The Diffusion of Innovation theory is one of the earliest theoretical viewpoints explaining the use of technology since it postulates that the spread of innovations in a social system is slow and varies depending on perceptions of usefulness, compatibility, and complexity (Rogers, 2003). This theory offers a significant way of comprehending the way in which SMEs embrace digital technologies with time and the effects of various organizational and environmental conditions on the process.

Some studies have placed particular focus on the strategic significance of digital technologies to the performance of a business. According to Bharadwaj et al. (2013), digital technologies ceased to be an operational tool and became a primary element of a business strategy. The study by them indicates that those organizations that effectively incorporate digital technologies in their strategic decision-making procedures are better placed to attain competitive advantage and better financial results.

With reference to the developing economies, the contribution of SMEs to the economic development has been well recognized. As pointed out by Tambunan (2009), SMEs also play an important role in the generation of jobs and economic development in the developing nations. Nevertheless, the research also indicates that the SMEs tend to be structurally disadvantaged due to lack of access to finances, lack of technological infrastructure and poor management capabilities. Such restrictions often restrict the possibility of small businesses to implement new technologies.

The recent studies have also shown the positive correlation between digitalization and performance of SMEs. According to a report by KPMG (2020), SMEs, which implement digital solutions in the form of e-commerce platforms, cloud-computing, and digital tools to pay their customers, report that their operational efficiency and customer reach are enhanced. The research indicates that digitalization can help SMEs to minimize operational expenses and enhance the level of competitiveness in the market.

Likewise, the World Bank (2021) points out that digital technologies can change the business environment of emerging economies, as they can enhance access to the market and financial services. The report however also states that the differences in infrastructure and digital literacy are also regional, and thus tend to cause uneven levels of digital uptake across the states and regions.

Digital technologies have gained traction in the last few years, as India SMEs have started adopting digital technologies at a faster pace because of government programs like the Digital India initiative, the growth in smartphone use, and the growth of digital payment systems. The NASSCOM (2022) is sure that the efficiency and competitiveness of most Indian SMEs have improved significantly due to the use of digital tools that include online marketplaces, enterprise software, and digital marketing platforms. However, the report emphasizes that the presence of a significant percentage of SMEs in less developed states and in the rural areas is still characterized by the challenges pertaining to technological awareness and access to infrastructure.

Vial (2019) has also discussed the influence of digital transformation on organizational performance and the reasoning is that digital transformation is not only about the adoption of technology, but also structural and cultural transformations within organizations. As per the research, digital transformation necessitates business to incorporate technology in organizational procedures, leadership approaches, as well as customer interaction habits.

The studies that think of the eastern part of India point to the idea that SMEs in such states as Jharkhand continue to have a number of barriers to the implementation of digital technologies. Singh and Kumar (2020) note that the successful adoption of digital tools in most businesses is curtailed by infrastructural constraints, the lack of balance in the development of the digital sector, and insufficient digital awareness among entrepreneurs. In line with this, Das and Pal (2021) mention that Jharkhand SMEs have limited financial resources and technological capacity, which makes it harder to implement more developed digital solutions.

Although the literature on the topic of digitalization and performance of SMEs is growing, the number of studies directly related to the topic of the relation between digital adoption and financial performance of SMEs in Jharkhand are relatively limited. The available literature is largely based in the metropolitan or the industrially developed areas of India, and a considerable gap in the comprehension of the process of digital transformation in the emerging economies of the region exists. Thus, the current research is aimed to fill this gap by studying the impact of digital adoption on the financial performance and market reach of SMEs based in Jharkhand.

Hypotheses Development and Conceptual Framework

Digital technologies have been growing to become the critical factor that affects the performance and competitiveness of small and medium enterprises. The introduction of online tools helps companies to increase efficiency in their operations, communicate better with their customers, and reach more markets. Over the past few years, researchers and policy makers have highlighted that adoption of digital can play a major role towards the growth and sustainability of SMEs, and especially in developing economies where technological innovation can thwart conventional business lock-ins.

Among the most important advantages of the digital adoption among SMEs, the possible increase in their financial performance can be identified. Online banking and accounting programs, e-payment tools, and online business platforms can facilitate smooth business activities and lower the transaction cost. The technologies enable firms to operate financial records more effectively, faster and

enhance transparency in financial transactions. Consequently, some businesses that have implemented digital solutions tend to gain in terms of productivity, revenue generation, and financial stability (KPMG, 2020).

More so, SMEs can also increase their market penetration and customer base through digital adoption. The small businesses get access to online marketing platforms, social media and e-commerce websites where they are able to market their products and services to more people. In contrast to the conventional means of marketing, the digital medium gives companies the opportunity to engage with their customers and get prompt feedback, which can contribute to improved customer experience and retention. Research has observed that SMEs that apply digital marketing techniques have a better chance to compete in the contemporary markets and attain superior business development (NASSCOM, 2022).

Nonetheless, the effect of digital adoption on the performance of the SMEs can be different based on the degree to which the businesses have incorporated digital technologies in their operation. The adoption of digital tools may be slow in areas with underdeveloped digital infrastructure and low technological awareness. Consequently, the interconnection between digital uptake and financial performance will be significant in the analysis of the contribution of the technology in improving SMEs in the emerging regional economies.

In terms of the theoretical knowledge and empirical data presented in the literature, the following hypotheses are suggested in this study:

Hypothesis 1

H0₁: Digital adoption has no significant impact on the financial performance of SMEs in Jharkhand.

H1₁: Digital adoption has a significant positive impact on the financial performance of SMEs in Jharkhand.

This hypothesis will explore the role of digital technologies in achieving better financial results like higher sales, profitability and efficiency in the operations of the SMEs.

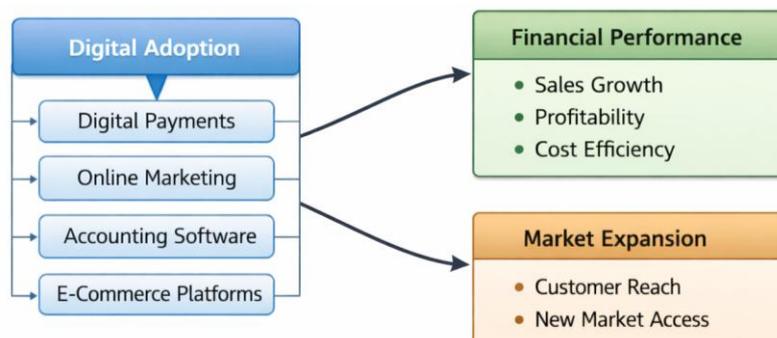
Hypothesis 2

H0₂: The use of digital tools does not significantly influence customer reach and market expansion of SMEs in Jharkhand.

H1₂: The use of digital tools significantly improves customer reach and market expansion of SMEs in Jharkhand.

The hypothesis will concentrate on how the digital platforms like social media marketing, online marketplaces and online payment systems can allow the SMEs to reach a wider market and get new customers.

In order to test these relationships, the study employs a conceptual framework within which digital adoption is the independent variable, whereas financial performance and market expansion are the dependent variables. Digital adoption in the current research implies the utilization of platforms (digital payment platforms, online marketer platforms, digital accounting platforms, etc.). The technologies will also increase efficiency in the business and will allow the SMEs to access a larger number of customers, which will result in a better business performance.



The conceptual framework depicts the way in which the implementation of digital technologies may affect the main performances of the SMEs. The research outcomes through the analysis of these relationships will offer empirical data on whether or not digital transformation is useful in enhancing the financial sustainability and competitiveness of SMEs in Jharkhand.

Data Analysis and Findings

This part shows the discussion of primary data that was gathered among the owners and managers of SMEs working in various districts of Jharkhand. The analysis is narrowed down to the following demographics of the enterprises, the degree of digital adoption, and the effects of digital technologies on the business performance. The data that is collected is interpreted using statistical tools in the form of percentage analysis and correlation analysis.

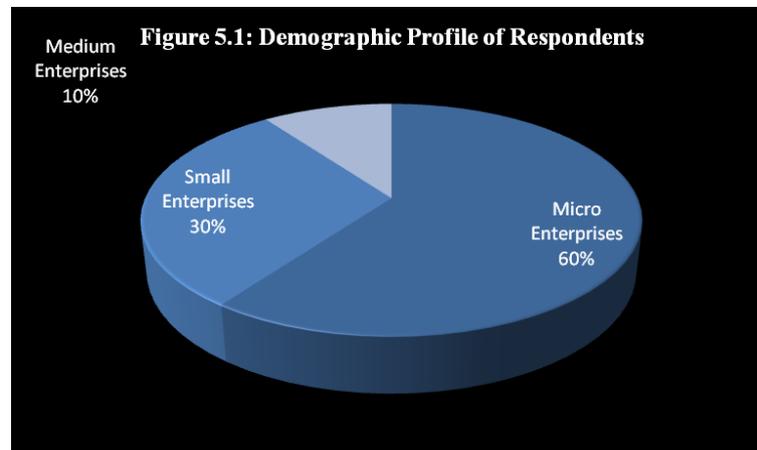
- **Demographic Profile of SMEs**

The demographics of the sampled businesses will give a picture of the nature of the enterprises, size, and the nature of operations of the enterprises sampled in the research.

Table 1: Demographic Profile of Respondents

Category	Frequency	Percentage
Micro Enterprises	72	60%
Small Enterprises	36	30%
Medium Enterprises	12	10%
Total	120	100%

Source: Field Survey



Source: Compiled by researcher with Field Survey data

The findings show that most of the sampled enterprises are in the micro enterprise category with a sample percentage of about sixty. Small enterprises are thirty percent of the respondent population where the medium enterprises are a comparatively low percentage of sample size. This distribution demonstrates the organization of the SME sector in Jharkhand where the micro enterprises prevail in the business environment.

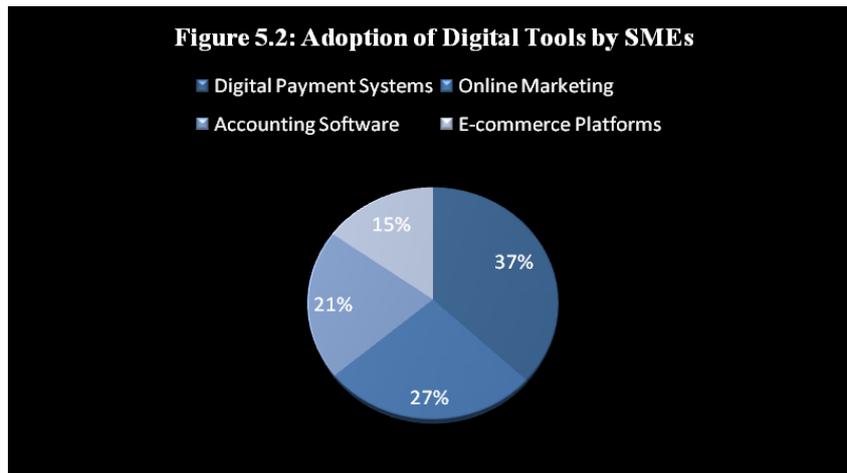
- **Level of Digital Adoption among SMEs**

Digital adoption of SME is assessed based on the use of digital tools like electronic systems of payment, online marketing sites, accounting programs, and electronic commerce software.

Table 2: Adoption of Digital Tools by SMEs

Digital Tool	SMEs Using Tool (%)
Digital Payment Systems	85%
Online Marketing	62%
Accounting Software	48%
E-commerce Platforms	35%

Source: Field Survey



Source: Compiled by researcher with Field Survey data

Through the analysis, it is shown that the digital payment systems have been the most widely used digital tool among SMEs in Jharkhand. A considerable number of companies have embraced the use of online payment systems like UPI and mobile wallet to enable money transfer. A significant portion of online marketing are also applied by a sufficient number of SMEs, which allows them to market their products via social networking and the internet. The incorporation of accounting software, e-commerce platforms are, nevertheless, lower, which means that the awareness and training of digital business management are required.

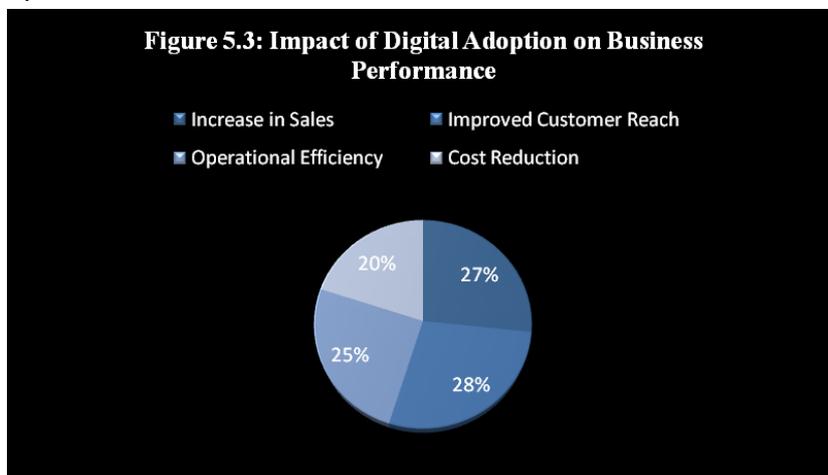
• **Impact of Digital Adoption on Financial Performance**

In order to find out the connection between the adoption of digital and financial performance, the respondents were questioned about their experience regarding the alterations in the business outcomes following the adoption of digital tools.

Table 3: Impact of Digital Adoption on Business Performance

Performance Indicator	SMEs Reporting Improvement (%)
Increase in Sales	68%
Improved Customer Reach	72%
Operational Efficiency	64%
Cost Reduction	51%

Source: Field Survey



Source: Compiled by researcher with Field Survey data

The findings indicate that the digital adoption has had a positive impact on a number of SME performance aspects. Most of the respondents reported improvement in customer reach and sales growth upon the adoption of digital technologies. The use of digital tools has also been a factor in the increased effectiveness of operations through ease in making financial transactions and increased communication with customers.

- **Hypothesis Testing**

In the study of the correlation between digital adoption and SME performance, correlation analysis and percentage analysis were the methods used to analyze the collected survey data. This analysis was done to find out whether the usage of digital technologies have a significant impact on financial performance and market reach of the SMEs that are operating in Jharkhand.

Hypothesis 1

H0₁: Digital adoption has no significant impact on the financial performance of SMEs in Jharkhand.

H1₁: Digital adoption has a significant positive impact on the financial performance of SMEs in Jharkhand.

The survey findings show that, digital technologies have had a positive impact on the financial performance of most SMEs. Sixty-eight percent of the surveyed enterprises claimed to have had their sales increased following the adoption of the digital technologies, and 64 percent found themselves having improved their operational efficiency as a result of using the digital payment systems and the digital accounting tools. Moreover, 51 percent of the interviewees reported that operational costs had been reduced because of the use of digital platforms in carrying out financial transactions and running business.

These results indicate that SMEs that have incorporated the use of digital tools in their business processes can control their financial operations and enhance the overall productivity of the business. Digital payment systems make the process of transactions easier, and digital accounting software allows managing financial records better. Consequently, companies that embrace the use of digital technologies are more likely to record a better financial performance than those that only use conventional ways of doing business.

The statistical analysis has as such revealed a positive relationship between the digital adoption and the financial performance indicators like sales growth and operational efficiency. According to these results, the alternative hypothesis (H1 eleven) is accepted that proves that digital adoption brings a significant positive effect on the financial performance of SMEs in Jharkhand. As a result, the null hypothesis (H0₁) is dismissed.

Hypothesis 2

H0₂: The use of digital tools does not significantly influence customer reach and market expansion of SMEs in Jharkhand.

H1₂: The use of digital tools significantly improves customer reach and market expansion of SMEs in Jharkhand.

The importance of digital technologies in broadening the customer base and market coverage of the SMEs was also analyzed. According to the survey results, 72 percent of the surveyed businesses had indicated that they had increased their reach to the customers once they had embraced digital tools, especially by using social media marketing tools as well as online marketing promotion channels. Moreover, 62 percent of the respondents said that digital marketing tools enabled them to get new customers and market their products better.

The digital platform helps SMEs to interact directly with the customers and advertise their products to their customers outside the geographical area of their location. The social media marketing and online marketplaces as well as digital payment systems give the businesses the chance to connect with more customers and raise their brand awareness. Consequently, companies that adopt online tools are in a place to increase their market share and enhance their interaction with customers.

The statistical results thus show that there is a positive correlation between digital technologies use and market growth among SMEs. On this evidence, the alternative hypothesis (H1 2) is accepted and this indicates that digital tools have a significant effect in increasing the customer reach and to expand market of SMEs in Jharkhand. The null hypothesis (H0 2) is, therefore, rejected.

Overall Interpretation

The findings of the hypothesis testing indicate that the role of digital adoption in promoting financial performance and market coverage of SMEs is significant. Businesses that embrace the use of digital tools actively will be more probable to enjoy the benefits of the enhancement in sales, efficiency, and engagement with the customers. The above findings suggest the significance of encouraging digital transformation amongst SMEs to enhance their competitiveness and sustainability in business growth.

Conclusion and Policy Implications

The current research paper has tested how digital adoption is related to the financial performance of Small and Medium Enterprises (SMEs) in Jharkhand. As the world is turning into a global village, companies worldwide are increasingly incorporating digital technologies in their operations and management practices. To SMEs, digitalization has become a significant source of efficiency, competitiveness, and market growth. The results of the research can be used as empirical data on the effect of the implementation of digital technologies on the work of SMEs in a developing regional economy.

The research shows that the introduction of digital positively affects financial performance of SMEs. The survey of enterprises also showed that a respectable percentage of them registered advancements in sales expansion, performance, and expenses following the adoption of digital solutions like digital payment systems and accounting software. The technologies assist the businesses to simplify their financial dealings and keep the records updated and simplify their business operations. Consequently, the more SMEs actively use digital technologies, the more they can manage their resources and become more productive in general.

Other implications of the research include the use of digital tools to increase customers reach and access to the market. SMEs that can employ digital marketing tools and online payment offerings can engage with customers more efficiently and reach out to a greater market region than a local one. Through digital platforms, businesses are given a chance to market their products and services to more people and thus enhance brand awareness and customer interactions. This implies that the adoption of digital not only enhances the efficiency of business but also leads to the growth of the business through the increased market opportunities.

Although such positive results were observed, the research indicates that a number of SMEs continue to struggle with the implementation of digital technologies. Poor use of digital literacy, poor infrastructure and financial exclusion remain some of the barriers to proper adoption of digital tools in most small businesses. Such obstacles are seen especially in smaller towns and semi-urban regions, where the availability of technological resources and training opportunities is still low.

Policywise, the results of this paper highlight the necessity of additional funding to promote the idea of digital transformation amongst SMEs. The government agencies and the various development institutions are encouraged to encourage digital awareness and training programs that can make the entrepreneurs familiar with the advantages and application of digital technologies. It can also be supported by ensuring that digital infrastructure, reliable internet connection, and technical support services are made available to the small businesses at affordable prices.

Moreover, financial institutions and digital service providers can also contribute greatly to the digitalization of SMEs by providing convenient and affordable digital services. SMEs can implement digital technologies in their routine without making substantial investments; simplified digital payment systems, cloud-based accounting tools and e-commerce sites can help them do so.

In general, this paper concludes that digital adoption has massive potential to boost the financial sustainability of SMEs and their competitiveness on the market in Jharkhand. Digital transformation is also a solution that can be encouraged at the SME sector, and it will not be only beneficial to the business but also the region economy. Further studies can also be performed on the industry-specific digital adoption trends and how new technologies, including artificial intelligence and sophisticated analytics, can be used to aid SME innovation and productivity.

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