

# The Extent of Digitization of Small and Medium Enterprises in India and its impact on Growth

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## **Abstract:**

This paper presents the impact of digitization on the economic growth of small and medium enterprises (SMEs) in India. Over the past five decades, small and medium enterprises have been empowered to change the economic landscape of India and SMEs are becoming the backbone of the Indian economy. One of the vital factors by which SMEs can promote the efficiency of the workforce, greater access to the market, or overall growth is digitization. Digitization is the tool to determine the increased customer acquisition, profitability, increased sales, innovation, efficiency of business operation, productivity, and so on. The objective of this study is to comprehend whether the adaptation of digitization is conducive to revenue growth of small and medium enterprises. Unlike the traditional method of interviewing the SMEs, this study uses text-mining of the annual reports (2019-20) of around listed 80 SMEs to evaluate the change in business performance caused by the adoption of digitization. Using the text-mining method on the annual report of small and medium enterprises for the year 2019-2020 and 2020-2021 (during the period of the Covid-19 pandemic) certain keywords of digitization are collected from different literature to generate the data on digitization frequency with which a relation is established with sales growth. This paper addresses the main question of how digitization is reflected in their performance and sales growth.

**Keywords:** *SMEs, digitization, keywords, text-mining, sales growth*

## **Introduction**

Small enterprises are defined as business units whose turnover and working capital do not exceed fifty crore rupees and ten crore rupees respectively. Similarly, medium enterprises are defined as units whose turnover and investment in plant and machinery do not exceed two hundred and fifty crore rupees and ten crore rupees respectively (1). In India, small and medium enterprises play a very significant role to contribute to 45% of India's manufacturing output and 40% of total export and thus it is one of the major supports for India's GDP growth. 40 % of the workforce of India which is about 80 million people are employed in small and medium enterprises (2). Thus, these enterprises provide the impetus to improve the livelihood and employment of 80 million people who are low-skilled. Small and medium enterprises of India act as an ancillary unit of large manufacturing industries producing a wide range of goods and services to meet the demand in domestic as well as international markets. One of the vital factors by which SMEs can promote the efficiency of the workforce, greater access to the market, or overall growth is digitization. Digitization is the process of changing and converting the analog to digital form. A company digitizes the business operations for reducing the cost of printing, easy compiling of data, easier and quicker sharing of information, simplifying access to information and content, and reinforcement of security. Digitization is the tool to determine the increased customer acquisition, profitability, increased sales, innovation, efficiency of business operation, productivity, and so on. The geographical limitation can be unleashed for customer acquisition through the extent of digitization in small and medium enterprises in India and the customer base can be managed through the e-platform. Digitization also

enables MSMEs to get better access to finance. Digital payment is another aspect of the benefit of digitization, especially in the period of the current pandemic. More business facilities and financial services can be offered to small and medium enterprises through this digital platform. It is also evident that better financial governance and better accessibility of data are the outcomes of digitization. Managerial and technical information can be gathered by the extent of digitization. In the financial domain of a company, digitization can create a better risk profile for financial risk assessment. It can also develop a bridge between a potential global financial organization and a small and medium enterprise so as to connect successfully through online documentation. There are certain schemes like MSME Samadhan, MSME Sambandh, and MSME Sampark, introduced by the Ministry of MSMEs Government of India, aimed at uplifting the small and medium enterprises as robust and vibrant sectors (3). Digital MSMEs scheme is one of them to promote the production and business process of SMEs by spreading awareness, emphasizing on development of e-platform, and promoting digital marketing and digital literacy. The government of India has taken initiatives for digital empowerment through Enterprise Development Centre. Different types of awareness programs and workshops to promote digitization in small and medium enterprises are being arranged by Government. Digitization is the driving force for small and medium enterprises to move along the growth trajectory. It is observed that the immense contribution of small and medium enterprises to the GDP of India is caused by building a digital identity system because encapsulating information of all business activities digitally can expedite the revenue generation and growth of the organization. Since SMEs have been experiencing different constraints like scarcity of resources, improper business information, corruption, inadequate advanced technological facilities, delay in implementation of a scheme of Government, and lack of capital, a global digital identity system can help to channel the potential of small and medium enterprises to be globally competitive. Therefore, this study is an endeavour to establish a link between digitization and growth with a new method of collecting data and generating frequency.

## **Literature Review**

Some of the studies have been conducted on digital transformation, digitalization, the contribution of MSMEs to digital technology (India), Digitalisation of MSME in the context of Industry 4.0 (India), acceptance of digital technology for financial inclusion of SMEs, marketing innovation, acceptance of e-platform, etc.

Some of the literature work on Digitization gives a broad view of how digitization accelerates the performances of Micro, small and medium enterprises, helps to cope with the crisis of the Covid-19 pandemic, and provides a level playing ground to the small and medium enterprises in the global market. Different studies on digitization give a broad view of different sectors mainly informal sectors, micro, small and medium enterprises. How the adoption of digitization in this new era is important can be followed by several research works.

Kuniawati, Idris, et al (2021) aim to find out the different actors through observation and questionnaires for the growth of Indonesian MSMEs. They mainly focus their observation on acceptance of e-commerce, level of technology adaption, and importance of digitization during the recent pandemic which can draw a conclusion that marketing innovation, digital technology adaption, their responsiveness to e-commerce are necessary. Indonesian MSMEs find difficulty in the process of digitization and strategizing online marketing during the pandemic.

Datta Chaudhuri (2022) provides detailed information about the digitization of MSMEs, the benefits derived from digitization as well as different schemes of digitization by the Government of India.

Falentina et al (2021) analyze how the use of the internet impacts the performances of micro and small enterprises in Indonesia. Using primary data of MSEs through field surveys they measured the performances of the firm in terms of labor productivity and exports because labor productivity is represented by revenue and profit per worker per month. As the findings, they found that the use of internet-enabled MSEs to engage more in the digital economy which improve labor productivity and exports.

Kulkarni (2020) delves into the study to prioritize the need for the digitalization of SMEs in India and further challenges and opportunities for the adoption of complete digitalization of SMEs. Further, this study involves an understanding of different schemes of Government for the Digitalisation of SMEs and possible challenges in the way. The qualitative approach of this study in which data are collected from the World Bank, Mckinsey Global Institute, Labour Organisation, reports of the Government of India, and published research papers concludes that innovation and digital transformation can create employment opportunities and skilled labor and can improve infrastructure. In this study, it is found that by adopting digitalization SMEs are estimated to generate revenue of 19% more than SMEs using conventional business methods and tools according to a report by KPMG (2016).

Kilay et al (2022) presents a paper about the influences of the use of e-commerce and e-payment on MSMEs' supply chain performance as well as open innovations and solution to expedite the digitization of MSMEs. Using quantitative research method they collected primary data and conducted multiple linear regression analysis and descriptive statistics to find the impact of e-commerce services through digitization on the business operation of MSMEs in Indonesia. In the finding of this study, there exists a positive relationship between the influence of e-payment and e-commerce service on the MSME supply chain performance. E-Payment and e-commerce are integral parts of digitization.

Fridayani et al (2021) examine how micro, small, and medium enterprises cope with the Covid-19 pandemic through the digital economy. According to the survey 13% of micro, small and medium enterprises embrace the digital economy in Indonesia in order to increase their competitiveness in the global market. This study follows the qualitative approach to find what possibilities and challenges can become commercial prospects through digitalization. Moreover, it uses the SWAT matrix to assemble strategic aspects of this research. This Study suggests that the digital economy has more strengths that can improve the communication skill, interpersonal skills, business operations, and the economic activities of micro, medium, and small enterprises.

Shinozaki et al (2022) state that though micro, small and medium enterprises contribute less to the GDP of the nation, MSMEs are the driving force behind national economic growth. The study also examines the impact of the recent pandemic on informal MSMEs using linear probability model regression and descriptive analysis based on the survey conducted between March 2020 and May 2021. It also assesses the extent of digital transformation and derives policy implications. In their findings they found two streams of business clusters; one group suffered through the pandemic and the other group benefitted. The crisis and restricted immobility compel the MSMEs to accelerate digitalization. This study suggests that a policy framework ought to be designed to formalize the informal MSMEs as a result of which the enterprises can have more strength to cover business competitiveness and entrepreneurship development for survival and growth during the pandemic crisis with digital transformation as part of the strategy.

Najib et al (2020) present in the study that the Government of Indonesia promotes the digital payment method as part of digitization with aim of transforming the economy into the largest digital economy in Southeast Asia and simultaneously the enterprises face obstacles and challenges to adopting the technology because of lack of knowledge and resources. The objective of this study is to comprehend factors affecting digital payment adoption by MSMEs, particularly small and medium-sized restaurants. Using a self-administered questionnaire for collecting the primary data from owners and managers of small and medium-sized restaurants and Structural Equation Modelling with Partial least square the study found that the intention to use digital payment is determined by perceived ease of usage, usefulness, and confidence towards adoption of digital payment. Technology Acceptance Model and digital payment were approved by this research. It also concludes that Technology Acceptance Model provides valuable information to policymakers and financial institutions like a bank to understand the factors or variables influencing the digital payment system in Indonesia.

Sulaiman et al (2020) present a paper that analyses the impact and effective use of digital marketing on micro, small and medium enterprises. This paper uses a quantitative approach to obtaining primary data from the questionnaire of culinary tourism businesses and stakeholders. This study significantly derives that MSMEs have different attitudes towards digital marketing and can be classified into heterogenous groups on the basis of the firm's motivation. The study found that digitalization has a positive relationship with the money-related execution of MSMEs. Digitalization exerts a positive change on the personality of the organization and challenges the ebb and flow plan of action leading to development. Thus, it is prior to building the capacity through digitalization in business than the planning.

Suliswanto et al (2019) provides an analysis of digitalization in East Java following the qualitative approach and collecting primary data by simple random sampling. The paper states that 80 % of MSMEs obtain digital literacy and 70% of MSMEs emphasize digital marketing through social media like Facebook to operate online businesses. The result can be discussed that the sector can flourish through digitalization which can enhance competitiveness, greater market access, the efficiency of production, and management process, and the creation of new market segmentation.

Fauzi et al (2020) aims at indicating the driving force of MSMEs for the growth and improved performance in adopting online food delivery services in the ride-sharing application through digitalization. The study uses ride sharing application in Java, Indonesia to collect the data from MSMEs and found that the three dimensions viz consumer consumption pattern, business competition, and business environment of institutional theory play a significant role to change behavior intention of business operation in the food sector of MSMEs for adopting online food delivery which can increase the growth of the sectors.

Fritriasari (2020) illustrates a business model called the Business Model Canvas Approach which can be applied to small and medium enterprises so that the sectors can become business resilient during the period of the Covid-19 pandemic. For the purpose of this study qualitative approach has been used by collecting data from different kinds of literature and printed or electronic media, books, and research results. For data analysis, 4 procedures have been adapted data collection, data condensation, data presentation, and drawing conclusions. The finding of this study concludes that digitalization is a strong force for business resilience and the right digitalization strategy can improve the performance of SMEs so as to achieve their business goals and develop the SME's products and services to obtain a comparative advantage in international trade with the help of correct digital infrastructure testing.

Erlanitasari et al (2020) state that if digital-based SMEs can able to utilize digital technology through digital literacy then the national income of Indonesia can increase by 80 %. The objective of this research is to comprehend the GO ONLINE SMEs Movement program conducted by the Government of Indonesia with

the help of qualitative analysis collecting both primary as well as secondary data from online portal research through the Google search engine and Government publication of the Go Online SMEs program. The finding of the study is that 36% of SMEs carry out conventional marketing whereas 37% of SMEs have basic online marketing capacity, and 18% of SMEs have medium online capacity due to usage of the website and social media. Only 9% of SMEs have digital marketing capacity through digitization. Thus, this research emphasizes the Government conducting the Go Online SMEs Movement program intensively so as to make Indonesia as Digital Energy of Asia by 2020.

Nelly (2021) aims to find how digitalization has become a significant strategy for the sustainability of MSMEs during the era of the Covid-19 pandemic. Using the qualitative approach of research and descriptive analysis and contextual technique it found that digitalization and e-marketing are very necessary for the survival of MSMEs in the pandemic. The data here are used as secondary collected from literature research and relevant online reporting documents.

Hariato et al (2021) establish a positive relationship between the performance of small and medium enterprises and implementation of digitalisation. This study states that digitalisation is the vital strategy for the survival of MSMEs in the era of Covid -19 pandemic. Using descriptive qualitative research approach substantiated by exploratory research method as well as participant observation in Entrepreneurship the result concludes that there is a decrease in sales turnover by more than 30 % through using conventional strategy. The finding of this research is that MSMEs achieves growth in sales turnover with the help of digitalization strategy. Therefore, it is very much essential to build the infrastructure of digitalisation for the purpose of online marketing of MSMEs products to obtain flourishing position in the market.

### **Objectives of the Study**

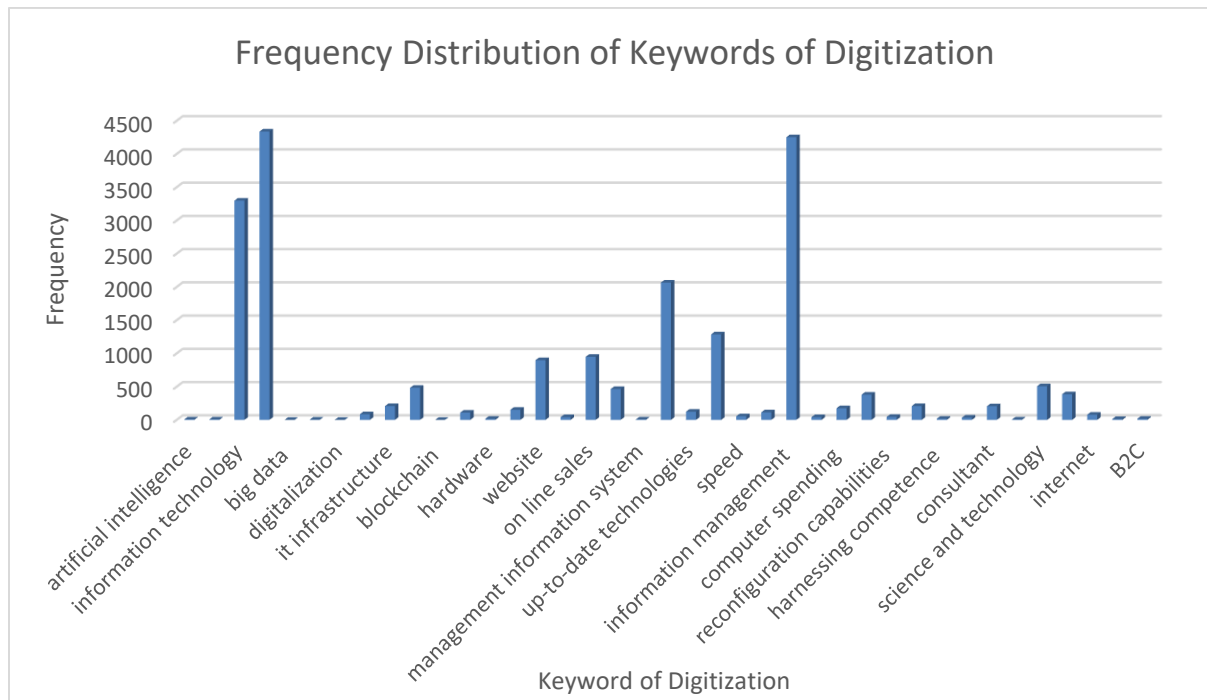
This study aims at finding to what extent the small and medium enterprises adopt the process of digitization in their business operation as well as marketing. It also seeks to evaluate whether the initiative for adoption of digitization be successful in the revenue growth of the companies.

### **Research Methodology**

A quantitative research approach has been adapted in this paper. For the purpose of the study around 80 small and medium enterprises have been taken as a sample from the website of the National Stock Exchange and Bombay Stock Exchange. 80 percent of the samples are manufacturing sectors and others are service sectors. In order to analyze the performances of these enterprises after the adoption of digitization certain keywords of digitization have been obtained from different kinds of literature on digitization, digitalization, and digital transformation of MSMEs. Using a data mining approach those collected keywords of digitization have been searched out in the annual report of the sample for the period of 2019-2020 for the purpose of generation of frequency. Further, this study attempts to find a relationship between the frequency and sales growth as well as shares in sales of each sample unit using statistical methods, e.g., the linear regression method. The data for the sales growth has been obtained from the money control website for the period of 2020-2021. The sales growth is defined by  $(Y_{2021} - Y_{2020}) / Y_{2020}$  here Y denotes total revenue for each sample unit. Moreover, an index has been computed as the relative frequency index ( $I_i$ ) defined by the ratio of the relative frequency of digitization ( $r_i$ ) and shares in sales ( $Y_i / \sum Y_i$  for the year 2021) for each sample unit in order to measure the efficiency of the company. It is denoted by  $(r_i) / Y_i / \sum Y_i$ . Clearly,  $I_i < 1$  implies the company is more responsive to digitization. On the other hand,  $I_i > 1$  then the company is less responsive to the process of digitization.

## Results and Analysis

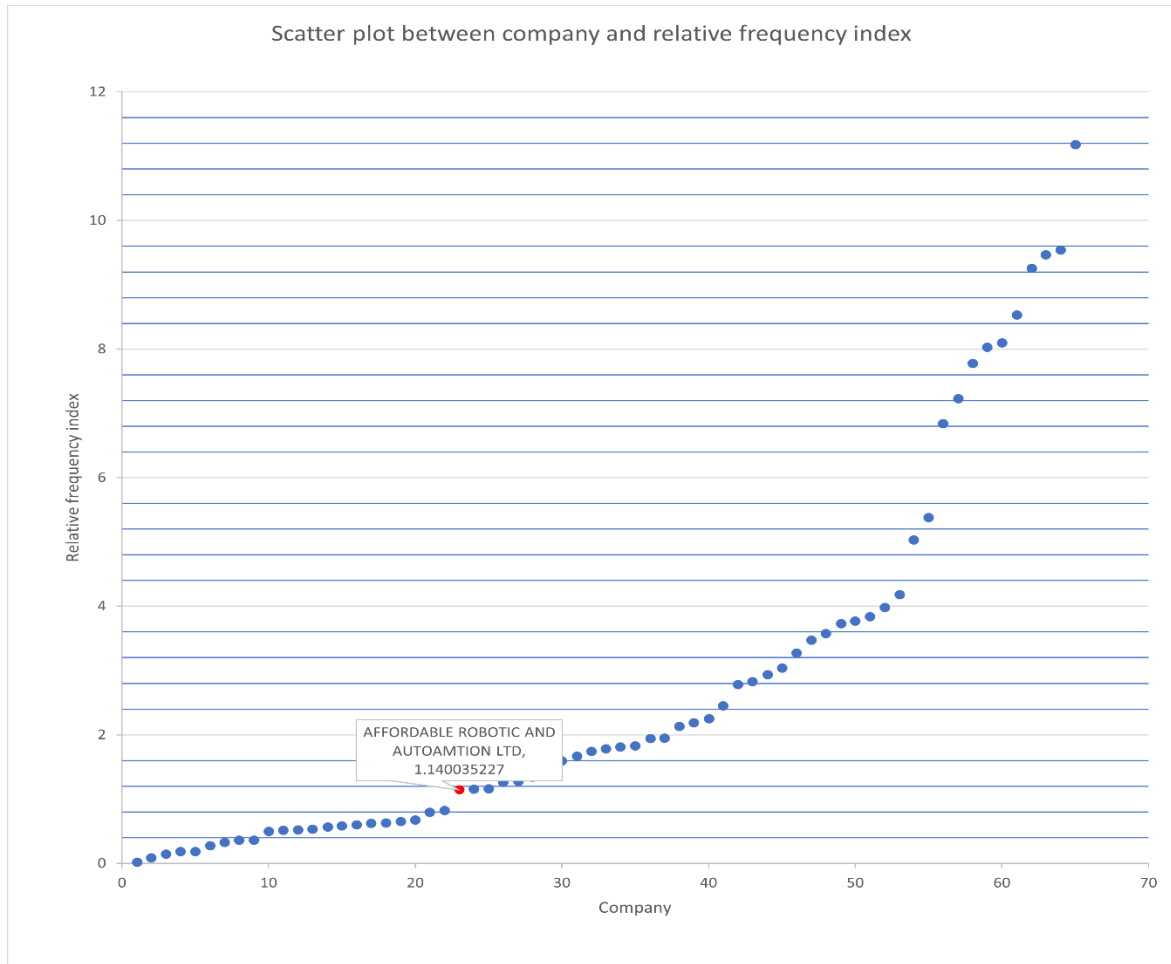
Figure 1 represents distribution of different keywords of digitization collected from vast literature. The frequency of these 39 keywords of digitization has been generated on basis of annual report of around 80 SMEs to observe how many times those keywords are mentioned in their report. Therefore, the study can find whether the enterprises are quite aware of the importance of those keywords of digitization and can apply in their business operation. In this figure it can be observed that keywords like information technology, quality control, IT infrastructure, information system, information management, online sales, website, internal process are frequently used in the annual reports of around 71.6% of manufacturing sectors and 28.4% of service sectors. It is also found that B2B and B2C are used by 11.5% of sample units out of which 66.6% are mentioned by manufacturing sectors with which it can be understood that these sectors can increase more efficient demand generation through digitization in B2B and B2C marketing.



**Figure 1: Frequency Distribution of Certain Keywords of Digitization**

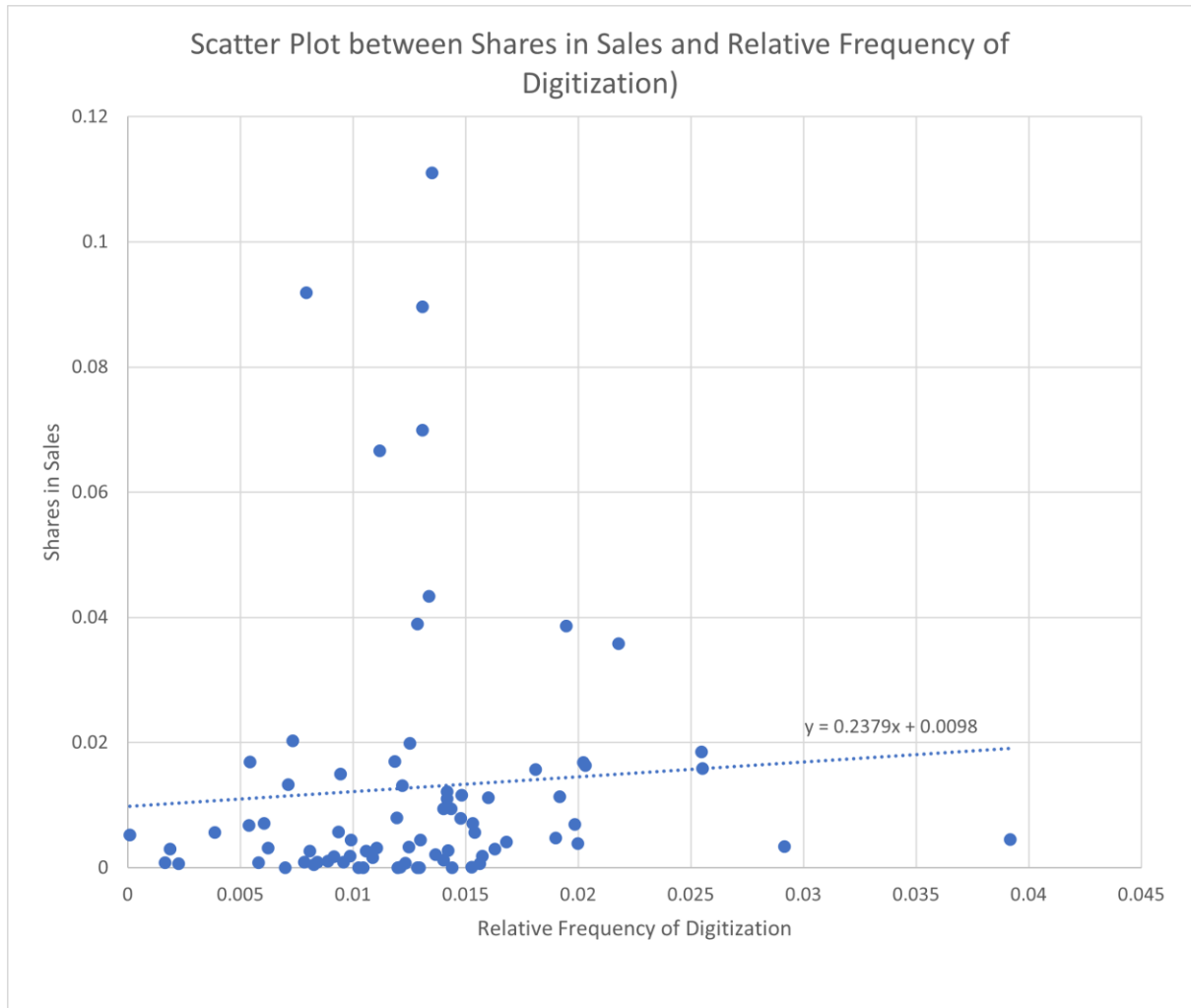
The figure 2 shows the distribution of the small and medium enterprises on the basis of relative digitization index. The relative digitization index is derived as ratio of relative frequency distribution to shares in sales for each company ( $I_i$ ). The index can be considered as indicator to measure the efficiency of a company which implies that what extent of relative digitization is required for a company to increase each unit of shares in total sales. It can be clearly considered that if the index of a company  $I_i < 1$  then the performance and achievement of that company is more responsive to digitization. On the other hand, if the index of a company  $I_i > 1$  then the achievement of that company is less influenced by digitization. Here in this figure almost 29% of SMEs are influenced by digitization as the index of these enterprises is below 1. About 77% of these efficient enterprises are manufacturing sectors consisting of distinctly textile (yarn, fabric) manufacturing firms, pharmaceuticals (antibiotics, Drugs), capital goods producing firms (ship building, iron casting, stone crusher). It is significant that pharmaceutical companies are more responsive to digitization in the era of Covid 19 pandemic in order to have a comparative advantage in producing drug for gains from international trade. It is also found that firm producing recyclable paper

fibre is more responsive to digitization which also indicates that firm’s awareness for reduction of environmental footprint as well as firm’s endeavour to obtain a place in the digital ecosystem.



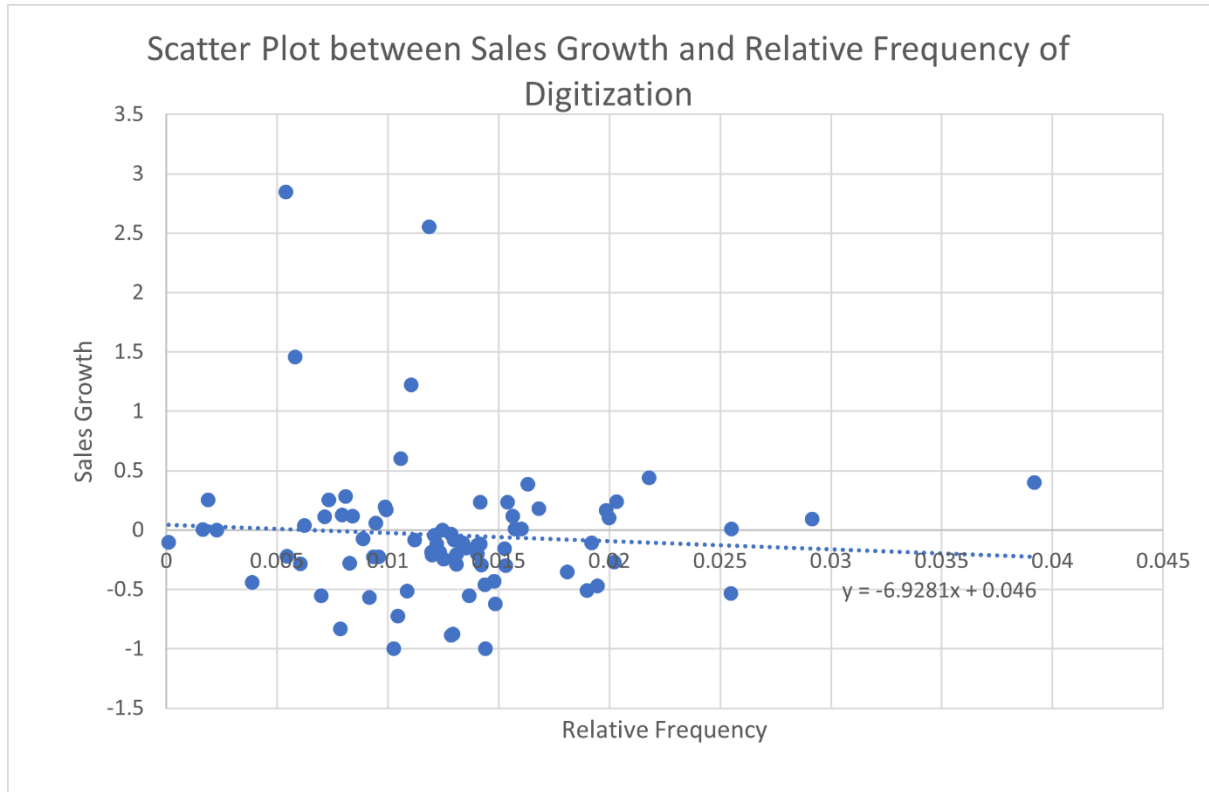
**Figure 2: Scatter Plot between Relative Frequency Index and Distribution of Companies**

In the Figure 3, the scatter plot represents performance of the company in shares in sales according to the relative frequency of digitization. After fitting the trend line this study finds that there is a positive correlation between the shares in sales and relative frequency of digitization during the period of Covid-19 pandemic. Hence, it can be said that digitization or digital transformation can enable the small and medium enterprises to thrive at the time of crisis. In the findings of this study, 11.5% of the sample are found to achieve highest shares in sales, out of which 77.78% are manufacturing sectors producing capital goods like industrial wire rods, steel tube, iron casting etc. Some of them are also textile firms.



**Figure 3: Scatter Plot between Shares in Sales and Relative Frequency of Digitization**

In the figure 4, the linear regression method is applied to establish a relationship between the sales growth of around 80 MSMEs and their relative frequency of digitization. Here, a negative trend line is found between the two variables. It is observed that that sales growth of all sample units is negatively related with digitization. The main cause of this unprecedented correlation is repetitive complete or partial lockdown announced during the Covid-19 pandemic. As it is evident that the Covid 19 pandemic has jeopardised the activities of every manufacturing sector as well as service sector of the economy across the world extensively. As MSMEs of the developing country is most vulnerable and incapacitated in dealing with such unprecedented crisis of Covid-19, the MSMEs are adversely affected by this intermittent partial or complete lockdown for 2 years. Another factor which exacerbated the adversity in the sales growth of MSMEs during pandemic is unawareness of digitization and difficulty in adopting digitization because in the outcome of this research it is observed that around 19% SMEs are under-digitized. It is also evident that the MSMEs in India has been suffered by facing 3-7% negative growth during the recent pandemic. But optimistically the MSMEs in India have also depicted 0.5 % in their growth (6). Some of the companies experienced positive sales growth by the extent of digitization during the period of the Covid-19 pandemic. It is also observed that 78% of positively growing SMEs are manufacturing sectors producing solar panel, equipment of water treatment plant, capital goods, textiles, pharmaceuticals etc.



**Figure 4: Scatter Plot Between Sales Growth of each company and Relative Frequency of Digitization**

### Conclusion and Scope of the Study

According to the findings of this study, 59% of SMEs who implemented traditional business strategies experienced negative growth because they are adversely affected and crippled by the Covid-19 pandemic whereas some of the sectors like food, pharmaceuticals, capital goods manufacturing shows their resilience during this pandemic. It can be pondered over that adoption of digitalisation enabled these positively growing enterprises to expand their operation given all the constraints created by the severity of Covid 19 pandemic. Therefore, this study suggests about the necessity of adequate improvement of infrastructure for digitalisation and digitization in SMEs. Further this study can be extended to analyse the growth of certain sectors of small and medium enterprises by giving more emphasis on pharmaceuticals, textiles, food, solar panel etc.

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