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IMPACT OF DIGITAL PRACTICES ON MSMES: A STUDY OF KARNATAKA STATE

KEY WORDS: MSMEs,

Commerce

Adoption of Digital Practices, Business operations, Awareness, Impact, Karnataka.

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Micro, Small and Medium enterprises (MSMEs) have a significant role in the socio-economic development of the Indian economy. However, they are facing different challenges like inefficient management, lack of finance, problem of skilled manpower, lack of digital literacy etc. In today's competitive world, the digital revolution has brought different opportunities to transform the business structure. The use of digital practices is very crucial for ensuring the success of business enterprises. In the present paper, an attempt has been made to identify the significant factors responsible for the adoption of digital practices and to analyse the impact of digital practices on day-to-day business operations of MSMEs in the state of Karnataka. The study considered 900 MSMEs and used factor analysis and logit regression model for the analysis. It is found that adoption of digital practices positively impacts on communications, inventory management, administration and maintenance, customer relations and also helps in marketing and advertisement activities of the business. Hence, MSMEs need to come forward to adopt the digital practices in their business operations.

INTRODUCTION

ABSTRACT

The Micro, Small and Medium Enterprise (MSME) sector play a vital role in the socio-economic development of the Indian economy. It consists of 633.88 lakh enterprises and create employment up to 11.10 Crore people around the country. Apart from that, it has a vital role in industrial production, exports, and GDP of the country. As per MSME annual report 2020-21, it has been providing 196.65 lakh jobs in manufacturing, 0.03 lakh in non-captive electricity generation and transmission, 230.35 lakh jobs in trade and 206.85 lakh jobs in other services. Out of total units, 630.52 lakh units are micro enterprises that accounts for 99% of total estimated number of MSMEs. 3.31 lakh and 0.05 lakh are small and medium enterprises accounted for 0.52% and 0.01%respectively. 324.88 lakh units are in rural area accounted for 51.25% and 309 lakhs i.e., 48.75% are in urban areas. This sector contributing 30.27% share to the GDP of the country (MSME Annual Report, 2020-21). It also generates 45% of the total manufacturing output and more than 40% of exports from India (RBI Expert Committee Report, 2019). This sector manufactures more than 8000 products related to machinery and equipment, fabricated metal products, electrical equipment, textiles, apparels, chemical products, motor vehicles etc. MSMEs have also maintained a higher growth rate (9.1% in 2013-14, 8.56% in 2014-15 and 7.62% in 2015-16) compared to total industrial growth rate (6.76% in 2013-14, 6.54% in 2014-15 and 6.6% in 2015-16). It shows the importance of MSMEs compared to overall industrial growth (RBI expert committee report, 2019). This sector is the best vehicle for inclusive growth, to create local demand and consumption and also to fight with the global meltdown (Chakrabarty, 2011).

Karnataka is considered as leading state in terms of industrial growth in India (www.karnataka.com retrieved on 15/11/22). So, it is one of the most desirable industrial locations in the country. The MSME sector forms an important and growing segment of Karnataka's industrial sector (Economic Survey of Karnataka, 2018-19). During the year 2019-20, a total of 97,232 MSME units have been registered with an investment of Rupees 18,59,727 by providing employment to 7,02,325 persons (DIC, Bengaluru). Under this, 80,379 are micro units, 16,069 small and 784 medium units have been registered with an investment of Rs. 4,70,352 lakh, 9,94,044 lakh and 3,95,331 lakhs respectively. Besides this, the MSME sector is facing different challenges in the competitive world.

In today's competitive world, the digital revolution has brought different opportunities to transform the business structure. The use of digital practices is essential for ensuring the success of business enterprises. Digital Practice relates to any technology or a method that helps to produce, generates, store, access and communication of information. As defined by Jones and et al. (2015) in their book titled 'Discourse and Digital Practices', 'Digital practices are the tools associated with digital technologies'. So, the use of digital practice is one of the measures that support to face the competition and grow the business to achieve their set targets. To be effective and successful, adoption of digital practice by MSMEs must be integrated into all areas of the business. The present paper is an attempt to identify the most significant factors responsible for the adoption of digital practice, and its impact on business operations of MSMEs.

Literature Review:

Literature Review In The International Context

Manochehri et al. (2012) revealed that companies in Qatar are making significant investment in ICT and there is a low competition amongst companies in the marketplace. The main driving forces for ICT investment were to provide better and faster customer service, better customer relationships, increase in revenue and in reducing costs and the competition. The study also found that the Qatari firms have adopted basic technologies (computers, productivity software, internet, accounting and HR packages) but are limited in the advance technologies such as wireless, data storage, network security solutions, ERP, CRM, SCM and E-Commerce.

Hoque et al. (2016) identified the impact of ICTs and the factors that influence the adoption of ICTs in SMEs located in the rural areas of Bangladesh. The study used random sampling method and has considered 150 respondents. According to this, most of the SMEs recognized that the importance of top management support, government support, financial support and awareness of benefits have a significant impact on ICT adoption and use. The analysis also showed that level of ICT adoption among SMEs in rural areas of Bangladesh is lower than expected. The study found a strong positive relationship between financial support and ICT adoption.

Bouwman et al. (2018) explored how digital technologies have forced small and medium sized enterprises (SMEs) to experiment with their business models. An empirical study was conducted on 338 European SMEs who had been using the social media and big data to innovate their business models. Findings of the study revealed that the use of social

media and big data in business models was mainly driven by the strategic and innovation related internal motives. External technology also plays an important role. The finding of the study showed that a business model driven by the social media and big data has a positive impact on the business performance.

Okundaye et al., (2019) studied how small-to medium-sized enterprises (SMEs) in Nigeria use information and communication technology (ICT) adoption as a business strategy to increase profitability and compete globally. Adopting information and communication technology impacted on the flexibility of an organization, job creation, efficiency productivity and growth, crime and fraud prevention, financial benefits, improved communication, advertisement, competitiveness, globalization and customer relationship.

Cenamor et al. (2019) investigated how entrepreneurial SMEs can enhance the performance through digital platforms. The study considered 230 entrepreneurial SMEs in Sweden. The analysis indicates that digital platform capability has a positive indirect effect on entrepreneurial SMEs' performance via network capability. The study suggested that entrepreneurial SMEs can enhance the performance of SMEs through digital platform capability by aligning the capability with their orientation.

Shettima and Sharma (2020) examined the challenges, need and opportunities of the digitalization of SMEs in Nigeria. The main objective of the study is to ascertain the impact of digitalization on the SMEs in Nigeria. A total of 500 respondents were targeted as the sample size and it adopted the Simple Random Sampling technique. Findings of the study showed that digitalization has a great impact on Small and Medium Enterprises of Nigeria as it automates the product and process as a result of which both quality and production increases.

Jayeola et al. (2022) analysed the impact of government financial support on the cloud ERP implementation success and how these effect on the financial performance of SMEs. The study considered 204 Malaysian manufacturing SMEs and used least square structural equation modelling method. Accordingly, government financial support has a positive influence on cloud ERP implementation success which improves the financial performance.

Literature Review In The Indian Context

Beley and Bhatarkar (2013) opined that the global economy is currently undergoing fundamental transformation in which IT plays a key role. Modern businesses are not possible without the help of information technology, which is having a significant impact on the operations of small and medium scale businesses (SMB).

Tarut and Gatautis (2014) analysed the literature on potential direct and indirect effects of ICT on SMEs performance and to identify those that can determine a business success. Results of this scientific work confirm that ICT has significant impact on the improvement of external and internal communication and the performance of SMEs. It is well known that marketing, communication, networking and resource planning are the areas that ICT impacts the most.

Biswas (2015) highlighted the various technologies' up gradation schemes available for the MSME sector. They are essential for enhancing competitiveness of the MSME sector. The paper also tried to analyse the role of technology in enhancing the production capability for the MSME sector. This was based on the extensive review of literature on the impact of technology on the MSME sector. The review showed that though technology has a positive impact on MSMEs but still MSMEs were a bit reluctant in making an effective use in the manufacturing process.

Singh et al. (2015) opined that without continuous technology innovation, no organization can ever remain competitive. Innovation is one of the main processes in MSMEs. Technology has a great significance in the present scenario. With the inflow of latest technology, helps in reducing cost of production and can increase the competition. Finally, it is concluded that MSMEs should perceive the technological innovation initiatives for better conditions that encourage firm's performance.

Singh (2017) revealed that there is a significant rise in the growth rate for SMEs owing to digitalization. Digitalization improves the performance of SMEs and also helps in reducing financial obstacles by providing alternative financing options to SMEs. It has resulted in the significant rise of SMEs operating performance, profitability and productivity.

Maiti and Kayal (2017) found that there is a significant rise in the growth rate for the India's services sector and MSME segment. Digitalization automates the product and process as a result of which both quality and production increases. The study recommended that the digitalization will improve the performance and help in reducing financial obstacles through digital platforms like e-commerce and crowd funding to MSMEs.

Statement Of The Problem

The country's economic growth is directly related to the survival and growth of MSME sector (Lahiri and Banerjee, 2019). Besides its significance in the economic growth, this sector has been facing different challenges or constraints like inefficient management, lack of finance, problem of skilled manpower, lack of digital literacy, technological obsolescence, lack of adaptability to changing trends, lack of access to international markets, and inadequate infrastructure. Further, rapidly developing technologies are offering the sector with unique opportunities to face the challenges. In order to leverage technology, a concerted effort has been undertaken by the government for the technological upgrade of Indian MSMEs. An attempt has been made in the present study to know the significant factors effect on adoption of digital practice by MSMEs in Karnataka.

Objectives Of The Study

The present study is aimed at addressing the following objectives:

- To identify the significant factors for the adoption of digital practices.
- 2. To analyse the impact of digital practices on daily business operations of MSMEs.

Research Hypotheses

The following hypotheses have been framed to test in the study:

Objective 2:

 $\rm H_{\scriptscriptstyle 0}:$ "There is no impact of digital practices on day-to-day business operations".

Sub hypotheses:

- $H_{0,i}$: "There is no impact of digital practices on benefits of communication".
- H_{02} : "There is no impact of digital practices on inventory management system".
- $\rm H_{\rm _{03}}$: "There is no impact of digital practices on administration and maintenance activities".
- $H_{\mbox{\tiny odd}}$:"There is no impact of digital practices on customer relations".
- $H_{\mbox{\tiny OS}}$: "There is no impact of digital practices on marketing and advertisement".

METHODOLOGY

The present study largely uses systematic inductive methodology for analysis, interpretation of results and

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drawing inferences and making decision.

Sources of Data Sampling frame

For the purpose of the study, both primary and secondary data were collected. The primary data collected from 900 MSME units registered under Udyog Aadhar Memorandum portal in the year 2019-20. The state of Karnataka has been chosen for the study. Within Karnataka, Bengaluru, Mysuru, Belagavi and Kalburgi districts have been chosen for primary data collection. A set of 25 factors were chosen to measure the impact of digital practices on MSMEs. Five-point Likert scale were used to design questions to the factors. The data were collected through the structured questionnaire and interview method by using Google forms and phone calls. The secondary data were collected from annual reports of MSMEs, Confederation of Indian Industry (CII) Reports, Karnataka Industrial Policy Reports, Economic Survey of Karnataka, RBI reports, different websites, books, and research articles.

Sample Size And Sampling Technique

The stratified proportionate systematic random sampling method used and 900 respondents were chosen for data collection.

Tool For Data Collection

The impact of adoption of digital practices on day-to-day business operations are determined by 25 factors which are taken under 5 components. Five-point Likert scale were used to design the questionnaire. The factor analysis has been performed to estimate the most significant factors responsible for the adoption of digital practices. Then, the impact of digital practices on business operations were analysed by using a regression analysis.

The list of factors used for the analysis of impact of adoption of digital practices are given below:

- I. Benefits of Communication
- 1. Communicate with clients
- 2. Fulfil the orders
- 3. Growth of business
- 4. Easy to take feedback
- 5. Satisfactory customer service
- II. Inventory Management System
- 6. Easy and fast delivery
- 7. Ease order materials
- 8. Reduce the cost of transportation
- 9. Reduce the shortage of materials
- 10. Transparency and coordination

III. Administration and Maintenance

- 11. Timely payment of salary
- $12. \ Address \, employee \, issues \, and \, complaint$
- 13. Maintain records
- 14. Maintain the discipline
- 15. Easy monitor employee performance

IV. Customer Relations

- 16. Offer better customer service
- $17. \ Maintain \, good \, relation \, with \, customers$
- 18. Quick response
- 19. Attract and retain the customers
- 20. Customer loyalty

V. Marketing and Advertisement

- 21. Promotion of products and services
- 22. Low cost of advertisement
- 23. Ease reach products
- 24. Effective advertisements
- 25. Enterprise reputation

7. Analysis and Interpretations:

Principal Component Analysis (PCA)

Principal Component analysis of a data matrix extracts the dominant patterns in the matrix in terms of a complementary set of score and loading plots (Wold et al. 1985). It was initially used for factors' extraction. But the factors have shown their intuition for more than one component. Accordingly, the structure matrix has been constructed using Pro-max rotated component matrix procedure.

The five components were identified by using scree plot for which, the Eigen value is greater than one (Refer fig.lin Appendix). Based on the Eigen value, five components are extracted and all five components together explain 77.598 percent of variation in total variation (Refer table 1 in Appendix). Kaiser-Meyer-Olkin (KMO) measures the sampling adequacy 0.918 (Refer Table 2 in Appendix) and it has been found that the KMO value is greater than 0.5 for sample size to be considered adequate for factor analysis. The significance level of Chi-square for Bartlett's Test of Sphericity (0.000) is less than 0.001. The chi-square test value is very high and significant. Accordingly, the Bartlett's test proved the relations among the factors are strong enough to run factor analysis.

The Pro-max method has identified all the 25 factors under five components which jointly determine the impact of digital practices on day-to-day business operations (listed in Table 1.1).

Table: 1.1 Structure Matrix

| Component | Factors | | | |
|----------------|------------------------------------|---------|--|--|
| | | loading | | |
| I. Benefits of | Communicate with clients | 0.832 | | |
| Communicatio | Fulfil the orders | 0.825 | | |
| n (Cl) | Growth of business | 0.711 | | |
| | Easy to take feedback | 0.852 | | |
| | Satisfactory customer service | 0.900 | | |
| II. Inventory | Easy and fast delivery | 0.896 | | |
| Management | Ease order materials | 0.898 | | |
| System (C2) | Reduce the cost of transportation | 0.860 | | |
| | Reduce the shortage of materials | 0.918 | | |
| | Transparency and coordination | 0.921 | | |
| III. | Timely payment of salary | 0.851 | | |
| Administration | Address employee issues and | 0.890 | | |
| and | complaint | | | |
| Maintenance | Maintain records | 0.891 | | |
| (C3) | Maintain the discipline | 0.866 | | |
| | Easy monitor employee | 0.857 | | |
| | performance | | | |
| IV. Customer | Offer better customer service | 0.798 | | |
| Relations (C4) | Maintain good relations with | 0.911 | | |
| | customers | | | |
| | Quick response | 0.851 | | |
| | Attract and retain the customers | 0.901 | | |
| | Customer loyalty | 0.871 | | |
| V. Marketing | Promotion of products and services | 0.907 | | |
| and | Low cost of advertisement | 0.859 | | |
| Advertisement | Easy reach products | 0.906 | | |
| (C5) | Effective advertisements | 0.899 | | |
| | Enterprise reputation | 0.875 | | |

Source: Primary data, results are computed by researcher

It has been found from the above analysis that the impact of digital practices largely influences on Inventory management system. In the second place, digital practices influence on Marketing and Advertisement. In the third and fourth place, digital practices are influence on Administration and Maintenance and Benefits of Communication respectively. In the last, digital practices also helps in managing Customer Relations.

Logit Regression Analysis

A regression model has been performed by taking 5 components (C_1 , C_2 , C_3 , C_4 , C_5). are as dependent variables and adoption of digital practices as the independent variable. In the present study, logit regression model has been used to analyse the impact of digital practices on Communication (C1), Inventory Management System (C2), Administration

and Maintenance (C3), Customer Relations (C4) and Marketing and Advertisement (C5). Logit means log on it, that means log probability of expected success. Logit is a qualitative response dummy dependent model. The logit regression model is constructed to analyse the impact of digital practices on Communication, Inventory Management System, Administration and Maintenance, Customer Relations and Marketing and Advertisement.

The model and their results and also the interpretations are given below.

 $\mathbf{Y} = \boldsymbol{\alpha} + \boldsymbol{\beta}_{n} \mathbf{X}_{n} + \mathbf{u}$

Where:

Y = Business operations

- α = Constant of the model,
- $\beta_{\tt n} = {\rm Coefficients} \, of \, {\rm Independent} \, {\rm Variables}$
- $X_n = Adoption of Digital Practices$
- u = The error or disturbance term

Testing hypotheses

The followings are the hypotheses:

Hypothesis 1:

- \mathbf{H}_{0} : "There is no impact of digital practices on benefits of communication".
- \mathbf{H}_{1} : "There is an impact of digital practices on benefits of communication".

Table: 1.2 Impact of Digital Practices on Benefits of Communication

| Dependent Va | | | | |
|---|-------------|------------|-------------|-----------|
| Method: ML - Censored Normal (TOBIT) (Quadratic hill | | | | |
| climbing) | | | | |
| Variable | Coefficient | Std. Error | z-Statistic | Prob. |
| С | 0.647303 | 0.016329 | 39.64024 | 0.0000 |
| ADOPTION | 0.239789 | 0.028498 | 8.414166 | 0.0000*** |
| Source: Primary data results are computed by researcher | | | | |

Source: Primary data, results are computed by researcher

The above hypothesis is tested with logit regression model to verify the impact of digital practices on benefits of communication. The result showed that P<0.05 and therefore the null hypothesis is rejected and alternative hypothesis is accepted. Hence "there is an impact of digital practices on benefits of communication".

Hypothesis 2:

- H_o: "There is no impact of digital practices on inventory management system".
- H₁: "There is an impact of digital practices on inventory management system".

Table: 1.3 Impact of Digital Practices on Inventory Management System

| Dependent Variable: Inventory Management | | | | |
|--|-------------|------------|-------------|-----------|
| System | | | | |
| Method: ML - Censored Normal (TOBIT) (Quadratic hill | | | | |
| climbing) | | | | |
| Variable | Coefficient | Std. Error | z-Statistic | Prob. |
| С | 0.615573 | 0.017149 | 35.89473 | 0.0000 |
| ADOPTION | 0.249701 | 0.029927 | 8.343751 | 0.0000*** |

Source: Primary data, results are computed by researcher

The above hypothesis is tested with logit regression model to verify the impact of digital practices on inventory management system. The result showed that P<0.05 and therefore the null hypothesis is rejected and alternative hypothesis is accepted. Hence "there is an impact of digital practices on inventory management system".

Hypothesis 3:

 \mathbf{H}_{0} : "There is no impact of digital practices on administration and maintenance".

H₁: "There is an impact of digital practices on administration and maintenance".

Table: 1.4 Impact of Digital Practice on Administration and Maintenance

| Dependent Variable: Administration and Maintenance | | | | |
|--|-------------|------------|-------------|-----------|
| Method: ML - Censored Normal (TOBIT) (Quadratic hill | | | | |
| climbing) | | | | |
| Variable | Coefficient | Std. Error | z-Statistic | Prob. |
| С | 0.678215 | 0.016091 | 42.14823 | 0.0000 |
| ADOPTION | 0.172137 | 0.028083 | 6.129625 | 0.0000*** |

Source: Primary data, results are computed by researcher

The above hypothesis is tested with logit regression model to verify the impact of digital practices on administration and maintenance activities. The result showed that P<0.05 and therefore the null hypothesis is rejected and alternative hypothesis is accepted. Hence "there is an impact of digital practices on administration and maintenance".

Hypothesis 4:

- \mathbf{H}_{0} : "There is no impact of digital practices on customer relations".
- $\boldsymbol{H}_{1}\text{:}$ "There is an impact of digital practices on customer relations".

| Dependent V Relations | ariable: Cus | | | | |
|--|--------------|------------|-------------|-----------|--|
| Method: ML - Censored Normal (TOBIT) (Quadratic hill climbing) | | | | | |
| Variable | Coefficient | Std. Error | z-Statistic | Prob. | |
| С | 0.639483 | 0.015727 | 40.66203 | 0.000 | |
| ADOPTION | 0.276856 | 0.027437 | 10.09044 | 0.0000*** | |

Source: Primary data, results are computed by researcher

The above hypothesis is tested with logit regression model to verify the impact of digital practices on customer relations. The result showed that P<0.05 and therefore the null hypothesis is rejected and alternative hypothesis is accepted. Hence "there is an impact of digital practices on customer relations".

Hypothesis 5:

- **H**₀: "There is no impact of digital practices on marketing and advertisement".
- \boldsymbol{H}_{1} : "There is an impact of digital practices on marketing and advertisement".

Table: 1.6 Impact of adoption of Digital Practices on Marketing and Advertisement

| Dependent Variable: Marketing and Advertisement | | | | |
|--|-------------|------------|-------------|-----------|
| Method: ML - Censored Normal (TOBIT) (Quadratic hill climbing) | | | | |
| Variable | Coefficient | Std. Error | z-Statistic | Prob. |
| С | 0.621875 | 0.015236 | 40.81664 | 0.0000 |
| ADOPTION | 0.328051 | 0.026590 | 12.33728 | 0.0000*** |
| | | | | |

Source: Primary data, results are computed by researcher

The above hypothesis is tested with logit regression model to verify the impact of digital practices on marketing and advertisement. The result showed that P<0.05 and therefore the null hypothesis is rejected and alternative hypothesis is accepted. Hence "there is an impact of digital practices on marketing and advertisement".

Findings and Conclusion

It can be observed from the factor analysis that Inventory management system is the major force that influence the adoption of digital practices followed by Marketing and Advertisement, Administration and Maintenance, Benefits of

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Communication and Customer Relations. It has also been found from the study that adoption of digital practices positively impacts on communication, inventory management, administration and maintenance, customer relations and helps in marketing and advertisement. Hence, Government has to give more concentration on creating the awareness about the digital literacy through orientations and workshops. Furthermore, MSMEs need to come forward to understand the importance of digital practices. It helps to adopt more digital practices into their business operations.

Scope For Further Research

An attempt can be made by focusing on quantitative data like profits, sales, and turnover of MSMEs and comparison can be made by considering before and after adoption of digital practices.

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