

## THE IMPACT OF DIGITAL BANKING ON THE GROWTH OF MICRO, SMALL AND MEDIUM ENTERPRISES (MSMES) IN INDIA: A CASE STUDY

Bharat Kumar MEHER<sup>1</sup>, Iqbal Thonse HAWALDAR<sup>2</sup>, Latasha MOHAPATRA<sup>3</sup>,  
Cristi SPULBAR<sup>4</sup>, Ramona BIRAU<sup>5\*</sup>, Cristian REBEGEA<sup>6</sup>

<sup>1</sup>D.S. College, Katihar, Under Purnea University, India

<sup>2</sup>College of Business Administration, Kingdom University, Bahrain

<sup>3</sup>Manipal Academy of Higher Education, Manipal, Karnataka, India

<sup>4</sup>Faculty of Economics and Business Administration, University of Craiova, Romania

<sup>5</sup>Faculty of Education Science, Law and Public Administration,  
C-tin Brancusi University of Targu Jiu, Targu Jiu, Romania

<sup>6</sup>Faculty of Economics and Business Administration, University of Craiova, Craiova, Romania

Received 30 May 2020; accepted 8 September 2020

**Abstract.** *Purpose:* The purpose of this paper is to formulate a multiple regression model by considering those factors which are positively affecting the growth of Micro, Small and Medium Enterprises (MSMEs) in India.

*Methodology:* The data used in this study are primary in nature which are collected through questionnaire method. The questionnaire involves the nature and size of business and opinion of the owners and managers of 454 MSMEs in Katihar district, a semi-urban area of Bihar in India, regarding the various favourable factors of digital banking on a Likert scale of 1 to 10. *Findings:* The findings of the study suggest the various favourable factors of digital banking with significant coefficients i.e. Level of Easiness in accepting payments, Level of Easiness in making payments, Level of Easiness in Managing the expenditure of Business, Level of Time Saving, and Level of Check on Misappropriation or Theft of Cash are contributing towards the growth of MSMEs in India.

*Research Implications:* This research will be helpful to the bank managers and policy makers to encourage the MSMEs of semi-urban areas to use digital banking by stressing on only significant favourable factors and also to take necessary steps so that the MSMEs could reap the full benefits of digital banking. The study could give a new insight regarding the extent of contribution of digital banking towards the growth of MSMEs in rural and semi-urban area.

**Keywords:** MSMEs, digital banking, e-banking, multiple regression, customer, business.

**JEL Classification:** C30, O3, E59.

### Introduction

In the current scenario it is desirable for the whole of India to be an active part of the digitization process. That is the reason, the banking sector of India has completely transformed itself by introducing the digital banking. Digital banking is the transformation of physical banking wherein customers have to be present in bank branch for banking transactions like checking account balance, funds transfer, etc. Nowadays “in case of banks, the online system has been preferred by the educated and young people as it is beneficial to them in many ways” (Jauhari et al., 2018). The customers who were previously waiting in a long queue in banks just to withdraw money to use hard cash for the purpose of payments, to transfer the

money to a distant person through National Electronic Fund Transfer (NEFT) or Real Time Gross Settlement (RTGS) and sometimes to update the passbook to know their present bank balance, are now using digital banking and doing all such banking activities with a mere click of mouse or with a mere touch of finger on their cell phone. “Besides flexible usability, digital banking is cost effective and more business efficient” (Patra & Ray, 2015). It has helped to save their time and other resources and now customers need not go to the bank branch for banking services. The customers can perform various banking services with the help of internet at any time at any place (Hawaladar et al., 2017). Digital banking not only facilitates the consumers but also benefited a lot to the businesses in many ways.

\*Corresponding author. E-mail: [ramona.f.birau@gmail.com](mailto:ramona.f.birau@gmail.com)

The acceptability level of digital banking among consumers as well as businesses in India has increased during the demonetization in 2016 and India is now moving at a faster pace for a cashless future after November 8, 2016 when the Indian government demonetized 500 and 1,000 denomination currency notes from circulation. This action compelled the businessmen to use digital banking in the form of NEFT, RTGS and other E-wallets services to accept the payments made by the customers. “The use of mobile banking and online shopping encourages the customers to buy more without caring the hard cash available with them at the time of purchasing” (Farida & Subroto, 2019). Moreover, “electronic banking is expected to affect the operations and performance of small and medium scale enterprises in a form of transactional convenience, saving of time, quick transaction alert and cost saving” (Aliyu, 2012). The reason for considering the growth of MSME sector of India, is India’s Micro Small Medium Enterprises (MSME) base is the largest in the world after China. The sector provides a wide range of services and is engaged in the manufacturing of more than 6000 products ranging from traditional to hi-tech items. The reason for taking the state, Bihar, is that it has highest number (7,70,871) of registered MSMEs followed by Uttar Pradesh (5,96,036) Delhi (5,88,483), Maharashtra (5,70,101) and Gujarat (4,86,080) (Askari, 2018). The purpose behind taking Katihar as sampling unit because it is a small town which is MSMEs dominated but with less literacy of digital banking among people prior to demonetization. The pilot survey of 50 MSMEs with many open end questions and interview has been conducted. The response rate was 100%. The purpose of the pilot survey is to find out major favourable factors of digital banking affecting the profitability or growth of MSMEs business. Again with the help of questionnaire method opinion of owners and managers of MSMEs regarding the beneficial level of major favourable factors of digital banking and the impact on growth after using digital banking has been collected by targeting 600 MSMEs where response rate was 75.66% i.e. 454. This study is an attempt to study the impact of positive effects of the digital banking on the growth of MSMEs in India by formulating a multiple regression model, considering the opinion of MSMEs from the mentioned sampling unit.

## 1. Literature review

Many studies have been done in the area of digital banking, some of which with different objectives with different places or sampling units are stated here. A study shows the impact of average number of users of digital channels of communication with digital banks, average share of deposits opened via remote banking, number of online loans and total number of loans issued on performance of digital banks i.e. Return on Assets of 16 Russian Banks with the help of a regression model (Koroleva & Kudryavtseva, 2019). Again, a study comprised 182 respondents including managers, deputies, and experts of Shahr bank from its branches in Tehran, Iran to formulate a regression model

to show the effect of the development of new banking services i.e. internet banking, telephone banking, mobile banking, ATM development and Point of Sale Terminals on a bank’s market share (Nazaritehrani & Mashali, 2020). Moreover, a comparative study explores 22 problems of e-banking and ranked the significant problems with the help of Standardized Canonical Discriminant Function Coefficients among the new users at Thiruvananthapuram District in India by collecting data from the customers of SBI and Corporation bank in Thiruvananthapuram district (Dhanya & Velmurugan, 2020).

Similarly, a study found that trust, perceived security and perceived usefulness are the best predictors for digital payment and banking adoption in Gulf countries through literature review by performing weight and meta-analysis (Alkhowaiter, 2020; Pinto et al., 2017a; Pinto et al., 2017b). A study aims to evaluate the factors affecting the intention to use digital banking in Vietnam using multivariate data analysis (Nguyen, 2020). Nevertheless, a study proposed a structural model by re-examining the impact of variables namely perceived usefulness, perceived ease of use, perceived enjoyment, security, trust, Social Influence, Self-Efficacy, Facilitating Conditions, Attitude on Intention to adopt mobile wallet by the consumers in India using Partial Least Square. A study by (Chawla & Joshi, 2019; Hawaldar et al., 2020) provides a conceptual framework to classify new digital monies, identify some of their risks, think through the implications, and offer some policy options for central banks to consider. The focus is mostly on the interplay between new forms of money and the banking sector; thus, on financial stability and consumer protection (Adrian & Mancini-Griffoli, 2019). Moreover, a study proposed a structural equation model by taking 220 participants who have used or intend to use mobile banking (M-banking) in Vietnam, to explain role of one of the latent variable, called antecedent (e-WOM) with the intermediates (ease of use, perceived usefulness, trust, and perceived costs), on the intention to use mobile banking (Nguyen et al., 2019). Similarly A study based on a survey on modern M-Banking and five different categories of M-banking services are determined, and the functionalities, advantages, disadvantages, security issues of it are listed out (Vishnuvardhan et al., 2020).

In addition to that a study examined the impact of four electronic banking services i.e. ATM, mobile banking, transaction alerts and point of sale service on the performance of small and medium scale enterprises with moderating variable as gender, age, marital status and education level in Anambra State, which is one of the states with the highest number of SMEs in Nigeria (Mbah & Obiezekwem, 2019). Similarly, a study depicted a model that shows the impact of convenience (privacy & security), accessibility (easiness to use & access to information), service delivery (speed & safety), cost (operation and transportation cost) of mobile banking services on the financial performance (capital base, customer satisfaction, revenue, net profit) of SMES in Kakamega County (Muchiri, 2018). Another research work was carried out to study the adoption of digital banking services and other related issues

among 100 rural people from Sivasagar district of Assam in India (Neog, 2019). A study examined the factors influencing the adoption of digital banking by retail banking customers using primary from 200 customers. A theoretical model was developed based on an extended technology acceptance model to conceptualize the linkage among the factors impacting digital banking adoption (Ananda et al., 2020)

The researches done earlier were not enough that shows the impact of various favourable reasons of using digital banking on the growth of MSMEs in semi-urban area. Hence this research gap can be a feasible study. Moreover, it is an advanced study done earlier taking same sampling unit (Meher & Gupta, 2020a, 2020b; Lokesha & Hawaldar, 2018; Lokesha et al., 2017). Therefore, this paper is an attempt to determine the significant variables of digital banking that are positively affecting the growth of MSMEs by observing the significance value of the coefficients of different independent variables that are considered in this study and also to frame a model that could represent the impact of various favourable reasons of using digital banking on the growth of MSMEs in India.

Our research study provides an additional contribution to the existing literature such as: Spulbar and Nițoi (2012), Spulbar et al. (2012), Spulbar and Nițoi (2013), Spulbar and Birau (2019), Mehdiabadi et al. (2020) and many others.

## 2. Hypotheses development

There are various sustaining determinants due to which the MSMEs of Katihar district are using digital banking. Only those major favourable determinants are considered for the formulation of the model which are selected after analysing the opinion of 50 owners and managers of MSMEs in Katihar District of Bihar.

### 2.1. Ease in accepting payments from customers or debtors

Digital banking facilitates the MSMEs in accepting payments from customers or debtors via NEFT, RTGS, IMPS, e-wallets. Moreover, the amount accepted from customers would be directly deposited into bank account. This also reduces the chances of bad debt as the customers could not avoid making of payment due to lack of hard cash. In the context of digital banking, ease in accepting payments would positively affect the profitability of MSMEs as it saves times in collecting payments and also reduces the chances of bad debt at the time of cash payment. Hence the alternative hypothesis can be formulated as following:

$H_{1A}$ : Ease in Accepting Payments has a Positive Relationship with the Profitability of MSMEs.

### 2.2. Ease in making payments to suppliers/creditors

Similarly, it also helps in making payments to suppliers or creditors via electronic bank transfer or e-wallets with just a mere click on computer or smartphone. "Accessibility of digital banking has to do with the ease with which

customers have access to financial tools, their accounts, ease of making payments from their accounts and access to money available in the accounts using various digital channels namely, online banking facilities, ATMs, POS terminals, mobile banking to mention but a few" (Muchi-ri, 2018). In the context of digital banking and growth of MSMEs, ease in making payments to suppliers or creditors reduces time and cost with ultimately affects the profit of MSMEs. Hence the alternative hypothesis can be formulated as following:

$H_{1B}$ : Ease in Making Payments by using Digital Banking has a Positive Relationship with Profitability of MSMEs.

### 2.3. Ease in managing the expenditure of business

Now a days businessmen are not much worried regarding the payment of various expenditure like rent, electricity bill etc. on due time. The businessmen could easily track on the expenditure as the digital banking records all these transactions automatically this helps in the MSMEs to saves times and cost and that is reason more the ease in managing the business expenditure there is more possibility in the growth of MSMEs. Hence the alternative hypothesis can be formulated as following:

$H_{1C}$ : Ease in Managing Expenditure of business by using Digital Banking has a Positive Relationship with the Profitability of MSMEs.

### 2.4. Saves time

Before the digital banking had been introduced, people used to go to banks and they have to stand in a long queue for any work like depositing or withdrawing cash, updating passbook, transfer of money etc. but now, i.e. after the introduction of digital banking they don't need to stand in any queue, for the purpose of banking activities. They can manage all the above mentioned work with a mere click on smartphone or laptops which not only saves time, energy and cost but also assist MSMEs to focus core work of the business which helps them to increase their profits. Hence the alternative hypothesis can be formulated as following:

$H_{1D}$ : Saves time by using Digital Banking has a Positive Relationship with the Profitability of MSMEs.

### 2.5. Not required to carry hard for the purpose of business

For any business purposes, like purchase of stock, raw-materials, loose tools, plant and machinery, other assets, etc, businessmen were bringing cash with themselves to other towns or cities, but after the digital banking came into effect, they can replace carrying of hard cash with plastic money, i.e. cards (debit or credit cards) or electronic fund transfer. "The cashless transition is not only safer than the cash transaction but is less time consuming and not a trouble of carrying and trouble of wear and tear like paper money" (Kumar, 2017). Moreover, it is "reducing the risk of crime by removing the need to carry around cash

is significant” (Muchiri, 2018). The more convenient the businessmen get in carrying digital cash, more the chances of reduction of risk of crime or theft which ultimately improve the performance of businessmen of MSMEs. Hence the alternative hypothesis can be formulated as following:

H<sub>1E</sub>: Level of Non-requirement of Carrying Hard Card by using Digital Banking has a Positive Relationship with the Profitability of MSMEs.

## 2.6. No misappropriation or theft of cash

Earlier, when businessmen were not using digital banking, they always had a fear regarding misappropriation of cash by their staffs. But now if they accept cash from customers then it will be directly deposited into the account of business and hence there is very less chance of misappropriation of cash.

H<sub>1F</sub>: Level of Check on Misappropriation/Theft of Cash by using digital banking has a Positive Relationship with the Profitability of MSMEs.

## 2.7. Ease in applying and approval of short term loan or overdraft

Many banks are now facilitating to the current account holders to apply for short term loan or overdraft even by digital banking. “SMEs can access credit through mobile finance that helps them achieve short-term needs of the business” (Mararo & Ngahu, 2017). Prior to internet banking the businessmen need to apply for short term loan or overdraft by visiting the bank officials to take prior approval which was a cumbersome and time taking process. At present, businessmen can easily arrange short term loan or overdraft from their banks by using digital banking which not only saves time and cost but also helps them in smooth running of business. Hence the alternative hypothesis can be formulated as following:

H<sub>1G</sub>: Ease in Applying and Approval of Short term loan by using Digital Banking has a Positive Relationship with the Profitability of MSMEs.

## 2.8. Benefit of cash back or discount

The other benefit of using digital banking is that whenever we make payment through digital banking, mainly payment by Paytm or Google Pay or Phonpe, we get some cash back also. This benefit was not available earlier. Some of the MSMEs in Katihar district opined that they get some cash benefit and discount while making payments through digital banking.

H<sub>1H</sub>: Benefit of Cash Back or Cash Discount by using Digital Banking has a Positive Relationship with the Profitability of MSMEs.

## 3. Research methodology

### 3.1. Sample and data collection

The study is Empirical in nature. The data used in this study are primary in nature. A small pilot survey of 50

MSMEs has been done where the open end questions have been asked regarding various favourable reasons for using digital banking. After analysing the opinion given by the 50 owners or managers of MSMEs of Katihar District only major favourable reasons have been selected which may be positively affecting the growth of MSMEs in India. The primary data have been collected with the help of a questionnaire that has been framed in both English and Hindi language for the purpose of ease in understanding the questions to the respondents. The questionnaire involves the nature of business, size of business i.e. Micro, Small and Medium, and opinion of the owners or managers of MSMEs regarding the various favourable reasons or factors of digital banking that are contributing towards the growth of MSMEs of Katihar District of Bihar on a Likert scale of 1 to 10. Moreover, an opinion regarding the impact on profitability position of MSMEs due to the use of digital banking has also recorded.

As per Katihar District Industrial Potential Survey, there are 1642 registered MSMEs as on 31<sup>st</sup> March, 2016 which has been increased to 1814 on 31<sup>st</sup> March, 2019 in Katihar District. Apart from that there are about 2700 unregistered MSMEs in the district. Taking a population size of 4514 with confidence level as 95% the sample size came up is 355. In order to cover atleast 355 MSMEs an attempt has been made to collect data randomly from 600 MSMEs by distributing a questionnaire to those MSMEs. The reason for targeting more respondents is to remove those respondents who have given incomplete information or whose information are considered as outliers for the study. Enumerators have been appointed to distribute the questionnaires to 600 MSMEs and help the respondents to fill up the data in case of difficulty in understanding any question. To achieve the random sampling, the enumerators were free to choose any MSME for data collection. Out of these 600 targeted respondents, only 454 respondents have given full and complete information. The data has been collected during September, 2019 to January, 2020.

### 3.2. Construct measurement

For the purpose of normality check, all the variables considered for the formulation of the model have been examined with the help of the descriptive statistics i.e. skewness and kurtosis, to check whether the data is normally distributed. If the data is not normally distributed, then twostep process suggested by Templeton in 2011 has been used to make it normally distributed.

### 3.3. Data analysis

Step Wise Regression has been used to frame a model that could represent the impact of various significant favourable reasons of using digital banking on the growth of MSMEs in India.

### 4. Results and discussion

A survey has been conducted within Katihar District with the help of questionnaire method by taking the help of enumerators. The response rate was 76% i.e. 454 out of 600. The results and analysis are explained below with the help of tables and diagrams.

Table 1. Different sizes of business with different nature covered in the study

Number	Nature of Business	Size of Business			Total
		Micro	Small	Medium	
1	Books & Stationery	24	6	0	30
2	Electronics	14	36	0	50
3	Food Centres (including hotels)	26	28	12	66
4	Furniture	12	10	4	26
5	Garments/ Footwear	24	36	6	66
6	General store	0	2	0	2
7	Grocery/ Cosmetics	60	18	0	74
8	Hardware	2	2	0	4
9	Jewellery	16	16	2	34
10	Medicines	10	18	0	28
11	Providing any kind of services	36	26	8	70
	Total	224	198	32	454

The above table (Table 1) mentioned the number of micro, small and medium enterprises with different nature of businesses covered under the study.

#### 4.1. Conceptual framework – about the variables used in formulation of model

The above sustaining determinants are considered as independent variables and the growth of MSMEs is considered

as dependent variable. The impact on profit of MSMEs business in Katihar while using digital banking has been considered equivalent to the growth of MSMEs business. This can be clear with the help of the Figure 1.

#### 4.2. Formation of Multiple Regression model

For the purpose of formulation of model, it is necessary that the variables are normally distributed. For this, all the variables considered for the formulation of the model have been examined with the help of the descriptive statistics to check whether the data is normally distributed. The results of Skewness statistics and Kurtosis Statistic represent that all the variables except the variable Ease in Making Payments, were moderately skewed as the value of Skewness Statistics were within the range of (-)1.00 to (-)0.5. As the variables were not normally distributed, it was necessary to make them normally or approximately normally distributed by using the two step process (Templeton, 2011). The first step to convert the variables into Percentile Rank with help of the Equation 1.

$$\text{Percentile Rank} = 1 - [\text{Rank}(X_i)/n], \tag{1}$$

where, Rank ( $X_i$ ) = rank of value  $X_i$ ,  $n$  = sample size i.e. 454. The second step is to transform to normality by using the Equation 2.

$$p = \mu + \sqrt{2} \cdot \sigma \cdot \text{erf}^{-1}(-1 + 2Pr), \tag{2}$$

where,  $p$  = z-score resulting from second step;  $\text{erf}^{-1}$  = inverse error function;  $\mu$  = mean of  $p$  (recommendation is 0 for standardized z-scores);  $\sigma$  = standard deviation of  $p$  (recommendation is 1 for standardized z-scores);  $Pr$  = probability that is the result of Step 1.

After using the two step process of transforming data into normally distributed, the results of Mean, Standard Deviation, Skewness and Kurtosis are given in the Table 2.

The Table 2 represents the value of Mean Statistic, Standard Deviation, Skewness and Kurtosis Statics of all the independent variables and dependent variable after transforming the actual values of the variables with the help of two step process. After transformation, it could be observed that all the variables have become approximately

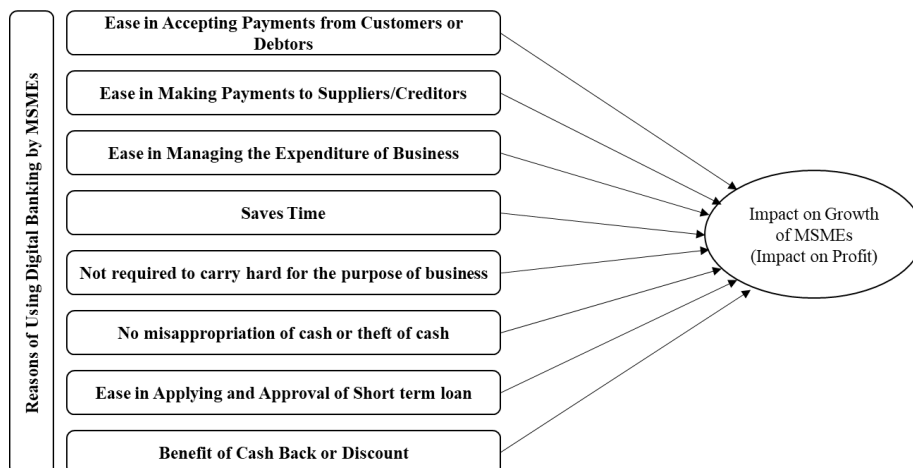


Figure 1. Flow chart showing the predictors and dependent variable

Table 2. Results of mean, standard deviation, skewness & kurtosis

No.	Variables	Mean Statistic	Std. Deviation Statistic	Skewness Statistic	Kurtosis Statistic
1	Ease in accepting payments from Customers/Debtors	6.4451	2.16901	-.002	-.460
2	Ease in making payments to Suppliers/Creditors	6.7074	2.10187	-.056	-.453
3	Ease in Managing the expenditure of business	6.1851	2.09035	.003	-.337
4	Saves Time	7.4197	2.01776	-.235	-.608
5	Not Required to carry hard cash while travelling for the purpose of business	7.2322	2.10550	-.217	-.574
6	No misappropriation of cash or theft of cash	6.7550	2.02979	-.100	-.422
7	Ease in applying and approval of short term loan or overdraft	7.0975	2.21916	-.171	-.595
8	Benefit of Cash Back or Discount	5.7006	2.22178	.004	-.466
9	Impact on Profit	2.9437	1.56075	.394	-.335

normal as the value of Skewness of all the variables are now within the range between -0.5 to +0.5.

After transforming the variables into normally distributed, a multiple regression model has been framed to know whether the model is significant and the relationship between the independent and dependent variable is as per the alternative hypothesis framed from H1A to H1H. The result of the regression model is given in the Table 3.

The Table 3 shows the results of multiple regression model 1. The table has three components, first the results of ANOVA, second the results of Coefficients and last the

summary of Model-1. In the first component, the value of F statistics is significant as the p value is less than 0.05 which represents that the above Model-1 framed by considering the selected independent variables, fits the data better than the intercept only.

The third component where the value of R square is 0.386 states that the explanatory variables are capable to explain 38.6% of the explained variable (dependent variable).

In the second component where the coefficients of independent variables are concerned, the five variables namely Ease in accepting payments from Customers/

Table 3. Results of regression Model-1 considering all the 8 independent variables

ANOVA <sup>a</sup>						
Values	Sum of Squares	df	Mean Square	F	Sig.	
Regression	517.279	8	64.659	35.084	.000	
Residual	820.135	445	1.843			
Total	1337.414	453				
Coefficients						
Constant and Independent Variables			Unstandardized Coefficients		t	Sig.
	B	Std. Error				
(Constant)		2.267	.342	6.636	.000	
Ease in accepting payments from Customers/Debtors		.110	.044	2.486	.013	
Ease in making payments to Suppliers/Creditors		.090	.038	2.370	.018	
Ease in Managing the expenditure of Business		.049	.050	.986	.325	
Saves Time		.002	.047	.032	.974	
Not Required to carry hard cash while travelling for the purpose of business		(-).053	.048	-1.108	.268	
No misappropriation of cash or theft of cash		.017	.039	.422	.673	
Ease in applying and approval of short term loan or overdraft		(-).067	.046	-1.436	.152	
Benefit of Cash Back or Discount		(-).032	.048	-.670	.503	
Model - 1 Summary						
Model-1	R	R Square	Adjusted R Square	Std. Error of the Estimate		
Values	0.616	0.386	0.375	1.54397		
a. Dependent Variable: Impact on Profit						
b. Predictors: (Constant), Ease in accepting payments from Customers/Debtors, Ease in making payments to Suppliers/Creditors, Ease in Managing the expenditure of business, Saves Time, Avoiding carrying of hard cash while travelling for the purpose of business, No misappropriation of cash by the staff or reduce the chances of theft of cash, Ease in applying and approval of short term loan or overdraft, Benefit of Cash Back						

Table 4. Status of Hypotheses after the Formulation of Model-1

List of Alternative Hypothesis	Status of Hypotheses
H <sub>1A</sub> : Ease in Accepting Payments has a Positive Relationship with the Profitability of MSMEs	Accepted
H <sub>1B</sub> : Ease in Making Payments by using Digital Banking has a Positive Relationship with Profitability of MSMEs	Accepted
H <sub>1C</sub> : Ease in Managing Expenditure of business by using Digital Banking has a Positive Relationship with the Profitability of MSMEs	Rejected (Dropped)
H <sub>1D</sub> : Saves time by using Digital Banking has a Positive Relationship with the Profitability of MSMEs	Rejected (Dropped)
H <sub>1E</sub> : Level of Non-requirement of Carrying Hard Card by using Digital Banking has a Positive Relationship with the Profitability of MSMEs	Rejected (Dropped)
H <sub>1F</sub> : Level of Check on Misappropriation/Theft of Cash by using digital banking has a Positive Relationship with the Profitability of MSMEs	Rejected (Dropped)
H <sub>1G</sub> : Ease in Applying and Approval of Short term loan by using Digital Banking has a Positive Relationship with the Profitability of MSMEs	Rejected (Dropped)
H <sub>1H</sub> : Benefit of Cash Back or Cash Discount by using Digital Banking has a Positive Relationship with the Profitability of MSMEs	Rejected (Dropped)

Debtors, Ease in making payments to Suppliers/Creditors, Ease in Managing the expenditure of Business, Saves Time and Check on Misappropriation/Theft of Cash have positive coefficient and the remaining three independent variables namely Avoiding carrying of hard cash while travelling for the purpose of business, Ease in applying and approval of short term loan or overdraft and Benefit of Cash Bank, have negative coefficient. These negative coefficients of these three variables depict that these independent variable have inverse relationship with the impact of profit of MSMEs which implies that the alternative hypotheses H<sub>1A</sub>, H<sub>1B</sub> and H<sub>1C</sub> of this study do not support the theory. The Table 4 shows the status of hypotheses after formulation of Model-1.

The Table 4 depicts the status of hypotheses after framing a regression model by taking into consideration all the

8 independent variables. After framing the model, it can be observed that 3 hypotheses i.e. H<sub>1E</sub>, H<sub>1G</sub> and H<sub>1H</sub> have been rejected as the variables related to those hypotheses are inversely related to dependent variable and also not statistically significant as their p values are more than 0.05. Hence these three variables will be dropped while framing a new revised model. Moreover, three more variables i.e. Ease in Managing the expenditure of Business, Saves Time and No misappropriation or theft of cash should also be dropped as their coefficients are not significant. Hence, new revised model is formulated by considering only 2 variables which has direct relationship with the impact of profit of MSMEs and also has significant coefficients. The Table 5 represents the results of a new revised model named Model-2.

The Table 5 shows the results of multiple regression model 2. The table has three components, first the results

Table 5. Results of regression Model-2 considering the 2 independent variables

ANOVA					
Values	Sum of Squares	df	Mean Square	F	Sig.
Regression	253.158	2	126.57	53.274	.000
Residual	1071.576	451	2.376		
Total	1219.519	453			
Coefficients					
Constant and Independent Variables	Unstandardized Coefficients (B)	Standardised Coefficients	t	Sig.	VIF
(Constant)	2.057		8.045	.000	
Ease in accepting payments from Customers/Debtors	.066	.092	7.863	.016	1.142
Ease in making payments to Suppliers/Creditors	.080	.115	2.311	.021	1.142
Model-2 Summary					
Model – 2	R	R Square	Adjusted R Square	Std. Error of the Estimate	
Values	0.545 <sup>a</sup>	0.298	0.295	1.54128	
a. Dependent Variable: Impact on Profit					
b. Predictors: (Constant), Ease in accepting payments from Customers/Debtors, Ease in making payments to Suppliers/Creditors					

of ANOVA, second the results of Coefficients and last the summary of Model-2. In the first component, the value of F statistics is significant as the p value is less than 0.05 which represents that the above Model-2 framed by considering the only 2 independent variables, fits the data better than the intercept only.

In the second component where the coefficients of independent variables are concerned, the two variables namely Ease in accepting payments from Customers/Debtors and Ease in making payments to Suppliers/Creditors, have positive coefficient. This implies that these variables have direct relationship with impact on profit of MSMEs. The point to be focussed is that, both the two variables have significant coefficients. The values of standardized coefficients are helpful to make comparison between the coefficients of variables regarding their effects on dependent variable. These values states that the coefficient of Ease in making payments creates more impact on profit followed by Ease in accepting payments from customers. So far as the test of multi-collinearity is concerned, the Variance Inflation Factor (VIF) calculated for each variable, are within the value of 2.5 which represents that there is no multi-collinearity between the variables which supports the application of multiple regression model.

The third component where the value of R square is 0.298 states that the explanatory variables are capable to explain 29.8% of the explained variable (dependent variable). In comparison to Model-1 where 3 variables have negative co-efficient this Model-2 has no negative co-efficient but the value of R, R squared and Adjusted R squared have declined a little. By observing the above results and analysis the following regression equation could be developed.

$$Y = 2.057 + 0.066X_1 + 0.080X_2 + \xi,$$

where,  $Y$  = Impact on Profit of MSMEs,  $X_1$  = Level of Easiness in accepting payments,  $X_2$  = Level of Easiness in making payment  $\xi$  = Standard Error of Estimate i.e. 1.545.

## Conclusions

The findings of the study can be summarised as follows. It has been found that the MSMEs are getting more convenience in accepting and making payments through digital banking as their coefficients are significant within the formulated model. The other favourable factors like managing business expenditure, time saving, check on misappropriation of cash are not much significant. The bankers within the area of study, are unable to serve these MSMEs properly due to which they are incapable to reap the full benefits of digital banking. It has also been found that the adaptability level has just started increasing, the MSMEs might not be well conversant with the digital banking due to which they are incompetent to avail all kinds of benefits of digital banking. Hence, bankers should always try to educate their customers properly and should also give proper updated information in case of updated or

new application of digital banking, so that they can use it properly.

By using the above formulated model, the bank managers could judge the impact of favourable factors of digital banking on Profit of MSMEs and they could encourage more MSMEs to use digital banking by stressing on those significant favourable factors. Moreover, the two important variables i.e. Level of Avoiding carrying of hard cash while travelling and Level of convenience in applying and approval of short-term loans, that have been dropped while framing the revised model, should also be taken into consideration by the bankers as there is a possibility that the ratings given by the MSMEs may be low due to which those variables indicating negative coefficients. It can be said that many banks are promising for the instant arrangement of credit or short term loan but as per the opinion of the MSMEs, they are either not much aware about it or else they are facing some difficulty in availing this particular facility. The point that should also be noted that there are also many factors that adversely affects the usage of digital banking like Sense of Insecurity is more due to Cyber Crime, Lack of Knowledge about Operating Smart Phones or Computer, hesitate to disclose all the business transactions via digital banking, transaction cost and limitation of amount transfer via e-wallets. (Meher & Gupta, 2020a, 2020b). The bankers should also focus on such adverse factors and try to minimise it. The model framed in this study has considered only favourable determinants of digital banking. For future researchers a new study could also been done by taking the determinants which are adversely affecting the usage of digital banking or the impact of adverse determinants of digital banking on the level of hesitation in using digital banking among MSMEs.

## References

- Adrian, T., & Mancini-Griffoli, T. (2019). *The rise of digital money*. IMF Library. <https://doi.org/10.5089/9781498324908.063>
- Aliyu, A. (2012). The impact of electronic banking on customer service delivery in the Malaysian banking industry: using Sand Cone model. *TIJ's Research Journal of Science & IT Management*, 1(11), 11–22. <http://www.theinternationaljournal.org/ojs/index.php?journal=rjitsm&page=article&op=view&path%5B%5D=1235>
- Alkhowaiter, W. (2020). Digital payment and banking adoption research in Gulf countries: A systematic literature review. *International Journal of Information Management*, 53. <https://doi.org/10.1016/j.ijinfomgt.2020.102102>
- Askari, F. (2018). *MSME Registration Under UdyogAadhaar Reached 48 Lakh*. <https://smestreet.in/editorial/msme-registration-under-udyog-aadhaar-reached-48-lakh/>
- Chawla, D., & Joshi, H. (2019). Consumer attitude and intention to adopt mobile wallet in India – An empirical study. *International Journal of Bank Marketing*, 37(7), 1590–1618. <https://doi.org/10.1108/IJBM-09-2018-0256>
- Dhanya, B. K., & Velmurugan, V. P. (2020). Perception towards the problems of e-banking among the new users at Thiruvananthapuram District. *Journal of Critical Reviews*, 7(1), 474–477. <https://doi.org/10.31838/jcr.07.01.93>



- Farida, M. N., & Subroto, W. T. (2019). Effect of mobile banking and online shopping on consumer behavior. *International Journal of Educational Research Review*, 4(2), 154–161. <https://doi.org/10.24331/ijere.517977>
- Hawalдар, I. T., Spulbar, C., Lokesha, Birau, R., & Rebegea, C. (2020). Analyzing non-performing assets in agricultural loans: a case study of India. *Revue des Sciences Politiques*, 65, 42–53.
- Hawalдар, I. T., Lokesha, Kumar, K. A., Pinto, P., & Sison, S. M. (2017). Performance analysis of commercial banks in the kingdom of Bahrain (2001–2015). *International Journal of Economics and Financial Issues*, 7(3), 729–737.
- Jauhari, S., Indapurkar, K., Maheswari, D., & Raj, M. (2018). A study of the impact of youth towards digital financial instruments in the wake of demonetization of 2016 in India. *Shodhaytan – AISECT University Journal*, 5(9), 83–100.
- Koroleva, E. V., & Kudryavtseva, T. (2019). Factors influencing digital bank performance. In *Digital Science 2019 – Advances in Intelligent Systems and Computing*, 1114, 325–333. Springer. [https://doi.org/10.1007/978-3-030-37737-3\\_29](https://doi.org/10.1007/978-3-030-37737-3_29)
- Kumar, A. (2017). Demonetization and cashless banking transactions in India. *International Journal of New Innovations in Engineering and Technology*, 7(3), 30–36.
- Lokesha, Hawalдар, I. T. (2018). Impact of factors on the utilization of agricultural credit of banks: an analysis from the borrowers' perspective. *Banks and Bank Systems*, 14(1), 181–192. [https://doi.org/10.21511/bbs.14\(1\).2019.16](https://doi.org/10.21511/bbs.14(1).2019.16)
- Lokesha, Hawalдар, I. T., & Ishwara, P. (2017). An evaluation of pre-and post-sanction process in agriculture credit by banks. *International Journal of Economic Research*, 14(14), 151–165.
- Mararo, M. W., & Ngahu, S. (2017, October). Influence of mobile money services on the growth of SME in Nakuru Town Kenya. *IOSR Journal of Humanities and Social Science*, 22(10), 64–72.
- Mbah, S., & Obiezekwem, J. (2019). Electronic banking and performance of small and medium scale enterprises in Anambra State, Nigeria. *International Journal of Business and Management*, 14(6), 173–180. <https://doi.org/10.5539/ijbm.v14n6p173>
- Mehdiabadi, A., Tabatabeinasab, M., Spulbar, C., Karbassi Yazdi, A., & Birau, R. (2020). Are we ready for the challenge of Banks 4.0? Designing a roadmap for banking systems in Industry 4.0. *International Journal of Financial Studies, Special Issue “The Financial Industry 4.0”*, 8(2), 32. <https://doi.org/10.3390/ijfs8020032>
- Meher, B. K., & Gupta, A. K. (2020a). Factors adversely affecting the usage of digital banking by MSMEs in India (a case study of Katihar District in Bihar). *Journal of Xidian University*, 14(3), 1692–1701. <https://doi.org/10.37896/jxu14.3/171>
- Meher, B. K., & Gupta, A. K. (2020b). Substantial effect of digital banking in the growth of MSMEs in India (a case study of Katihar District in Bihar). *Studies in Indian Places Names*, 40(56), 940–957.
- Muchiri, J. W. (2018). Effect of mobile banking adoption on the performance of small and medium enterprises in Nairobi County. *International Journal of Economics, Business and Management*, 2(4), 445–486.
- Nazaritehrani, A., & Mashali, B. (2020). Development of E-banking channels and market share in developing countries. *Financial Innovation*, 6(12), 1–19. <https://doi.org/10.1186/s40854-020-0171-z>
- Neog, N. (2019). Usage of digital banking services by rural population: A study in Sivasagar district of Assam. *International Journal of Scientific and Technology Research*, 8(12), 3301–3304.
- Nguyen, O. T. (2020). Factors affecting the intention to use digital banking in Vietnam. *Journal of Asian Finance, Economics and Business*, 7(3), 303–310. <https://doi.org/10.13106/jafeb.2020.vol7.no3.303>
- Nguyen, T. D., Nguyen, T. Q., Nguyen, T. V., & Tran, T. D. (2019). Intention to use M-banking: the role of E-WOM. In *Advances in Intelligent Systems and Computing*, 940, 215–229. Springer. [https://doi.org/10.1007/978-3-030-16657-1\\_20](https://doi.org/10.1007/978-3-030-16657-1_20)
- Patra, N., & Ray, N. (2015). Customer perception of the quality of online banking services (with special reference to SBI and ICICI): A study on chaos and a complexity perspective. In *Chaos, Complexity and Leadership* (p. 291). Springer.
- Pinto, P., Hawalдар, I. T., Quadras, J. M., & Joseph, N. R. (2017a). Capital structure and financial performance of banks. *International Journal of Applied Business and Economic Research*, 15(23), 303–312.
- Pinto, P., Hawalдар, I. T., Rahiman, H. U., & Rajesh, T. M. (2017b). An evaluation of financial performance of commercial banks. *International Journal of Applied Business and Economic Research*, 15(22), 605–618.
- Spulbar, C., & Birau, R. (2019). *Emerging research on monetary policy, banking, and financial markets* (322 p.). IGI Global USA (formerly Idea Group Inc.). <https://doi.org/10.4018/978-1-5225-9269-3>
- Spulbar, C., & Nițoi, M. (2012). *Comparative analysis of banking systems (Sistemebancarecomparate)*(526 p.). Sitech Publishing House Craiova.
- Spulbar, C., Nițoi, M., & Stanciu, C. (2012). Monetary policy analysis in Romania: A Bayesian VAR approach. *African Journal of Business Management*, 6(36), 9957–9968. <https://doi.org/10.5897/AJBM11.1150>
- Spulbar, C., & Nițoi, M. (2013). Monetary policy transmission mechanism in Romania over the period 2001 to 2012: a BVAR analysis. *Scientific Annals of the “Alexandru Ioan Cuza” University of Iasi, Economic Sciences Section*, 60(2), 387–398. <https://doi.org/10.2478/aicue-2013-0018>
- Templeton, G. F. (2011). A two-step approach for transforming continuous variables to normal: implications and recommendations for IS research. *Communications of the Association for Information Systems*, 28(4), 41–58. <https://doi.org/10.17705/1CAIS.02804>
- Vishnuvardhan, B., Manjula, B., & Naik, R. L. (2020). A study of digital banking: Security issues and challenges. In *Advances in Intelligent Systems and Computing*, 1090, 163–185. Hyderabad. [https://doi.org/10.1007/978-981-15-1480-7\\_14](https://doi.org/10.1007/978-981-15-1480-7_14)



G. Ease in applying and approval of short term loan or overdraft \* (Mark only one Oval)

	1	2	3	4	5	6	7	8	9	10	
Least Beneficial	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Most Beneficial

H. You also get the Benefit of Cash Back \* (Mark only one Oval)

	1	2	3	4	5	6	7	8	9	10	
Least Beneficial	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Most Beneficial

5. How much Impact on Profit after using Digital Banking? \* (Mark only one Oval)

- No Impact
- Profit increased by 0 to 10%
- Profit increased by 10% to 20%
- Profit increased by 20% to 30%
- Profit increased by 30% to 40%
- Profit increased by 40% to 50%
- Profit increased by 50% to 60%
- Profit increased by 60% to 70%
- Profit increased by 70% to 80%
- Profit increased by 80% to 90%
- Profit increased by more than 90%