Research Article

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Indian MSMEs amidst the COVID-19 Pandemic: Firm Characteristics and Access to Finance

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Abstract

The importance of Micro, Small, and Medium Enterprises (MSMEs) in economic development and their access to finance post-COVID-19 has been highlighted in this study. The availability of finance is a critical factor for MSMEs to flourish, and they are mostly severely affected by the economic recession. The purpose of this study was to ascertain how the firm-specific factors such as Location, Industry, Size, Age, Ownership, Collaterals, and Business information affect their access to finance in India. This study used a survey to collect primary data from 200 MSMEs in India. Descriptive and logistic regression analysis was used to analyze the data. Results show that firms with collateral, larger and older firms, and private limited firms are less likely to face problems in raising finance, while service firms are more likely to face problems in raising finance. The results from this study will add to the understanding of the financing problems faced by MSMEs in India. The study recommends that firm attributes are important for accessing finance and help policymakers and researchers develop new strategies and policies to support the financing of MSMEs in India.

Keywords: *MSMEs; economic development; availability of finance; firm; India*

1. Introduction

Micro, Small, and Medium Scale Enterprises' contribution to supporting overall economic growth and development is noticed worldwide. Over 95 percent of all firms worldwide are MSMEs, providing 50 percent of jobs, and contribute more than 35 percent of Gross Domestic Product (GDP). Notwithstanding their contribution, around 55 to 68 percent of firms still face problems accessing finance from formal sources. Scarcity of finance for small firms is a major problem, and there exists a

financing gap of between $2.1 to $2.6 trillion annually in emerging markets (Alibhai, Bell & Conner, 2017).

As per the Ministry of MSMEs, India, an enterprise will fall under the MSME category if the investment is less than INR 50 crores (USD 7 million) and the annual turnover is less than INR 250 crores (USD 28 million). In India, MSMEs have been recognized as an important engine for economic growth due to their role in providing jobs, innovation, contribution to the exports and gross domestic product. MSMEs contribute 31 percent of GDP, 45 percent of Indian exports, and provide 124 million jobs. For the period 2010-2017, the credit gap has increased by 37 percent annually to USD 397 billion, and formal sources contribute only 16 percent (USD 168 billion) of the debt demand. Moreover, Micro firms constitute 95% of total enterprises in India, which shows that they cannot grow (IFC, 2018).

While all firms have been affected by the pandemic in India, the business of MSME firms has been above all the worse hit due to cash flow disruptions, an exodus of migrant workers, limited availability of raw materials, interruption in exports and imports, supply chain breakdowns, and the widespread travel bans, closure of malls, hotels, theatres, and institutions. (Dev & Sengupta, 2020). For small businesses, the yearly funding gap is around $5.2 trillion every year. Even before the pandemic, only 15 percent of small businesses in emerging markets could access finance. Pandemic has further restricted their access to funding, severely hindering the businesses, and has contributed to slowing economic growth (IFC, 2020).

2. Literature Review

The literature on financing of small enterprises has highlighted that the insufficiency and higher cost of funds constraints their growth and economic contribution. Schiffer & Weder (2001) studied the worldwide business environment using data from 10,900 firms and found that small firms face higher hurdles in procuring finance, negatively impacting their growth. Small firms do not have access to public funding and thus are dependent on banks to fulfill their financial requirements. Lack of collaterals and information opacity makes it tough to access bank loans (Berger & Udell, 2002). Beck, Degirguc-Kunt & Maksimovic (2005) studied the effects of financial and legal underdevelopment on firm growth. The survey spanned 54 countries, and the sample of 4,000 firms showed that the smaller firms are mostly unfavorably affected by all impediments and that the size and the risk of firms are negatively related. Hyytinen & Toivanen (2005) analyzed the firm-level data of Finnish SMEs and found that the Capital market for SME financing is imperfect, resulting in a deficiency of funds leading to blockage of investments and innovation, thus resulting in stagnation. Beck, Degirguc-Kunt, Laeven & Maksimovic (2006) used surveyed 10,000 firms in 80 countries and concluded that smaller firms have lesser access to formal funding sources. Ayyagari, Beck & Demirguc-Kunt (2007) analyzed indicators related to the jobs and wealth creation in fifty-four countries. They found employment growth to be higher in small firms, particularly for low-income countries. The factors of SMEs' capital structure from China were studied by Newman, Borgia & Deng (2012). They concluded that leveraging was significantly related to firm characteristics (size, age, profit, and incorporation status). Kuntchev, Rita, Jorge, Judy & Yang (2013), using data from 116 countries, studied the relationship between firm size and four ordinal categories of credit constraints. They found that smaller firms have higher credit constraints and rely upon more trade credit and informal finance sources.

As per Hanedar, Broccardo & Bazzana (2014), SMEs from lesser developed economies face more difficulties in loans. Arraiz, Melendez & Stucchi (2014) analyzed a panel of firms that were beneficiaries of the National Guarantee Fund (NGF) in Columbia during 1997–2007 and found that firms with access to credit were successful in terms of increased growth and employment. Banerjee & Duflo (2014) observed the use of subsidized credit by firms in India. They found that unconstrained firms used cheaper subsidized credit only to substitute the existing credit available to the firm. Whereas, in general, small firms used the subsidized credit for more production and thus showed more growth in sales and profit. Based on their finding, they concluded that many small firms have

lesser access to funds. Madrid-Guijarro, Lema & Auken (2016) surveyed the managers of 267 small firms based in Spain to analyze the role of financial constraints on innovation. They concluded that small enterprises face financing constraint which hinders their innovation. Beck, Homanen & Uras (2019) used a small business survey to analyze the relations between growth, finance, and employment. They found that financially constrained firms cannot increase formal employment even with an increase in sales and profit. Thus access to finance is necessary for skilled job creation. Kersten, Harms, Liket & Maas (2017) reviewed the SME finance programs in LMICs and found them beneficial regarding the amount financed/invested, firm performance, and employment. Various researchers have underlined firms' characteristics and access to funds. The literature related to specific firm-related factors such as location, industry, size, age, ownership, collaterals, and business information are discussed below.

Location: Brevoort & Wolken (2009) used data from the Survey of Small Business Finances (SSBF) and analyzed changes in distances between the financial service providers and small firms. They concluded that during 1993 and 2003, distances have increased but remain a pressing issue in banking. Fatoki & Asah (2011) collected data from South African SMEs through a self-administered questionnaire. Using logistic regression, they showed that urban SMEs are considerably more successful in obtaining loans than rural SMEs. Aguirregabiria, Clark & Wang (2017) studied the US's banking data and found a significant effect between the locations of deposits and the loan markets. Financial institutions focus on loaning in strong markets, which can increase profits but hinder the geographical dispersion of loans.

Type: Barbosa & Moraes (2004) studied the small firms operating in Belo Horizonte and Contagem in Brazil and found that the type of industry is an essential determinant of financial leverage. Kumar & Rao (2016) studied the financial statements and analyzed financial ratios and debts of 1524 SMEs by obtaining data (2006 to 2013) from the Centre for Monitoring the Indian economy. Their analysis showed differences in the debt ratios between the manufacturing and service sectors. Erdogan's (2019) study based on 492 Turkish SMEs analyzed bank financing perception and found that service firms have a better perception.

Size: Titman & Wessels (1988) analyzed the data of 469 firms from 1974 to 1982 and found a negative relation between firm size and short-term debts. Thus smaller firms are less likely to get long-term funds from a bank. The logistic regression results from Fatoki & Asah (2011) study showed that SMEs with less than 50 employees are likely to be less successful in accessing credit. Du & Girma (2012) examined the relationship between size and financing sources for Chinese firms (1998 through 2005); they found firm size essential for financing and growth. Also, for smaller firms' self-finance growth is more beneficial, while local bank loans are more effective for larger firms.

Age: The lack of assets and information asymmetry associated with new firms makes them riskier, and thus they face higher constraints. The bearing of monetary policy on firms' credit ratios was studied by Bougheas, Mizen, & Yalcin (2005). It was found that the impact of tighter monetary is more on new firms. In India, Kumar & Rao (2016) show that age and leverage are positively related, indicating that creditworthiness increases with age, so older firms have more debts. As per Erdogan (2019), younger firms perceive bank financing to be more difficult.

Ownership: A small firm may have different ownership types such as "Proprietary; Partnership; Limited Liability Partnership and Private Limited Company." Dietmar, Konrad & Woywode (1998) studied the relationship between a firm's legal form and growth. Using a sample of 11000 West German firms, they found that limited liability firms exhibited a higher growth. Storey (1994) used a survey in 1979 and another in 1990 to collect information from the new business regarding funds sources. The study found that limited companies get more finance from banks. Cassar (2004) found that incorporation increases funding, suggesting the signaling effects of incorporating credibility and growth. In India, Government-owned firms have a high debt (Kumar & Rao, 2016). Also, firms with more number of owners perceive bank financing to be easier (Erdogan, 2019). Therefore, the type of ownership affects access to funds.

Collaterals: Beck et al. (2006) examined twelve problems associated with the funding and

found collateral among the top three problems. Hanedar, Broccardo & Bazzana (2014) analyzed data of twenty-seven transition economies and found that preferred collaterals included buildings, machinery, and equipment, and for 68% of firms, the collateral value was higher than the loan amount. Rahman, Belas, Kliestik & Tyll (2017), using data from Business Environment and Enterprise Performance Survey (BEEPS) from 2012–2014, studied collateral factors for SMEs from Czech Hungary, Poland, and the Slovak Republic. The binary logistic regression results showed that the likelihood of collateralization is more for riskier and longer-term loans. Woldie, Bushige & Thomas (2018) used a survey of SMEs in Congo to study financial accessibility and gender effects. Their study found that though SMEs face financial constraints due to lack of collateral, both women and men stand the same chances of accessing finance.

Asymmetric Information: Sarapaivanich & Kotey (2006) used a questionnaire and collected data through interviews from 407 SMEs in 3 provinces of Thailand. Structural equation modeling (SEM) showed a positive relationship between the availability of financial information and the ability to access funding. Lenders seek the firm's business information related to their assets, profitability, and future performance. Kitindi, Magemb & Sethibe (2007), based on the analysis of responses from seven lenders in Botswana, found that lenders use annual reports to collect financial information to access the present and predict the prospects of borrowers. Collateral overcomes the problems of information, thus solves the problem related to information asymmetry. Canton, Grilo, Monteagudo, & Zwan (2013) used survey data from 3,500 SMEs (lesser than 250 employees) in the European Union (E.U.) to find the factors related to the accessibility of perceived bank loans. They showed that the perception of access to bank loans was negatively related to SMEs' age and size. The older firms have a history, and thus the information asymmetry is reduced. Rao, Kumar, Gaur & Verma (2017) used the convergent interview to investigate SMEs' financing issues in India and found that higher cost, procedures, and information asymmetry to the perplexing issues. Lack of sufficient business information makes the lending riskier, which decreases access to funds.

COVID-19 has impacted the Indian MSMEs punitively and a decline in gross value added is expected, with the manufacturing sector being the worst hit (Sahoo & Ashwani, 2020). The Indian government announced relief measures such as lowering interest rates, collateral-free borrowing, equity support, and outstanding dues payment. However, these measures cannot compensate for the losses (Roy, Patnaik & Satpath, 2020); the policy measures are parsimony and only a limited number of MSMEs will benefit (Ghosh, 2020). Based on the literature review, this paper investigates the firm determinants; location, industry, size, age, ownership, collaterals, and business information in predicting the fund accessibility within MSMEs in India amidst COVID-19. This empirical research highlights the importance and financial constraints faced by MSMEs in India and will further strengthen the case for MSME funding.

3. Methodology

Financial statements of large firms provide comprehensive data, and thus, econometric can be used for analyses. However, small and medium-sized firms lack financial data, and thus surveys are the preferred approach Claessens and Tzioumis (2006). After the literature review, a questionnaire was prepared and used for collecting data. MSMEs' owner/manager/accountant was approached online through email and social media from June 2020 to December 2020. The survey was carried out in the National Capital Region of India. The state's key industries include auto components, biotechnology, food processing, handlooms and handicrafts, information technology, leather, mineral-based industries, tourism, textiles, and sports goods industries. The directory of the Indian Industries Association was used as a database as it represents MSMEs. Three hundred questionnaires were administered, 174 were filled and returned. In the second round, 50 more questionnaires were administered, and 26 were filled and returned. This represented a response rate of 57.1 %, which is adequate (Bailey, 2000). The data collected was analyzed with the help of SPSS. Variance Inflation Factor was calculated to check for multicollinearity, and after that, logistic regression analysis was carried out.

3.1 Validity and reliability

The face validity of the study questionnaire was checked by pre-testing on five owners of MSMEs. This was done to screen out any biased or sensitive questions. After that, two researchers who were familiar with the research topic checked the questionnaire's content validity. Some items were modified to increase the clearness and ease of use of the questionnaire. Firms' difficulties in accessing funds due to the factors were rated as below (Table 1).

Table 1: Difficulties faced by firms in access to funds

Factors	Not at All	Very Little	Somewhat	To a great extent
Location				
Industry				
Size of the firm				
Age of the firm				
Type of ownership				
Collaterals				
Business information				

The variables used are shown in Table 2

Table 2: Measurement of variables used in regression

Funds	1=Funds Accessible; 2= Funds Not Accessible
Location	1=Rural(RG); 2=Urban
Type of organization	1 = Manufacturing (RG); 2 = Service
Firm Size	1=Micro(RG); 2=Small; 3= Medium
Firm Age	1=1 - 5 years(RG); 2= 6-10 years; 3= 11-15 years; 4=16-20; 5=Above 20 Years
Type of ownership	1=Proprietary (RG); 2=Partnership;3=Limited Liability Partnership; 4=Private Limited Company
Firm's collaterals	1 = Absent (RG); 2 = Present
Business information	1=Available(RG); 2= Not Available

4. Results

The Variance Inflation Factor test for multicollinearity is shown in Table 3**.** "Multicollinearity among the independent variables can lead to biased estimates and inflated standard errors". The results indicated by table 3 show that all the independent variables had a VIF less than 10 (VIF < 10) and a Tolerance Statistics greater than 0.10 (1/VIF > 0.10). Therefore, it can be concluded that there is no multicollinearity.

Table 3: Variance Inflation Factor Test for Multicollinearity

Co linearity Statistics		
Variable	**Tolerance**	**VIF**
Locality	.827	1.210
Type	.961	1.041
size	.662	1.511
Age	.895	1.118
Owner	.946	1.057
Collateral	.690	1.450
Information	.855	1.169

Table 4 shows the descriptive analysis for study variables. Seventy-one percent of the respondent MSMEs had difficulty in accessing funds. 56.5 % of MSMEs were in rural areas, 64.5%, 20.0%, and 15.5% were from the micro, small, and medium sectors. The maximum numbers (43.5%) of MSMEs were proprietary and in the age group of 1 to 5 years. Most of the firms lacked sufficient collateral and business information.

Table 4: Descriptive Analysis for Study Variables

		Frequency	Percent
Finance	Accessible	58	29.0
	Not Accessible	142	71.0
Location	Rural	113	56.5
	Urban	87	43.5
Type	Manufacturing	145	72.5
	Service	55	27.5
Size	Micro	129	64.5
	Small	40	20.0
	Medium	31	15.5
Age	1 -5	65	32.5
	6-10	52	26.0
	11-15	39	19.5
	16-20	34	17.0
	Above 20	10	5.0
Owner	Proprietary	87	43.5
	Partnership	56	28.0
	Limited Liability Partnership	28	14.0
	Private Limited Company	29	14.5
Collateral	Absent	135	67.5
	Present	65	32.5
Information	Available	88	44.0
	Not Available	112	56.0
	Total	200	100.0

The sample consisted of 145 (72.5%) firms from the manufacturing sector and 55 (27.5 %) firms from the service sector. The MSMEs surveyed included firms from auto components, biotechnology, brassware, carpet, chemical, construction, food processing, handlooms and handicrafts, hotels, information technology, jute, leather, mineral-based industries, sports goods, sugar, textiles, tourism, and vegetable oil.

Difficulty in accessing funds is predicted using variables. In this study, the prediction is dichotomous; therefore, logistic regression is used. Logistic regression (logit) is suitable for analyzing dichotomous outcome variables since it is flexible and easy to use and results are mathematically meaningful (Hosmer and Lemeshew, 1989). The cumulative logistic probability distribution model for the probability of MSMEs access to finance Pi according to Gujarati (2004), the will be;

$$P_i = F(Z_i) = \frac{1}{1 + e^{-(\alpha + \sum \beta_i X_i)}} \quad (1)$$

In the above equation α & βi are regression parameters to be estimated, Xi denotes the ith explanatory variables while the term e is the base of the natural logarithm. The above model can also be written in terms of the odds ratio of the probability that MSMEs would have access to finance (Pi) to the probability that MSMEs would not have access to finance (1- Pi). That is,

$$\left[\frac{P_i}{1-P_i}\right] = e^{Z_i} \quad (2)$$

Equation (3) is the natural logarithm of equation (2):

$$\ln\left(\frac{P_i}{1-P_i}\right) = Z_i = \alpha + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_m X_m \quad (3)$$

Equation (4) takes the disturbance term Ui is taken into account:

$$Z_i = \alpha + \sum_{i=1}^{m} \beta_i X_i + U_i \quad (4)$$

The equation (4) is dichotomous such that Zi (Yi) = 0 or 1. Thus Y=0 denotes nonoccurrence (no access to finance) while Y=1 denotes the occurrence (access to finance). For this study the equation (4) can be written as: FAF= α +β1FL+ β2FC+ β3FS+ β4FA+ β5FO+ β6FT+ β7FI + Ui

Where,
FAF= Firm's Access to finance
FL=Firm Location
FC=Firm Collateral
FS=Firm Size
FA=Firm Age
FO=Firm Ownership
FT=Firm Type
FI=Firm Information
α = Constant (intercept)
β1 – β7 = Coefficients
Ui= Error term

Table 5 shows the results of logistic regression. Collateral, Size, Age, Ownership, and Type of organization were found significant. Firms with collateral were 0.40 times less likely to face problems in accessing funds than firms with no assets to offer as collateral. Larger firms were 0.65 times less likely to face problems in accessing funds as compared to smaller firms. Older firms were 0.176 times less likely to face problems in accessing funds as compared to younger firms. Firms in the Private Limited category were 0.421 less likely to face problems in accessing funds than firms in the proprietor category. Manufacturing firms were 4.764 lesser likely to face problems as compared to the firms in the service industry.

Table 5 : Logistic Regression

Variable	B	S.E.	Sig	Exp(B)
Locality	0.694	0.897	0.439	2.001
Collateral	-5.596*	1.292	0.000	0.40
Size	-2.740*	.807	0.001	0.65
Age	-1.738*	.453	0.000	0.176
Ownership	-0.865**	.355	0.015	0.421
Type	1.561***	.849	0.066	4.764
Information	1.024	.693	0.139	2.785

Statistically Significant at * (P<0.001); ** (P<0.05); *** (P<0.10); Cox & Snell R Square=0.578; Nagelkerke R Square=0.825

5. Discussion

This research aimed to ascertain the problem faced in raising finance based on the firm-specific factors amid COVID-19. The literature reviews have highlighted firm-specific factors influencing the accessibility of finance. The data collected were analyzed, and it was found that collateral, size, age, ownership, and type of organization were significant factors. Firms with collateral, larger and older firms, and private limited firms were less likely to face problems in raising finance, while service firms are more likely to face problems. MSMEs can contribute more to the Indian economy in employment, innovation, exports, and gross domestic product if funded adequately. The availability of finance is a critical factor for MSMEs to flourish. The need for finance is of principal importance for any enterprise's success and growth, but it is relatively more difficult for smaller to procure the necessary funds.

Empirical evidence shows that in developing economies, the dominance of banks and government ownerships or nationalization of banks leads to lesser competition among banks which has a long-term adverse impact on financial and economic development (Global Financial Development Report, 2013). MSMEs should not depend only on bank loans for their financial needs. Non-bank financial institutions (NBFIs) can provide a diverse range of financing. For example, machinery and equipment can be financed through leasing or hire purchase, while receivables can be financed through factoring and bill discounting. European Commission (2003) reports that banks perceive small loans as risky; therefore, micro-finance can be an alternative to fund the start-up and growth of small firms. Government support in the form of risk-sharing and tax incentives for micro-financing can encourage small lenders. Many business owners/managers of MSMEs often have received no formal financial education and training. Upgrading their financial management skills can help improve their ability to approach and access credit for their firms. Financial literacy programs can help in improving financial management skills. Enhanced formal credit to MSMEs will increase their economic contribution. The focus of MSMEs should be on getting a level playing field by overcoming their drawbacks.

In response to the financial stress faced by the MSMEs due to COVID-19, the Indian government announced various measures to support pandemic-stricken MSMEs. These included a collateral-free automatic loan of up to USD 39 billion, with a moratorium of 12 months on principal repayment. Provision of subordinate debt to the tune of USD 2.6 billion and to offer equity financing for viable and growth oriented MSMEs a fund of funds was created of up to USD 6.5 bn. Furthermore, to prevent insolvencies, the interest rates were reduced, and the limit of Non-Performing Assets (NPAs) was raised.

6. Conclusions and Recommendations

Given the MSMEs' contribution to economic development in terms of employment and wealth distribution, their funding is imperative, and there is a need to explore new funding avenues. Policies should be formulated to make finance accessible for MSMEs from sources such as Banks, financial institutions, and Micro Finance Institutions (MFIs). MFIs and cooperatives should be supported as they can increase access to finance. The government and the Reserve Bank of India must work towards encouraging MSME funding.

Credit scoring can remove information asymmetry and ease funding. Additionally, new avenues of finance such as digital finance can be promoted, and MSMEs should be encouraged to approach them for financing. Digital finance has a competitive advantage for small loans in terms of speed, convenience, and cost. Various digital financing sources such as peer-to-peer (P2P) loans, online direct lenders, invoice financing, working capital financing, and mobile lending are available. Fintech such as Amazon lending and Ali baba group are providing loans to MSME. Mobile-based apps such as Tala are also operating and can help narrow the financing gap.

This study was confined to firm-specific factors; therefore, future research may consider

external factors such as the economy's overall market and liquidity conditions. Moreover, a cross-country study of MSMEs may highlight the role of cultural and government policies on MSMEs' funding.

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