






“Barriers and potential solutions for MSMEs in developing economies: Evidence from India”

AUTHORS	Bishwajeet Prakash   Indrajit Kumar  Jainendra Kumar Verma 
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Jainendra Kumar Verma, 2021

Bishwajeet Prakash, Dr., Assistant
Professor (Guest), Department
of Financial Studies & Business
Economics, South Campus University
of Delhi, India. (Corresponding author)

Indrajit Kumar, Dr., Assistant
Professor, Department of Management
Studies, MVJ College of Engineering
(Autonomous), India.

Jainendra Kumar Verma, Dr., Assistant
Professor, Department of Economics,
Central University of Punjab, India.



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Bishwajeet Prakash (India), Indrajit Kumar (India), Jainendra Kumar Verma (India)

BARRIERS AND POTENTIAL SOLUTIONS FOR MSMEs IN DEVELOPING ECONOMIES: EVIDENCE FROM INDIA

Abstract

Micro, small and medium enterprises (MSMEs) have emerged as an accelerator of economic growth with a sizeable contribution in job creation, innovation development, and reduction of regional disparities in most world economies. This paper investigates the influence of external and internal factors affecting the growth of MSMEs in poor-performing Bihar state, India. The objective of the study is to identify the major deep-rooted causes for the inability of MSMEs to compete in developing states and identify potential solutions. The study is based on an empirical database; it tested various dimensions of MSMEs barriers in their potential growth. The target group included MSMEs of Bihar state, India, using a sample of 450 entrepreneurs. The paper adopted a multistage sampling and multivariate analysis technique. The results showed that there are twelve major potential barriers, both endogenous and exogenous, faced by MSMEs, such as availability of raw materials, financial issues, labor force challenges, technology inefficiency, power/electricity scarcity, poor marketing, competition, knowledge-related challenges, government and administration problems, infrastructure inefficiency, etc. The findings show that these barriers affect the promotion and growth of MSMEs in developing regions. In future, it is suggested to focus on the implementation of good governance that helps to remove effectively the major barriers of MSMEs in underdeveloped states, such as Bihar, India.

Keywords

Bihar, small industries, barriers approach, effective solutions, entrepreneurship, infrastructure, external and internal factors

JEL Classification

L26, L53, O18, R00

INTRODUCTION

The micro, small and medium enterprises (MSMEs) sector has been recognized as the most important pillar of the economy. It plays a vital role in developing and developed economies of the world. These enterprises work as the backbone and are essential for the economic potential growth and development of countries (Stel et al., 2005; Beck et al., 2005; Acs et al., 2008a, 2008b). In India, with lofty discrepancies between rich and poor in conjunction with a problem of unemployment, MSMEs are amongst the key drivers of economic development, innovation, and employment (RBI, 2019). MSMEs sector is characterized by low investment, higher employment opportunities, operational flexibility, reduction of disparities, and import substitution (Singla & Grover, 2012). MSMEs sector has a vast network with expansion throughout the country with 633.8 lakh enterprises offering 1,200 lakh of employment opportunities (Ministry of Micro Small and Medium Enterprises, 2018). The contribution of MSMEs to the economy consists of 90% of enterprises, 80% of the non-agriculture labor force, 6.11% of GDP manufacturing, 24% of GDP service sector, 33.4% in manufacturing activities, and 45% in total export (Confederation of Indian Industry, 2019).

SMEs play a crucial role in all the economies that have been acknowledged. SMEs ventures/entrepreneurs/owners face many obstacles that limit the long-run survival (Kamunge et al., 2014). Barriers for MSMEs lead to a high failure rate or becoming sick at the initial age (Smallbone & Rogut, 2005). The barriers can be both endogenous and exogenous. Internal barriers include management inefficiency, ineffective planning, and bookkeeping (Smith & Smith, 2007; Kambwale et al., 2015). External barriers include poor infrastructure, government policy, access to raw materials, and delayed payments from creditors (Smith & Smith, 2007; Nongnit, 2011). Thus, barriers, motivational factors, and problems uncounted by SMEs throughout the world called attention of numerous researchers from various countries (Anderson & Pomfret, 2001; Temtime & Pansiri, 2006; Baron & Shane, 2007; Manzur & Nayeem, 2008; Olawale & Garwe, 2010; Bartlett & Bukvic, 2001; Shaw & Williams, 2009; Gray, 2006; Krasniqi, 2010; Omerzel & Antoncic, 2008; Hoque & Biswas, 2014; Kang, 2012; Salikin et al., 2014; Blossom & Said, 2014; Ramukumba, 2014; Dasanayaka et al., 2017; Benzing et al., 2019).

1. LITERATURE REVIEW

In this study, MSMEs have been classified and identified as per investment in equipment or machinery, according to the official definition of the Ministry of Micro, Small and Medium Enterprises, India. Such enterprises are defined for the manufacturing sector in terms of their investments into equipment and production (costs for pollution prevention, R&D, industrial safety, etc., are not included) to the investment limit maximum up to Rs. 25 lakh for micro, up to Rs. 25 lakh Rs. 5 crores for small, up to Rs. 5 crores to Rs. 10 crores for medium enterprises, and service sector regarding investment in equipment with a maximum of Rs. 10 lakh for micro, up to Rs. 2 crores for small, and Rs. 5 crores for medium Enterprises (Ministry of Micro Small and Medium Enterprises, 2006). There is evidence that MSMEs are positively linked with economic growth, per capita income, and improvement of living conditions in low-income countries and regions (Acs et al., 2008b). The business activities of SMEs are a dynamic process for economic development as they help to generate employment, innovation, and promote local

welfare (Acs et al., 2008a). According to van Praag and Versloot (2007), based on the study of 57 publications, it was concluded that entrepreneurship is vital for the economy as it creates huge employment opportunities, promotes innovation and economic growth of the country. Thus, MSMEs contribute to the economic well-being of the middle class, reducing regional disparities in the economy, promoting local entrepreneurship, and improving living standards (Chen, 2006; Pissarides, 1999). MSMEs provide huge complementary work to large organizations, serve as basic raw materials providers, and provide economic stimulus competitively (Longenecker et al., 1997). In Bihar state, 99% of enterprises fall into the segment of MSMEs and in terms of employment, 147,775 people are engaged in MSMEs enterprises (Prakash, 2019). However, this sector has great potential for the country's economic growth, but these enterprises have to face numerous limitations and obstacles in their establishment, promotion, maintenance, and expansion of their ventures.

Barriers, challenges, and obstacles, faced by SMEs and MSMEs, are presented in Table 1.

Table 1. Conceptual literature review

Barriers	References
Technology inefficiency	Pribadi and Kanai (2011); Siringoringo et al. (2009); Mutula and Brakel (2007)
Financial access	Ardic et al. (2011); Olawale and Garwe (2010); Hartungi (2007); OECD (2009)
Access to raw materials	Tambunan (2009); Siringoringo et al. (2009); Hamisi (2011)
Management skill	Olawale and Garwe (2010); Das et. al (2007)
Government, regulation, and institutional policies	Pribadi and Kanai (2011); Tambunan (2009); Al-Hyari et al. (2011); Olawale and Garwe (2010)
Competition	Siringoringo et al. (2009)
Infrastructure inefficiency	Lawrence and Tar (2010); Olawale and Garwe (2010); Siringoringo et al. (2009)
Transportation inefficiency	Tambunan (2009); Hamisi (2011); Siringoringo et al. (2009); Torri (2012)
Managerial capacity	OECD (2009)

Table 1 (cont.). Conceptual literature review

Barriers	References
Quantity restriction	Hussain (2004)
Procurement of raw material	Abushgra and Bach (2013); Prakash and Verma (2019)
Skilled labor scarcity	Abushgra and Bach (2013)
Labor unrest	Bihari (2011)
Power tariff	Das et al. (2007)
Lack of access to packaging technologies	Lokhande (2014)
Absence of workforce planning	Lokhande (2014)
Lack of proper distribution system	Lokhande (2014)
Poor marketing	Choudhary (2012)
Improper accounting systems	Goswami et al. (2017)
High labor cost	Tambunan (2009)
Absenteeism	Thayumanavar and Kavitha (2019)
Inadequate wages and salary	Thayumanavar and Kavitha (2019)
Lack of demand	Chandraiah and Vani (2014)
Domestic problems of entrepreneurs	Salikin et al. (2014)
Natural calamities	Mallikarjunaiah and Sudarsan (2012)
Delay payments from creditors	Chandraiah and Vani (2014)

2. AIMS AND HYPOTHESES

This study aims to provide empirical evidence and analyze the factors affect the potential growth of the MSMEs in the developing economies states. The study includes major barriers and constraints faced by MSMEs in underdeveloped states like Bihar, India as well develop the relationship between organizational structure and barriers in operation of MSMEs in state.

Based on the existing literature, following hypotheses have been developed:

H₁: Availability of raw materials, financial access, labor issues, technology inefficiency, power tariff, poor marketing, infrastructure inefficiency, competition, knowledge transfer, poor management, and other problems are major barriers for the MSMEs growth in the developing state of Bihar, India.

H₂: Education qualification, gender and industries classification do not significant influence the MSMEs performance in the State.

3. METHODOLOGY

This study evaluates the severity of the impact of the major barriers in the growth of MSMEs in Bihar state, India. Major obstacles to the growth

of MSMEs are erratic power supply, shortage of raw materials, fall in demand, non-availability of credit, non-availability of labor, labor disputes, etc. (Ministry of Micro Small and Medium Enterprises, 2018). After conducting a literature review and preliminary investigation, a semi-structured schedule was designed and personal interviews were conducted with owners/managers of MSMEs in Bihar. A total of 54 variables were identified and these variables were classified into 12 major categories of barriers. The survey includes all the three sections of MSMEs (micro, small and medium enterprises) with all age groups, gender, and various industries. 65 questions based on the developed concept and literature review were distributed among respondents. A 5-point Likert scale was used where '1' stands for strongly disagree and '5' stands for strongly agree (Brace, 2008). The schedule used for the study was pretested (pilot tested) among 10% of MSME owners/managers. According to their feedback and comments, a revised schedule was delivered to the rest 90% of MSME owners/managers in Bihar, India.

However, a total of 450 samples were collected through a stratified random sampling method. From the pilot survey, it was discovered that there were sixty-five problems identified as barriers for the MSME growth in Bihar. These sixty-five questions were classified into 12 groups according to their nature. The collected data were scrutinized and processed through the use of IBM SPSS ver-

sion 25 to quantify the reliability and normality of the data set. The data collection was conducted in the period from January 2018 to March 2019, in person. The paper uses mean and standard deviation, t-test, and ANOVA test. Table 2 shows the demographic characteristics of MSME owners/managers in the state of Bihar.

Table 2. Demographic characteristics

Source: Authors' compilation.

Characteristics	Variables	Frequency	%
Category of business	Micro	317	70.4
	Small	122	27.2
	Medium	11	2.4
Gender	Male	367	81.6
	Female	83	18.4
Age	18–30	36	8.0
	31–40	119	26.4
	41–50	188	41.8
	51–60	62	13.8
	Above 60	45	10.0
Product specification	Agro and allied enterprises	113	25.1
	Non-metallic and mineral enterprises	42	9.3
	Engineering enterprises	57	12.7
	Paper and printing enterprises	24	5.3
	Forest-based enterprises	69	15.3
	Repairs and service enterprises	62	13.8
	Textile enterprises	41	9.1
	Hotel and hospitality sector	12	2.7
	Electronics and electric enterprises	7	1.6
Education	Miscellaneous enterprises	23	5.1
	Below 10 th grade	61	13.6
	10 th grade	129	28.7
	12 th grade	106	23.6
	Graduate	109	24.1
	Postgraduate	18	4
	Professional graduate	14	3.1
	Technical education	13	2.9

The demographic structure included gender, age, type of business, education level, and product specification. Industry sector includes micro (70.40%), small (27.2%), and medium (2.4%) enterprises. Most of the owners/managers were male (81.6%) and the majority were 31–40 years old (41.8%). As for industry classification, maximum enterprises belong to agro, food, and allied-based enterprises – 113 (25.1%). The main education qualification was below graduate.

4. RESULTS AND DISCUSSION

Primary data were collected to examine barriers to the potential growth of MSMEs in Bihar. First, the reliability test was conducted; it was found that all data were normal and Cronbach's value was more than 0.60, which was appropriate for further study (Urbach & Ahlemann, 2010; Hair et al., 2011). Second, problems were categorized; variables with their mean values and t-values were used to test the significance. The major barriers results are further discussed.

Raw material challenges. The literature review revealed that MSME owners/managers faced the problems related to raw materials availability. This study was not an exception. Table 3 shows that there is untimely availability of raw materials ($\bar{x} = 3.26, t = 4.793, p < .05$), variation in price of raw materials ($\bar{x} = 3.42, t = 9.516, p < .05$), high price of raw materials ($\bar{x} = 3.82, t = 18.643, p < .05$), materials are not available locally ($\bar{x} = 3.50, t = 8.542, p < .05$), lack of finance for raw materials ($\bar{x} = 3.50, t = 8.542, p < .005$) and faulty government policy ($\bar{x} = 3.41, t = 7.627, p < .05$). It was found that high cost of raw materials leads to the huge problems for owners/managers to operate their daily needs. This finding supports Tambunan (2009) and Siringoringo et al. (2009).

Table 3. Raw material challenges

Source: Authors' compilation.

Problems	Mean	t-value	Significance	Result
Untimely availability of raw materials	3.26	4.793	0.00	Rejected
Variation in prices for raw materials	3.42	9.516	0.00	Rejected
High Price of raw materials	3.52	11.018	0.00	Rejected
Materials are not available locally	3.50	8.542	0.00	Rejected
Lack of finance for raw materials	3.82	18.643	0.00	Rejected
Faulty government policy	3.41	7.627	0.00	Rejected

Note: Cronbach's alpha = .685; Normality = Normal.

Financial challenges. The finance is known as the blood for the MSMEs. The availability of timely and adequate finance at a reasonable rate is an essential requirement for the development of MSMEs

in Bihar. Lack of finance can affect the fixed and working capital and thus owners/managers cannot modernize their MSMEs. Table 4 shows that there were several financial problems, namely shortage of fixed capital ($\bar{x} = 3.53, t = 11.388, p < .05$), shortage of working capital ($\bar{x} = 3.84, t = 20.77, p < .05$), increase in product cost ($\bar{x} = 3.53, t = 12.371, p < .05$), delays in realization of bills ($\bar{x} = 3.63, t = 14.171, p < .05$), sanctioning of the loan ($\bar{x} = 3.50, t = 10.472, p < .05$), underfinancing ($\bar{x} = 3.16, t = 2.965, p < .05$), and delay in payments from creditors ($\bar{x} = 3.87, t = 0.873, p < .05$). However, it was found that delay payments from creditors was highly responsible for financial problem of MSMEs in Bihar, supporting Rao et al. (2015).

Table 4. Financial challenges

Source: Authors' compilation.

Problems	Mean	t-value	Significance	Result
Shortage of fixed capital	3.53	11.388	0.00	Rejected
Shortage of working capital	3.84	20.770	0.00	Rejected
Increase in product cost	3.53	12.371	0.00	Rejected
Delays realization of bills	3.63	14.171	0.00	Rejected
Sanctioning of the loan	3.50	10.472	0.00	Rejected
Underfinancing	3.16	2.965	0.03	Rejected
Delay payments from creditors	3.87	0.873	0.00	Rejected

Note: Cronbach's alpha = .704; Normality = Normal.

Human resources challenges. Human resource management and hiring the labor was a vital component for the MSME growth in Bihar. Human resource management in the industries is most difficult tasks performed by entrepreneurs. Table 5 shows the main human resources problems, namely non-availability of skilled labor ($\bar{x} = 3.69, t = 13.127, p < .05$), non-availability of casual labor ($\bar{x} = 2.82, t = -3.603, p < .05$), demand of high wages ($\bar{x} = 3.64, t = 12.476, p < .05$), low productivity/low efficiency ($\bar{x} = 3.52, t = 11.181, p < .05$), absenteeism ($\bar{x} = 3.73, t = 14.269, p < .05$), inadequate wages and salary ($\bar{x} = 2.87, t = -2.376, p < .05$) and labor unrest ($\bar{x} = 2.91, t = -1.64, p > .05$). However, absenteeism was the major hurdle for the MSMEs in Bihar; these concerns were raised by Bartlett and Bukvic (2001).

Table 5. Human resource challenges

Source: Authors' compilation.

Problems	Mean	t-value	Significance	Result
Non-availability of skilled labor	3.69	13.127	0.00	Rejected
Non-availability of casual labor	2.82	-3.603	0.00	Rejected
Demand for high wages	3.64	12.476	0.00	Rejected
Low productivity/Low efficiency	3.52	11.181	0.00	Rejected
Absenteeism	3.73	14.269	0.00	Rejected
Inadequate wages and salary	2.87	-2.376	0.01	Rejected
Labor unrest	2.91	-1.640	0.10	Rejected

Note: Cronbach's alpha = .714; Normality = Normal.

Technology challenges. MSME owners/managers are not much aware of advanced technology of production, supplier, transportation, and marketing efficiency. Table 6 shows that there are some technology problems, namely indigenous machinery ($\bar{x} = 3.24, t = 4.02, p < .05$), imported machinery ($\bar{x} = 2.53, t = -9.594, p < .05$), unsuitability of machinery ($\bar{x} = 2.83, t = -2.999, p < .05$), testing facilities for raw material ($\bar{x} = 2.75, t = 5.211, p < .05$), excess consumption of raw material ($\bar{x} = 3.18, t = 3.609, p < .05$), and excess consumption of power/fuel ($\bar{x} = 3.34, t = 6.719, p < .05$). The technological barriers in SMEs has been also supported by Siringoringo et al. (2009) and Mutula and Brakel (2007). However, excess consumption of power/fuel by machinery was the major obstacle for MSMEs.

Table 6. Technology challenges

Source: Authors' compilation.

Problems	Mean	t-value	Significance	Result
Indigenous machinery	3.24	4.020	0.00	Rejected
Imported machinery	2.53	-9.594	0.00	Rejected
Unsuitability of machinery	2.83	-2.999	0.00	Rejected
Testing facilities for raw material	2.75	5.211	0.00	Rejected
Excess consumption of raw material	3.18	3.609	0.00	Rejected
Excess consumption of power/fuel	3.34	6.719	0.00	Rejected

Note: Cronbach's alpha = .685; Normality = Normal.

Power supply challenges. An adequate and uninterrupted supply of electric power is an essential and crucial input for the efficient operation of small-scale enterprises. Table 7 shows the following pow-

er supply problems: inadequate power supply ($\bar{x} = 3.96, t = 20.775, p < .05$), power-cuts ($\bar{x} = 3.44, t = 8.802, p < .05$), and high electricity charges ($\bar{x} = 4.07, t = 25.042, p < .05$). According to the Reserve Bank of India (2019), production costs increase prices for products of SMEs due to inadequate power supply and high electricity charges.

Table 7. Power supply challenges

Source: Authors' compilation.

Problems	Mean	t-value	Significance	Result
Inadequate power supply	3.96	20.775	0.00	Rejected
Power-cuts	3.44	8.802	0.00	Rejected
High electricity charges	4.07	25.042	0.00	Rejected

Note: Cronbach's alpha = .703; Normality = Normal.

Marketing challenges. Marketing problems are found to be most challenging problems for MSMEs; they mostly arise due to lack of standardization, inadequate products and packaging designs, use of low-quality materials, lack of accuracy and inconsistency in the finishing and final products, and others, which affect globalization of products. Table 8 shows that there are different marketing challenges, namely high cost of marketing ($\bar{x} = 3.52, t = 11.463, p < .05$), inadequate sales promotion ($\bar{x} = 3.49, t = 11.294, p < .05$), improper distribution strategy ($\bar{x} = 2.48, t = -13.341, p < .05$), untimely introduction of product ($\bar{x} = 2.53, t = -11.277, p < .005$), high cost of advertisement ($\bar{x} = 3.49, t = 10.542, p < .05$), and poor marketing strategy ($\bar{x} = 3.94, t = 21.636, p < .05$). These results are supported by Weaver and Pak (1990) and Moodley and Morris (2004). Thus, poor marketing strategy became the major concern for MSMEs in Bihar.

Table 8. Marketing challenges

Source: Authors' compilation.

Problems	Mean	t-value	Significance	Result
High cost of marketing	3.52	11.463	0.00	Rejected
Inadequate sales promotion	3.49	11.294	0.00	Rejected
Improper distribution strategy	2.48	-13.341	0.00	Rejected
Untimely introduction of product	2.53	-11.277	0.00	Rejected
High cost of advertisement	3.49	10.542	0.00	Rejected
Poor marketing strategy	3.94	21.636	0.00	Rejected

Note: Cronbach's alpha = .698; Normality = Normal.

Infrastructure challenges. The availability of adequate infrastructure has been a major requirement for the growth of SMEs; the movement of raw materials and distribution of products depend on an effective road and transportation system. The transportation problems include transportation cost, modes of transportation, low public transportation inconvenience due to different engaging modes of transport before the product is finally sent to the market. Table 9 shows that there are different infrastructure challenges, namely lack of public transport ($\bar{x} = 4.05, t = 23.748, p < .05$), high transport cost ($\bar{x} = 3.95, t = 21.548, p < .05$), poor quality of roads ($\bar{x} = 4.13, t = -27.255, p < .05$), and poor quality of the drainage system ($\bar{x} = 3.93, t = 21.609, p < .05$). It was found that the poor quality of roads in Bihar is the major barrier to the growth of MSMEs.

Table 9. Road and transportation challenges

Source: Authors' compilation.

Problems	Mean	t-value	Significance	Result
Lack of public transport	4.05	23.748	0.00	Rejected
High transport cost	3.95	21.548	0.00	Rejected
Poor quality of roads	4.13	27.255	0.00	Rejected
Poor quality of the drainage system	3.93	21.609	0.00	Rejected

Note: Cronbach's alpha = .693; Normality = Normal.

Competition challenges. Huge competition is the most important problem faced by MSMEs in recent days. Owing to the increase in the number of similar products in the market, entrepreneurs have to take proper care to produce high-quality products with lower costs, due to huge competition with large enterprises in a country. Table 10 shows that there are competition from large enterprises ($\bar{x} = 2.73, t = -4.613, p < .05$), established small industries in the region ($\bar{x} = 3.55, t = 11.9, p < .05$), established small industries in other regions ($\bar{x} = 3.57, t = 12.485, p < .05$), and competition from imported substitutes ($\bar{x} = 3.35, t = 6.86, p < .05$). The stiff competition is faced by MSMEs in all stages of business (Mali, 1998; Bala, 2004). However, it was found that completion within MSMEs is a major concern for entrepreneurs.

Table 10. Competition challenges

Source: Authors' compilation.

Problems	Mean	t-value	Significance	Result
Competition from large enterprises	2.73	-4.613	0.00	Rejected
Established small industries in the region	3.55	11.9	0.00	Rejected
Established small industries in other regions	3.57	12.485	0.00	Rejected
Competition from imported substitutes	3.35	6.86	0.00	Rejected

Note: Cronbach's alpha = .675; Normality = Normal.

Knowledge-related challenges. Different enterprises surveyed in the study have reported that ineffective knowledge leads to becoming significant problems for the industry. Table 11 shows that there are different associated challenges, namely lack of managerial skills ($\bar{x} = 3.5$, $t = 9.977$, $p < .05$), lack of accounting skills ($\bar{x} = 2.85$, $t = -2.826$, $p \leq .05$), and technical skills ($\bar{x} = 3.42$, $t = 8.188$, $p < .05$). These findings support the idea that poor managerial skills among entrepreneurs is the main problem for MSMEs in Bihar. These results support McAdam and Reid (2001).

Table 11. Knowledge-related challenges

Source: Authors' compilation.

Problems	Mean	t-value	Significance	Result
Lack of managerial skills	3.50	9.977	0.00	Rejected
Lack of accounting skills	2.85	-2.826	0.05	Rejected
Lack of technical skills	3.42	8.188	0.00	Rejected

Note: Cronbach's alpha = .675; Normality = Normal.

Government and administrative challenges. Political changes and administrative bottlenecks could affect the growth of MSMEs. The policy-making challenges are related to high taxation policy, high rate of interest, unfavorable investment climate; they create major barriers for the development and substantial growth of SMEs in India (Priyadi & Kanai, 2011). Table 12 shows that there are several government and administrative problems like strict credit policy ($\bar{x} = 3.31$, $t = 6.37$, $p < .05$), unfavorable investments climate ($\bar{x} = 3.13$, $t = 2.754$, $p > .05$), and fear of nationalization ($\bar{x} = 2.12$, $t = -15.266$, $p < .05$). Thus, the high taxation policy of the government highly affects the growth of MSMEs in Bihar.

Table 12. Government and administrative challenges

Source: Authors' compilation.

Problems	Mean	t-value	Significance	Result
Strict credit policy	3.31	6.370	0.00	Rejected
Unfavorable investments climate	3.13	2.754	0.06	Fail to reject
Fear of nationalization	2.12	-15.266	0.00	Rejected
Restrictions on purchases	3.40	8.723	0.00	Rejected
Excessive taxation policy of the government	3.54	12.455	0.00	Rejected

Note: Cronbach's alpha = .725; Normality = Normal.

Management-related challenges. Poor project, personnel, and finance management leads enterprises to become sick. Table 13 shows such managerial problems as poor utilization of the assets ($\bar{x} = 3.57$, $t = 14.828$, $p < .05$), underutilization of installed capacity ($\bar{x} = 3.06$, $t = 1.336$, $p > .05$), inadequate material management ($\bar{x} = 3.42$, $t = 9.467$, $p < .05$), absence of product planning ($\bar{x} = 3.12$, $t = 2.433$, $p < .05$), absence of manpower planning ($\bar{x} = 3.14$, $t = 2.851$, $p < .05$), disputes among partners ($\bar{x} = 1.91$, $t = -19.81$, $p < .05$), and lack of market research ($\bar{x} = 3.64$, $t = 11.863$, $p < .05$). Poor utilization of assets became the major barrier for entrepreneurs in Bihar.

Table 13. Management-related challenges

Source: Authors' compilation.

Problems	Mean	t-value	Significance	Result
Poor utilization of the assets	3.57	14.828	0.05	Rejected
Underutilization of installed capacity	3.06	1.336	0.18	Failed to reject
Inadequate material management	3.42	9.467	0.05	Rejected
Absence of product planning	3.12	2.443	0.01	Rejected
Absence of manpower planning	3.14	2.851	0.00	Rejected
Disputes among partners	1.91	-19.810	0.00	Rejected
Lack of market research	3.64	11.863	0.00	Rejected

Note: Cronbach's alpha = .704; Normality = Normal.

Other challenges. Table 14 shows that there are other problems namely natural disasters ($\bar{x} = 2.98$, $t = -0.428$, $p > .005$), man-made calamities ($\bar{x} = 3.49$, $t = 10.022$, $p > .005$), border disputes ($\bar{x} = 3.00$,

$t = 0.038, p > .005$), domestic problems of entrepreneurs ($\bar{x} = 3.22, t = 4.101, p < .005$), and general recession ($\bar{x} = 3.54, t = 9.97, p < .005$). The paper concludes that market general recession became a cause of huge concern for MSMEs in Bihar.

Table 14. Other related challenges

Source: Authors' compilation.

Problems	Mean	t-value	Significance	Result
Natural disasters	2.98	-0.428	0.669	Failed to reject
Man-made calamities	3.49	10.022	0.000	Rejected
Border disputes	3.00	0.038	0.970	Failed to reject
Domestic problems of entrepreneurs	3.22	4.101	0.000	Rejected
General recession	3.54	9.97	0.000	Rejected

Note: Cronbach's alpha = .721; Normality = Normal.

4.1. Ranking of major variables

Based on the findings it can be seen that MSMEs in Bihar have twelve major barriers that are ranked in Table 15. First, MSMEs argued that poor quality of roads is a major challenge faced by the owners/managers to smooth movement of products and services in Bihar. Second, the electricity charges have been continuously increasing in the last few years. Third, MSMEs did not have proper access to public transport, which leads to an increase in the production and distribution cost of products. Fourth, the inadequate power supply forced to invest capital in other modes of power generators to reduce the gap of power supply. Fifth, the poor quality of the drainage system in Bihar ruins raw materials as well as products in the rainy season. Sixth, MSMEs blame that more dependency on private transport leads to higher amounts for the transportation of products. Seventh, poor marketing strategy creates severe problems for MEMEs. Eighths, MSMEs also admit that delayed payment received from the creditors affects their working capital management negatively. Ninth, MSMEs face a shortage of working capital. Tenth, MSMEs blame that lack of finance/crisis of finance have a high adverse impact on the purchase of raw materials. Eleventh, MSMEs also admitted that market recession makes it difficult to predict the demand for products necessary for business development. Twelfth, labor absenteeism complicates the process of employee hiring for owners/managers.

Table 15. Rank of major challenges

Source: Authors' compilation.

Factors	Mean	Rank
Poor quality of roads	4.14	1
High electricity charges	4.08	2
Lack of public transport	4.05	3
Inadequate power supply	3.96	4
Poor quality of drainage system	3.96	5
High transport cost	3.95	6
Poor marketing strategy	3.94	7
Delay in payment from creditors	3.87	8
Shortage of working capital	3.84	9
Lack of finance for raw materials	3.82	10
Market recession/Lack of demand	3.74	11
Absenteeism	3.73	12

4.2. ANOVA test

ANOVA test is conducted to identify whether there were any variations in the responses for each category of barriers and variables in those categories of MSMEs, which have different socio-economic characteristics. Based on 12 categories of barriers, the study forms variations in the mean of responses based on their social characteristics and enterprise product specification, education, type of organization, ownership pattern, and gender.

Table 16 defines the relationship between independent variables (product specification, educational qualification, type of organization, ownership patterns, and gender) and dependent variables. The multivariate ANOVA test result has been processed with the test of homogeneity and the significance value of Levene's test being more than 0.05. Further, the functional relationship between dependent and independent variables has been processed. By using the stepwise multivariate ANOVA test, it was shown that product specification and barriers do not have a significant relationship. Educational qualification and labor issues, competition problems have a significant relationship; further, gender has a positive significant relationship with 12 dependent variables.

To conclude, it is clear that problems are directly related to gender, hence it is obvious that gender biases have affected the MSMEs growth in Bihar.

Table 16. Multivariate ANOVA test results

Source: Authors' compilation.

Independent variables	Dependent variables	F	Significance	Conclusion
Product specification	Raw material challenges	9.080	0.00	Reject H_0
	Financial challenges	2.253	.018	Reject H_0
	Labor challenges	8.158	.000	Reject H_0
	Technology challenges	5.543	.000	Reject H_0
	Power supply challenges	4.118	.000	Reject H_0
	Marketing challenges	4.412	.000	Reject H_0
	Infrastructure challenges	2.437	.010	Reject H_0
	Competition challenges	9.412	.000	Reject H_0
	Knowledge-related challenges	3.295	.001	Reject H_0
	Government and administrative challenges	4.070	.000	Reject H_0
	Management-related challenges	4.249	.000	Reject H_0
Other challenges	5.210	.000	Reject H_0	
Educational qualification	Raw material challenges	9.728	.000	Reject H_0
	Financial challenges	7.643	.000	Reject H_0
	Labor challenges	.661	.681	Accept H_1
	Technology challenges	10.668	.000	Reject H_0
	Power supply problem	3.885	.001	Reject H_0
	Marketing challenges	3.661	.001	Reject H_0
	Infrastructure challenges	2.950	.008	Reject H_0
	Competition challenges	2.467	.023	Accept H_1
	Knowledge-related challenges	9.231	.000	Reject H_0
	Government and administrative challenges	4.592	.000	Reject H_0
	Management-related challenges	4.563	.000	Reject H_0
Other challenges	4.093	.001	Reject H_0	
Gender	Raw material challenges	.012	.994	Accept H_1
	Financial challenges	.023	.880	Accept H_1
	Labor challenges	.877	.349	Accept H_1
	Technology challenges	.012	.913	Accept H_1
	Power supply challenges	.186	.667	Accept H_1
	Marketing challenges	.584	.445	Accept H_1
	Infrastructure challenges	.211	.646	Accept H_1
	Competition challenges	.001	.975	Accept H_1
	Knowledge-related challenges	.264	.608	Accept H_1
	Government and administrative challenges	1.878	.171	Accept H_1
	Management-related challenges	.206	.650	Accept H_1
Other challenges	.048	.827	Accept H_1	

4.3. Potential solutions

MSMEs expect to get many solutions from the various stakeholders and government that could help to survive in the competitive global market. MSMEs respondents agree that government needs to facilitate industrial training and technical education to improve the quality of goods that are delivered from enterprises to the market. In Bihar, the legislative and regulatory problem is a major threat for the MSMEs. The legislative situation needs to be improved to foster the entrepreneurship; timely remedial actions are needed to solve

the pending issues/files of the enterprises and enhance their potential. Furthermore, there should be a regular evaluation of programs to measure the performance and effectiveness of their program in helping SMEs.

MSMEs in Bihar faced poor quality of a road and transportation system, hence government should need to focus on road and transport development. In addition, it is vital to reduce financial problems and promote soft loan facilitation to MSMEs with a single-window clearance system for credit disbursement. MSMEs were facing completion with

large firms; it requires taking positive steps to reduce the tax burden, licensing fee, effective tax policy, and increase their subsidies. To reduce the financial burden, the government can lower high electricity charges and install electricity in rural areas, which helps to create an effective environment for the MSMEs growth in Bihar. The government is expected to implement free and

easy-to-access programs that will help SMEs to enter the global market (e.g. training on marketing skills and strategies, knowledge transfer, and entrepreneurial motivation). Policymakers are suggested to reduce the gender gap and promote women's entrepreneurship as they face huge problems beyond male entrepreneurs operating MSMEs in Bihar.

CONCLUSION

The study concluded that there are twelve major obstacles/barriers faced by MSMEs in Bihar, India: poor quality of roads, high electricity charges, lack of public transport, inadequate power supply, poor quality of drainage system, high transport cost, poor marketing strategy, delay in payments from creditors, shortage of working capital, lack of finance for raw materials, market recession/lack of demand, and absenteeism. In addition, it was found that gender inequality is a critical problem as many female entrepreneurs are highly affected by this obstacle.

Based on the primary investigation, many MSMEs hope that government effective policy could help to reduce barriers and problems. The expectation of MSMEs can be achieved through the high determination of the government towards creating a good governance environment. Through effective and good governance, the government can eliminate major obstacles for MSMEs. In the future, there is a need to focus on the migration of technical labor as it is a major hurdle for MSMEs, and it can be reduced through higher compensation and additional incentives to employees by MSMEs owners. Financial institutions and government may create high awareness towards loan policies, training programs, reduction in energy supply, and tax regulation policy, which will effectively enhance MSME functioning and timely delivery of products and services with a low level of corruption. Thus, the government should assist entrepreneurs through marketing opportunities, removal of barriers of labor laws, and financial subsidy, which will help them to come out from the barriers to run the enterprises in Bihar.

AUTHOR CONTRIBUTIONS

Conceptualization: Bishwajeet Prakash.

Data curation: Bishwajeet Prakash.

Formal analysis: Bishwajeet Prakash.

Investigation: Bishwajeet Prakash.

Methodology: Bishwajeet Prakash.

Project administration: Indrajit Kumar.

Resources: Indrajit Kumar, Jainendra Kumar Verma.

Software: Bishwajeet Prakash.

Supervision: Jainendra Kumar Verma.

Validation: Indrajit Kumar, Jainendra Kumar Verma.

Visualization: Indrajit Kumar, Jainendra Kumar Verma.

Writing – original draft: Bishwajeet Prakash.

Writing – review & editing: Jainendra Kumar Verma.

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