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 stage 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.

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 (Kamusenge 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; Ola wale & Garwe, 2010; Palmiet & 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) |
2. AIMS AND HYPOTHESES

This study aims to provide empirical evidence and analyze the factors affecting 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 as developing the relationship between organizational structure and barriers in operation of MSMEs in state.

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

\( H_1: \) 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.

\( H_2: \) Education qualification, gender, and industries classification do not significantly 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

| 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 |
|                                  | Miscellaneous enterprises | 23 | 5.1 |
| Education                        | Below 10th grade | 61 | 13.6 |
|                                  | 10th grade | 129 | 28.7 |
|                                  | 12th 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 (27.2%) 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 ($\bar{x} = 3.50, t = 8.542, p < .005$) 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).

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

| Problems                      | Mean $\bar{x}$ | 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

| Problems                          | Mean $\bar{x}$ | 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

| Problems                           | Mean $\bar{x}$ | 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**

| 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**

| 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**

| 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**

| 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 |
Table 10. Competition challenges

| 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.

Table 12. Government and administrative challenges

| 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   |
| Restraints restriction 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.

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

| 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.

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

| 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

| 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        | Rejected |
| 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

| 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.
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

Table 16. Multivariate ANOVA test results

| Independent variables | Dependent variables | F     | Significance | Conclusion |
|-----------------------|--------------------|-------|--------------|------------|
| Product specification | Raw material challenges | 9.080 | 0.000        | Reject H₀  |
| | Financial challenges    | 2.253 | 0.118        | Reject H₀  |
| | Labor challenges        | 8.158 | 0.000        | Reject H₀  |
| | Technology challenges   | 5.543 | 0.000        | Reject H₀  |
| | Power supply challenges | 4.118 | 0.000        | Reject H₀  |
| | Marketing challenges    | 4.412 | 0.000        | Reject H₀  |
| | Infrastructure challenges | 2.437 | 0.100       | Reject H₀  |
| | Competition challenges  | 9.412 | 0.000        | Reject H₀  |
| | Knowledge-related challenges | 3.295 | 0.011       | Reject H₀  |
| | Government and administrative challenges | 4.070 | 0.000  | Reject H₀  |
| | Management-related challenges | 4.249 | 0.000 | Reject H₀  |
| | Other challenges        | 5.210 | 0.000        | Reject H₀  |
| Educational qualification | Raw material challenges | 9.728 | 0.000        | Reject H₀  |
| | Financial challenges    | 7.643 | 0.000        | Reject H₀  |
| | Labor challenges        | 6.61  | 0.681        | Accept H₁  |
| | Technology challenges   | 10.668| 0.000        | Reject H₀  |
| | Power supply challenges | 3.885 | 0.001        | Reject H₀  |
| | Marketing challenges    | 3.661 | 0.001        | Reject H₀  |
| | Infrastructure challenges | 2.950 | 0.008       | Reject H₀  |
| | Competition challenges  | 2.467 | 0.223        | Accept H₁  |
| | Knowledge-related challenges | 9.231 | 0.000       | Reject H₀  |
| | Government and administrative challenges | 4.592 | 0.000  | Reject H₀  |
| | Management-related challenges | 4.563 | 0.000 | Reject H₀  |
| | Other challenges        | 4.093 | 0.001        | Reject H₀  |
| Gender                | Raw material challenges | 0.012 | 0.994        | Accept H₁  |
| | Financial challenges    | 0.23  | 0.880        | Accept H₁  |
| | Labor challenges        | 0.877 | 0.349        | Accept H₁  |
| | Technology challenges   | 0.012 | 0.913        | Accept H₁  |
| | Power supply challenges | 1.86  | 0.667        | Accept H₁  |
| | Marketing challenges    | 0.584 | 0.445        | Accept H₁  |
| | Infrastructure challenges | 0.211 | 0.646       | Accept H₁  |
| | Competition challenges  | 0.001 | 0.975        | Accept H₁  |
| | Knowledge-related challenges | 2.64  | 0.608       | Accept H₁  |
| | Government and administrative challenges | 1.878 | 0.171  | Accept H₁  |
| | Management-related challenges | 0.206 | 0.650 | Accept H₁  |
| | Other challenges        | 0.488 | 0.827        | Accept H₁  |
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**

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