

Firm-level heterogeneity and performance implications: An empirical investigation of MSMEs

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Abstract

This study examines the association between the firm-level characteristics and strategic performance (SP) and financial performance (FP) of Micro, Small and Medium Enterprises (MSMEs). In particular, this study investigates the individual and collective contributions of firm age, nature of business, ownership structure, number of employees, funding sources and type to the SP and FP of MSMEs operating in Tamil Nadu, India, using the General Linear Model procedure in SPSS. The findings reveal that firm-level characteristics collectively exhibit a statistically significant association with SP and FP, whereas firm type contributes to FP individually. The study contributes to MSME literature by simultaneously examining multiple firm-level characteristics in relation to two different performance dimensions. The findings highlight the practical implications for academicians, owners and policymakers.

Keywords: firm-level characteristics, financial performance, MSMEs, strategic performance

1. Introduction

Micro, Small and Medium Enterprises (MSMEs) play a critical role in India's economic development, making significant contributions to the country's Gross Domestic Product (GDP), employment (Thakur, 2026), exports and green development (Shelly et al., 2020; Chakraborty, 2024). Moreover, the contribution of MSMEs to the development of the country may vary depending upon different factors such as size of the firm, nature of their operations, years of experience in the field and cultural and geographical factors. These factors vary across firms. MSMEs in India are classified based on investment in plant and machinery and annual turnover. Therefore, the amount invested in the business and the output generated by the business are considered the criteria for classifying entities as micro, small, or medium. In 2006, to bring all the unorganised small-scale businesses under a single regulatory system, the Government of India began formalising MSMEs. Moreover, the differentiation among micro, small and medium businesses remains. Among these, MSMEs may be classified on the basis of years of operation, ownership structure and major sources of funding. So, the output generated and the contributions made by MSMEs differ based on factors not covered by regulations and policies. These differences may help businesses achieve varying levels of organisational performance.

Strategic performance (SP) and financial performance (FP) are considered major criteria for evaluating a firm's efficiency. According to Vasiu (2019), "FP is defined and measured as the result of continuous effort in a competitive environment, influenced by internal and external factors". Zou and Cavusgil (2002) have

defined SP as “the competitive position a firm gains through its relational strategy relative to competitive firms”. The firm-level characteristics are often interrelated. For instance, firm classification overlaps with employee size and investment in the business. The ownership structure may be associated with its major funding sources. This is because proprietorships may depend more on their own capital, whereas companies may have more access to external financing. This heterogeneity of MSMEs represents an important firm attribute that may shape business operations, resource allocation and utilisation, managerial decision-making and competitive capabilities. The present study examines the effect of firm-level characteristics such as age, nature of business, ownership structure, firm size, sources of funding, SP and FP of MSMEs. The findings reveal that firm-level characteristics collectively exhibit a statistically significant association with SP and FP, whereas firm type contributes to FP individually.

2. Theoretical Underpinnings and Development of Hypothesis

2.1. Influence of Firm-level characteristics

The relationship between firm-level characteristics and firm performance can be explained by the resource-based view. This theory highlights the role of organisational resources and capabilities in generating competitive advantages (Barney, 1991). In this context, firm-level characteristics can influence the performance of a firm by shaping the resources available to it and its ability to utilise them effectively. Among various MSME characteristics, firm size and age are considered the most important ones (Blackburn et al., 2013; Zhou & Gumbo, 2021). Calub (2026) highlights that firm size, years of experience and owners' educational qualifications are the key factors influencing the growth and profitability of MSMEs in the Philippines. Firm performance in the Indian MSME sector is significantly influenced by firm size and age (Sinha et al., 2021).

In contradiction to these findings, Kurniawan et al. (2022) argued that firm performance cannot be determined solely by company size and age; other factors must be considered for a more accurate assessment. The nature of business of MSMEs is classified into manufacturing, service and trading. The study conducted among Indian MSMEs showed that the industrial line or sector in which a firm operates has a greater impact on profitability and resource dependency (Fatima & Akhtar, 2023). A study conducted in Ghana found that firms in the service sector were less profitable than those in the manufacturing and trading sectors (Ayambila, 2023). Regarding the ownership structure of MSMEs, it is classified into proprietorships, private limited companies, partnerships, self-help groups, and other categories. The study conducted in Pacita proved that ownership structure positively impacts MSME performance (Sudyantara et al., 2025). But studies conducted among corporates have shown that ownership structure negatively impacts organisational performance (Demsetz & Villalonga, 2001; Tiwari & Kumar, 2020). Regarding the major sources of funding, a study conducted in India among MSMEs found that these sources positively affect access to finance (Rajamani et al., 2022). Regarding the contribution of firm-level characteristics to SP, there are not enough studies among MSMEs to demonstrate their impact. Most of the literature has classified SP alongside firm performance; there is no separate classification for SP. In the context of large firms, Handoyo et al. (2023) demonstrated that firm size and industry type significantly influence firms' strategic orientation. In this context, there is also no separate classification for SP. In the backdrop of this discussion, the following hypotheses have been framed:

H1: Firm-level characteristics significantly influence SP of MSMEs.

H2: Firm-level characteristics significantly influence FP of MSMEs.

3. Research methodology

The present study adopted a quantitative research approach and an explanatory research design to examine the influence of firm-level characteristics on MSME performance. The study was conducted using primary data collected from 304 MSMEs engaged in manufacturing, service, and trading in Tamil Nadu, India. A structured questionnaire was employed to obtain information from respondents regarding their firm-level characteristics, such as firm age, nature of business, ownership structure, number of employees, and funding sources and types. Firm age was categorised into five groups based on years of operation. The nature of business was classified into manufacturing, services and trading. Ownership structure was classified into companies, partnerships and proprietorships. The number of employees was grouped into five categories, and funding sources were classified into own capital, bank finance, government and other financial institutions. Finally, MSMEs were classified into micro, small and medium enterprises based on their type. The study considered SP and FO as dependent variables, both measured on a 5-point Likert scale. The scales of Li and Zhang (2007) and Sheng et al. (2011) were used for SP and Thourungrroje et al. (2022) for FP. The data were analysed using IBM SPSS version 32. Descriptive statistics, including mean, standard deviation (SD), minimum and maximum, were calculated to analyse the overall distribution of SP and FP. Multifactorial Analysis of Variance (ANOVA) was conducted using the General Linear Model (GLM-Univariate) procedure to examine the individual and collective associations between firm-level characteristics and MSME performance.

4. Results

4.1. Demographic profile of the participants

Table 1: Demographic profile of the MSMEs surveyed

Variables	Category	Number (n)	Percentage
Size	Micro	192	63.15%
	Small	66	21.71%
	Medium	46	15.13%
Firm age	Less than 5 Years	133	43.7%
	5-10 Years	39	12.8%
	10-15 Years	32	10.6%
	15-20 Years	30	9.86%
	Above 20 Years	70	23.02%
Nature of business	Manufacturing	141	46.4%
	Service	117	38.5%
	Trading	46	15.1%
Ownership pattern	Company	96	31.57%
	Partnership	101	33.22%
	Proprietorship	107	35.19%
Number of employees	1-50	192	63.15%
	50-100	28	9.21%
	100-150	21	6.90%
	151-200	15	4.93%
	Above 200	48	15.78%

Major funding source	Own capital	160	52.63%
	Bank	87	28.61%
	Government	40	13.15%
	Other financial institutions	17	5.59%

Table 1 shows the profile of respondents who participated in the survey. Among 304 firms, 63.15% fall under the micro category, 21.71% under the small category and the remaining 15.13% under the medium category. Regarding firm age, 43.7% of the MSMEs are engaged in business for a period of less than 5 years, and only 9.86% are 15 to 20 years old. Discussing the nature of business, 46.4% of firms are in the manufacturing business, 38.5% are in the service business, and the remaining 15.1% are in the trading business. Regarding the ownership structure, 31.57% are companies, 33.22% are partnerships and 35.19% are proprietorships. Among the 304 MSMEs, the largest share (63.15%) has 1-50 employees. When discussing major funding sources, 52.63% of firms use their own capital.

4.2 Descriptive Statistics and Reliability

The descriptive statistics (Table 2) present the overall SP and FP of the 304 MSMEs included in the study. SP recorded a mean score of 3.5329 with a standard deviation of 0.7979, whereas FP exhibited a high mean of 3.7031 with a standard deviation of 0.7545. The SP and FP scales were assessed for reliability. The Cronbach's alpha values of SP (0.819) and FP (0.904) are above the specified threshold of 0.7 (Tavakol & Dennick, 2011), indicating that the scales are reliable.

Table 2: Descriptive Statistics and Reliability

Performance	N	Minimum	Maximum	Mean	SD	α
SP	304	1.00	5.00	3.5329	.79794	0.819
FP	304	1.00	5.00	3.7031	.75457	0.904

4.3 General Linear Model Results for SP

GLM results for SP (Table 3) revealed that the overall model was statistically significant ($df = 17$, $F = 2.242$, $p = 0.004$), explaining approximately 11.8% of the variance in SP ($R^2 = 0.118$). However, firm age, nature of business, ownership structure, number of employees, and funding source and type are not shown to have a statistically significant individual adjusted association with the SP of MSMEs at the 5% significance level. Among the six firm characteristics, MSME type exhibited the strongest partial effect ($\eta^2 = 0.020$) and was statistically significant ($p = 0.055$).

Table 3: General Linear Model Results for SP

Source	Type III SS	df	F-value	p-value	Partial η^2
Corrected Model	22.685	17	2.242	0.004	0.118
Firm age	1.152	4	0.484	0.748	0.007
Nature of business	1.415	2	1.189	0.306	0.008
Ownership structure	1.914	2	1.608	0.202	0.011
Number of employees	2.693	4	1.131	0.342	0.016
Funding source	1.590	3	0.891	0.446	0.009

Type	3.494	2	2.935	0.055	0.020
Error	170.236	286	—	—	—

N = 304; $R^2 = 0.118$; Adjusted $R^2 = 0.065$

4.4 General Linear Model Results for FP

Another set of GLMs was employed to analyse the combined explanatory contribution of firm-level characteristics to FP (Table 4). The result indicated that the overall model was statistically significant ($df = 17$, $F = 2.242$, $p = 0.002$), explaining around 12.6% of the variance in FP of MSMEs ($R^2 = 0.126$). The adjusted R^2 (0.0074) indicated that the model explained around 7.4% of the variance in FP after adjusting for six predictors. Therefore, H1 is supported.

Table 4: General Linear Model Results for FP

Source	Type III SS	df	F-value	p-value	Partial η^2
Corrected Model	21.694	17	2.420	0.002	0.126
Firm age	3.734	4	1.770	0.135	0.024
Nature of business	0.427	2	0.405	0.667	0.003
Ownership structure	2.057	2	1.951	0.144	0.013
Number of employees	1.050	4	0.498	0.737	0.007
Funding source	0.588	3	0.371	0.774	0.004
Type	4.467	2	4.235	0.015	0.029
Error	150.826	286	—	—	—

N = 304; $R^2 = 0.126$; Adjusted $R^2 = 0.074$.

Among the six firm-level characteristics, MSME type demonstrated a statistically significant adjusted association with FP ($df = 2$, $F = 4.235$, $p = 0.015$). However, firm age, nature of business, ownership structure, and number of employees did not exhibit statistically significant individual associations with FP. Therefore, H2 is supported.

Table 4.5 Turkey HSD post hoc comparisons

	Comparison	MD	SE	p
SP	Micro – Small	−0.0830	0.1106	0.734
SP	Micro – Medium	−0.5716	0.1272	< .001
SP	Small – Medium	−0.4886	0.1488	0.003
FP	Micro – Small	−0.0791	0.1041	0.728
FP	Micro – Medium	−0.5750	0.1198	< .001
FP	Small - Medium	−0.4959	0.1401	0.001

The Turkey post hoc comparisons (Table 4.5) show that medium enterprises have significantly higher SP than micro (MD (Mean Difference) = 0.5716, $p < 0.001$) and small enterprises (MD = 0.4886, $p = 0.003$). A similar pattern is observed for FP, where medium enterprises reported significantly higher performance than micro (MD = 0.5750, $p < 0.001$) and small enterprises (MD = 0.4959, $p = 0.001$).

5. Discussion and conclusion

The present study examined the influence of firm-level characteristics on SP and FP of MSMEs. The analysis considered six firm-level characteristics: firm age, nature of business, ownership structure, number of employees, funding sources and type. Based on the data collected from 304 MSMEs, the findings provide insight into the extent to which firm-level characteristics explain the variance in SP and FP. The comparatively higher mean value for FP indicates that respondents evaluated their financial outcomes more favourably than their SP. The results found that firm-level characteristics collectively exhibit a statistically significant association with both SP ($df = 17$, $F = 2.242$, $p = 0.004$) and FP ($df = 17$, $F = 2.242$, $p = 0.002$). It supports the findings of Rajamani et al. (2022), Ayambila (2023) and Sudyantara et al. (2025). Accordingly, both hypotheses were supported regarding the collective explanatory contribution of firm-level characteristics. Regarding the individual contribution of firm-level characteristics, only MSME type contributes to the FP. It is evident that the types of MSMEs, such as micro, small, and Medium, have a significant influence on the FP of MSMEs. Among the three firm types, medium enterprises have more SP and FP compared to others.

6. Practical implication

The findings of the study offer practical implications for academicians, managers, and policymakers. The results of this study highlight the importance of conceptualising MSME performance as a multidimensional construct. Researchers should consider examining SP and FP separately for MSMEs rather than relying exclusively on a single composite performance measure. It contributes to MSME literature by demonstrating the collective explanatory relevance of firm-level characteristics. The findings of this study help policymakers and financial institutions adopt differentiated support mechanisms for micro, small and medium entities, assuming that their FP outcomes vary. The findings enable owners and managers to pay greater attention to strengthening internal capabilities, resource utilisation and managerial efficiency.

7. Limitations and future research directions

Despite providing insights into the relationship between firm-level characteristics and MSME performance, the study has certain limitations. Firstly, the study considered only six firm-level characteristics and two performance measures. Future research can include additional firm-level characteristics. SP and FP were assessed based on respondents' perceptions from a single country. Future researchers can employ cross-country comparisons to better generalise the findings. The present study did not account for environmental factors. Future researchers can include external factors such as demand uncertainty and technological turbulence.

Reference

1. Ayambila, S. N. (2023). Determinants of micro and small enterprises financial performance in the non-farm sector of Ghana: A quantile regression approach. *Cogent Economics & Finance*, 11(2), 2225331. <https://doi.org/10.1080/23322039.2023.2225331>
2. Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1), 99–120. <https://doi.org/10.1177/014920639101700108>

3. Blackburn, R. A., Hart, M., & Wainwright, T. (2013). Small business performance: Business, strategy and owner-manager characteristics. *Journal of Small Business and Enterprise Development*, 20(1), 8–27. <https://doi.org/10.1108/14626001311298394>
4. Calub, F. D. (2026). Resource and Human Capital Synergies as Determinants of MSME Growth: Evidence from Bislig City, Philippines. *International Review of Management and Marketing*, 16(2), 435–444. <https://doi.org/10.32479/irmm.22375>
5. Chakraborty, Dr. M. (2024). MSMEs in India: Growth and challenges. *International Journal of Multidisciplinary Trends*, 6(3), 16–20. <https://doi.org/10.22271/multi.2024.v6.i3a.388>
6. Demsetz, H., & Villalonga, B. (2001). Ownership structure and corporate performance. *Journal of Corporate Finance*, 7(3), 209–233. [https://doi.org/10.1016/S0929-1199\(01\)00020-7](https://doi.org/10.1016/S0929-1199(01)00020-7)
7. Fatima, M., & Akhtar, S. M. J. (2023). Performance of Micro, Small and Medium Enterprises in Aligarh District of Uttar Pradesh. *SEDME (Small Enterprises Development, Management & Extension Journal): A Worldwide Window on MSME Studies*, 50(4), 365–383. <https://doi.org/10.1177/09708464231195926>
8. Kurniawan, D., Ardyan, E., Istiatin, I., & Luhglatno, L. (2022). Impacts of Company Size, Company Age, and the Generation of the Leader on Firm Performance. *Binus Business Review*, 13(3), 273–283. <https://doi.org/10.21512/bbr.v13i3.8213>
9. Li, H., & Zhang, Y. (2007). The role of managers' political networking and functional experience in new venture performance: Evidence from China's transition economy. *Strategic Management Journal*, 28(8), Article 8. <https://doi.org/10.1002/smj.605>
10. Rajamani, K., Akbar Jan, N., Subramani, A. K., & Nirmal Raj, A. (2022). Access to Finance: Challenges Faced by Micro, Small, and Medium Enterprises in India. *Engineering Economics*, 33(1), 73–85. <https://doi.org/10.5755/j01.ee.33.1.27998>
11. Shelly, R., Sharma, T., & Bawa, S. S. (2020). ROLE OF MICRO, SMALL AND MEDIUM ENTERPRISES IN INDIAN ECONOMY. *International Journal of Economics and Financial Issues*, 10(5), 84–91. <https://doi.org/10.32479/ijefi.10459>
12. Sheng, S., Zhou, K. Z., & Li, J. J. (2011). The Effects of Business and Political Ties on Firm Performance: Evidence from China. *Journal of Marketing*, 75(1), 1–15. JSTOR.
13. Sinha, A. K., Mishra, A. K., & Manogna, R. L. (2021). Examining the Performance of MSME Firm in India: An Empirical Analysis at Industry Level. In A. K. Mishra, A. S. Vinzé, R. S. Gupta, & R. Menon (Eds.), *Advances in Innovation, Trade and Business* (pp. 69–83). Springer International Publishing. https://doi.org/10.1007/978-3-030-60354-0_5
14. Sudyantara, S. C., Mulyanto, T., Yuwono, A., Fauzan, I., & Sobirov, B. (2025). The Effect of Managerial Ownership on the Financial Performance of MSMEs: A Profitability Enhancement Perspective. *American Journal of Economics and Business Management*, 8(1), 320–330. <https://doi.org/10.31150/ajebm.v8i1.3239>
15. Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, 2, 53–55. <https://doi.org/10.5116/ijme.4dfb.8dfd>
16. Thakur, M. K. (2026). ROLE OF MSMEs IN ECONOMIC DEVELOPMENT OF INDIA. *Journal of Advanced Management Studies*, 3(1), 1–12. <https://doi.org/10.36676/jams.v3.i1.90>
17. Thoumrungroje, A., Racela, O. C., & Zhang, M. (2022). Foreign subsidiaries' relational strategic emphasis and performance implications amid environmental turbulence. *Journal of Asia Business Studies*, 16(4), Article 4. <https://doi.org/10.1108/JABS-01-2021-0012>

18. Tiwari, R., & Kumar, S. (2020). CORPORATE OWNERSHIP STRUCTURE AND PERFORMANCE: AN INDIAN PERSPECTIVE. *International Journal of Corporate Governance*, 11(3/4), 1. <https://doi.org/10.1504/IJCG.2020.10034057>
19. Vasiu, D. E. (2019). A 360 DEGREE LOOK ON THE CONCEPT OF FINANCIAL PERFORMANCE. *Revista Economică*.
20. Zhou, H., & Gumbo, V. (2021). The Role of Size and Age on Firm Growth: Evidence from Manufacturing SMMEs in KwaZulu-Natal Province, South Africa. *African Journal of Inter/Multidisciplinary Studies*, 3(1), 144–160. <https://doi.org/10.51415/ajims.v3i1.903>
21. Zou, S., & Cavusgil, S. T. (2002). The GMS: A Broad Conceptualization of Global Marketing Strategy and Its Effect on Firm Performance. *Journal of Marketing*, 66(4), 40–56. <https://doi.org/10.1509/jmkg.66.4.40.18519>