International Journal of Innovative Research in Engineering and Management (IJIREM)
ISSN (Online): 2350-0557, Volume 13, Issue 2, April 2026
DOI: https://doi.org/10.55524/ijirem.2026.13.2.5
Article ID IJIR3176, Pages 33-37
www.ijirem.org

Determinants of Operational Constraints in India's Unorganised Manufacturing Enterprises: Evidence from ASUSE 2023–24

Debashruti Jana[1], and *Nilmadhab Das[2]

[1]Research Scholar, Department of Economics, Vidyasagar University, Midnapore, West Bengal, India.
[2]Assistant Professor, Department of Economics, GLA University, Mathura, Uttar Pradesh, India.

*Correspondence should be addressed to Nilmadhab Das; nilmadhabdas747@gmail.com

Received: 23 February 2026; Revised: 11 March 2026; Accepted: 24 March 2026

ABSTRACT: This study examines the factors behind operational and structural difficulties faced by unorganised manufacturing businesses (UMEs) in India. It uses data from the Annual Survey of Unincorporated Sector Enterprises (ASUSE) 2023–24 to examine the factors associated with problems faced in the unorganised sector using a logistic regression framework. Rural-based enterprises are much more likely to have faced problems when compared to urban-based enterprises; similarly, own-account enterprises will experience problems compared to when there are hired workers involved in running the business. Additionally, social inequities exist, and SC and OBC enterprises tend to report difficulties much more often than other enterprises. Institutional and managerial factors, such as registration and maintenance of accounts, are also associated with a higher likelihood of reported constraints. In addition, the enterprise age and the education level of the owner influence the probability of facing operational difficulties. This study indicates that by improving infrastructure, loan facilities, skills training, and the adoption of new technologies, it is possible to reduce the major problems faced by the unorganised manufacturing sector.

KEYWORDS: Unorganised Manufacturing Sector, MSMEs, Problem Faced, Enterprise Characteristics, Logistics Regression, ASUSE Data, India

I. INTRODUCTION

The role of MSMEs in the economic development of developing countries in the context of employment generation, entrepreneurship development, and economic diversification is significant. The World Bank estimates that 50% of global employment and 90% of global businesses are under the control of the MSME sector. Furthermore, in low- and middle-income countries, the MSME sector contributes more to GDP, i.e., 40%. The importance of MSMEs in employment generation is significant in the context of the fact that MSMEs use labour-intensive methods of production and are associated with low capital utilisation. However, this is resulting in more employment generation compared to large-scale industries [1]. Moreover, studies on developing countries have shown that MSMEs contribute to regional economic development through innovation and entrepreneurial activities [6] [18]. In developing countries, a major share of micro, small, and medium enterprises (MSMEs) is found in the unorganised or informal sector, especially in countries like India, where small household industries make up a major share of the unorganised sector.

According to the ASUSE report 2023-24, conducted by the National Sample Survey Organisation, an estimated 7.34 crore establishments of MSMEs were recorded. It has been reported that 12.84% increase in the overall establishments compared to the previous ASUSE (2022-23). An estimated total of 12.06 cr. workers are working in 2023-24, which shows an increase of 10.01% compared to the previous survey. This shows the importance of these enterprises in providing employment. Generally, there are two types of establishments. The first category is Own-Account Establishments (OAEs), which are enterprises that operate without employing any hired workers. The second category is Hired Worker Establishments (HWEs), which are enterprises that employ at least one hired worker on a fairly regular basis. The majority of these enterprises are own-account establishments, with an estimated 6.34 crore such units, according to the ASUSE 2023–24 report. Additionally, most of these enterprises are micro enterprises in nature (i.e., 99.81% of all establishments). A micro enterprise is an enterprise where the investment in plant and machinery or equipment does not exceed one crore rupees and the turnover does not exceed five crore rupees.

Enterprises in the unorganised sector face different kinds of operational and structural limitations and constraints, which affect their performance, despite their significant contribution to economic growth and employment creation. The purpose of this study is to determine the main causes of the issues enterprises, especially in manufacturing enterprises, face. In the NSSO ASUSE 2023–24 survey, enterprises reported the major difficulties encountered during the reference period. These include erratic power supply or power cuts, shortage of raw materials, lack of market connectivity due to poor road or other infrastructure, non-availability or high cost of credit, non-recovery of financial dues, non-availability of labour when needed, shortage of skilled labour, lack of technological upgradation in the production process, and other related challenges.

To analyse these issues, the study employs a logistic regression model. However, the establishments are classified into two categories: those that reported facing operational problems and those that did not. The probability

of facing such problems is examined using several explanatory variables, including type of establishment, education level of the owner, location of the establishment, social group of the owner, registration under government regulations, maintenance of accounts, year of establishment, gender of the owner, and sector of activity based on unit-level data from the NSSO ASUSE 2023–24 survey.

II. LITERATURE REVIEW

In this literature, a number of studies examine the challenges and importance of micro, small, and medium enterprises (MSMEs), particularly in developing countries, where the unorganised sector plays a major role. However, small enterprises face many problems in day-to-day operations [2][17].

Additionally, a number of studies have also explored the challenges faced by workers in the unorganised sector. They found that workers in the informal sector face many constraints, such as not having access to social security benefits. For instance, in their study, Pradeep et al.[14] assert that the worker in the unorganised sector remains vulnerable as there is a scarcity of social security and regulatory measures. Similarly, Kaushik and Trikha [12] argue that the lack of formal recognition and support structures also increases workers' vulnerability in the informal sector. In another study, Kapur and Sethy [11] assert that seasonal employment, lack of social security, contractual employment, and low levels of education and skills also affect employment in the informal economy.

The characteristics of the enterprise are also seen to affect the performance and survival of firms in the unorganised sector. Own-account enterprises with small capital are seen to dominate the informal manufacturing sector in India. It was revealed in studies that larger firms are seen to be more productive and are likely to survive compared to smaller firms[7]. Moreover, the size of the firm plays an important role in determining the enterprise growth pattern and survival[4]. The location of the enterprise is also an important factor in determining the enterprise's performance. Enterprises in rural areas are facing more difficulties in their infrastructure, such as electricity and transportation. These difficulties may affect the ability to survive and be productive[16].

Socio-economic factors of enterprise owners could also impact enterprise performance and resource access. Social networks and caste affiliations, for example, may influence access to credit markets and business opportunities in India[10]. The role of financial management practices is also important in enterprise development. Enterprises that keep their financial records in order usually have a better chance of getting institutional credit [3]. Characteristics of ownership may also affect the outcomes. Studies indicate that female entrepreneurs frequently encounter greater obstacles in obtaining financial resources and market opportunities than their male counterparts[5].

Although a considerable body of literature has examined various aspects of the informal manufacturing sector in India, relatively limited attention has been given to identifying the characteristics of enterprises that are more likely to face operational problems using recent enterprise-level datasets. The study by Mawkhiew and Thangkhiew [13] represents one of the few attempts to analyse the probability of enterprises encountering operational constraints based on their characteristics using NSSO 2015-16 data. Building on this approach, the present study conducts a similar analysis using the most recent ASUSE 2023–24 dataset to examine the factors associated with operational problems faced by enterprises in the unorganised sector.

III. DATA

The present study employs the micro-dataset of the Annual Survey of Unincorporated Sector Enterprises (ASUSE) conducted in the year 2023-24 by the National Statistics Office. This report provides detailed information on the operational and structural characteristics of unincorporated non-agricultural enterprises in the manufacturing, trade, and services sectors.

The ASUSE survey was conducted between October 2023 and September 2024 [8] [9], which covers both rural and urban areas in India, except for some isolated villages in the Andaman and Nicobar Islands.

The survey uses a multi-stage stratified sampling method. In rural areas, the First Stage Units (FSUs) are census villages, while Urban Frame Survey (UFS) blocks are FSUs in urban areas. The ultimate stage units (USUs) are the establishments themselves. For large FSUs, an intermediate stage of sampling is introduced in the form of hamlet groups in rural areas and sub-blocks in urban areas. Using this sampling framework, information has been collected through this survey from 498,024 establishments in India, which include manufacturing, trade, and other service activities. Out of this total number of establishments, 127,369 establishments fall under the manufacturing sector, which is considered in this study. Out of the total manufacturing establishments, 54,877 are in urban areas, while 72,492 are in rural areas. The ASUSE dataset provides detailed information on enterprise characteristics such as ownership type, location, registration status, education and social group of the owner, employment structure, financial indicators, and operational difficulties faced by enterprises.

IV. METHODOLOGY

In this study, we use a logistic regression model, as used by Mawkhiew & Thangkhiew [13] and Rahman[15]. Since the variable of interest is whether an enterprise faces problems or not, value 1 if the enterprise faces a problem and 0 otherwise. The logit regression model follows the cumulative distribution function to estimate probability.

$$\mathrm{P}\,(Y_i = 1/X_i) = \frac{\exp(x_i\beta_k)}{1+\exp(x_i\beta_k)}$$

Where, $P(Y_i = 1 \mid X_i)$= probability that enterprise $i$faces a problem

X_i = vector of explanatory variables

β = vector of coefficients

The logistic regression Model is:

$$\ln \frac{P_i}{(1-P_i)} = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \cdots + \beta_k X_{ki}$$

Y_i = Dependent Variable. (Problem faced by the enterprise)

X_{1i}= Sector [X_{11}=Rural X_{12}=Urban]

X_{2i}= Types [$X_{21} = HWE$ & $X_{22} = OAE$]

X_{3i}=Ownership [X_{31} = Proprietary male X_{32}= Proprietary female X_{33}= Others (Partnership, SHG, Trusts)]
X_{4i}= Social Ownership [X_{11}=ST, X_{12}=SC, X_{13}=OBC, X_{14}=General]
X_{5i} =Location [X_{51}=Within HH Premises X_{52}= Outside HH Premises]
X_6=Registration.
X_7=Account Maintained.
X_8=Contracts.
X_{9i} = Enterprises age [X_{91} = less than 6 years, X_{92}= 7 to 12 years, X_{93} = 13 to 20 years, X_{94}= 21 and more years]
X_{10i} = level of Education [X_{101} = Not literate, X_{102} = Up to Primary level, X_{101} = Up to Secondary level, X_{101} = Graduation and above]
X_{11i} = Enterprises nature [X_{111} = Perennial, X_{112} = Seasonal, X_{113} Casual]

A. Description of the Explanatory variable for the Logit regression:

Sector (X_{1i}): Enterprises based on two sectors: rural and urban; 1 for rural and 2 for urban.

Enterprise type (X_{2i}): Enterprises are classified into two types: Hired Worker Enterprises (HWE) and Own Account Enterprises (OAE). HWEs employ at least one hired worker on a regular basis, while OAEs operate without any hired workers. For the regression analysis, 1 is assigned to HWE and 2 to OAE.

Ownership (X_{3i}): Ownership of the enterprises is classified as proprietary, which is a sole owner, and partnership, which is two or more owners. The categories are coded as 1 for proprietary male, 2 for proprietary female, and 3 for partnership, including self-help groups (SHGs) and trusts.

Social group (X_{4i}): Enterprises are classified based on the social group of the owner. The categories include: 1 for ST (X_{41}), 2 for SC (X_{42}), 3 for OBCs (X_{43}), 4 for General (X_{44}).

Location (X_{5i}): The location variable indicates whether the enterprise operates within household premises (coded as 1) or outside household premises (coded as 2)

Registration (X_6): The variable takes the value 1 if the enterprise is registered and 2 otherwise.

Account maintains (X_7): This variable indicates whether the enterprise maintains accounts or not. If an enterprise maintains its account, it is equal to 1 and takes 2 if an enterprise does not maintain its account.

Contracts (X_8): The variable takes the value 1 if the enterprise operates on contracts, and 2 otherwise.

Age of Enterprise (X_{9i}): Enterprises are classified into four age categories. If the enterprise is less than or equal to 6, coded as 1, 2 if the age is between 7 and 12 years, 3 if the age is between 13 and 20 years, and if the enterprise is older than 21 years, coded as 4.

Education (X_{10i}): The education level of the enterprise owner is categorised into four groups: not literate (1), primary level (2), secondary level (3), and graduate level or above (4).

Nature (X_{11i}): By nature, enterprises are 3 types. Perennial enterprises that run throughout the years and are coded as 1, Seasonal enterprises operate in a particular season and are coded as 2. The enterprises that operate occasionally are called casual enterprises and coded as 3.

Table 1: Summary of the Dataset

Variable	Mean	Standard Deviation
Problem Faced	0.28	0.45
Sector	1.43	0.50
Types	1.76	0.43
Ownership	1.48	0.52
Social Ownership	3.04	0.78
Location	1.43	0.49
Registration	1.74	0.44
Account Maintain	1.99	0.12
Contracts	1.84	0.37
Age	2.16	1.03
Level of Education	2.55	0.73
Nature of Enterprise	1.02	0.13

(Source: Author's calculation using NSSO data)

V. RESULT

The results of logistic regression are presented in Table 2, where we analyse whether an enterprise is more or less likely to face problems based on its characteristics. The overall model is statistically significant, as indicated by the Wald chi-square statistic (χ^2 = 1324.76, p < 0.001). The results are interpreted based on the odds ratios of the logistic function. Based on the sector, it is observed that the odds ratio for urban areas is less than 1, which implies that enterprises located in urban areas are less likely to face problems than those in rural areas. This result is statistically significant. The second explanatory variable is the type of enterprise. Taking HWE as the base category, the odds ratio for OAE is less than 1. This indicates that HWEs are more

likely to face problems than OAEs, and this result is statistically significant.

Next, we consider ownership of the enterprise. Compared to proprietary male-owned enterprises, the odds ratio for proprietary female-owned enterprises is less than 1, implying that these enterprises are less likely to face problems. On the other hand, enterprises under the "others" category (including partnership, SHG, and trusts) have an odds ratio greater than 1, indicating that they are more likely to face problems than proprietary male-owned enterprises. Both results are statistically significant.

Table 2: Result of Logit regression based on problems faced by the Unorganised Manufacturing Enterprises (UMEs) during 2023-24:

Explanatory Variable	P > z	Odds ratio
Sector		
Urban	0.000	0.8713975
Rural*		
Type		
OAE	0.000	0.8364999
HWE*		
Ownership		
Proprietary Female	0.000	0.7656824
Others	0.000	1.344828
Proprietary male*		
Social Ownership		
ST	0.233	0.955854
SC	0.000	1.176347
OBC	0.000	1.151195
General*		
LOCATION		
Outside HH Premise	0.081	0.964722
Within HH Premise*		
Registration	0.000	0.8191653
Account maintained	0.000	0.6484931
Contracts	0.654	1.009021
Age of enterprise		
7 to12 year	0.005	0.9521411
13 to 20 years	0.078	1.039371
21+	0.000	1.145253
<=6years*		
Education		
Primary Level	0.306	0.9663858
Secondary level	0.019	0.9236899
Graduation & above	0.781	0.9884605
Not Literate*		
Nature		
Seasonal	0.038	1.196384
Casual	0.431	1.333727
Perennial*		
_cons	0.342	0.9206541
Log likelihood	-57444.434	
Model chi-square	1324.76	
Prob > chi2	0.000	
PseudoR2	0.0114	

(Source: Author's calculation using NSSO data)

With consideration of the social caste of the owner of enterprises, it has been observed that the odds ratio of the SC and OBC group owners is higher than 1. This indicates that the SC and OBC group owners are more prone to problems with respect to the general caste (base category). These results are statistically significant. However, enterprises operated by ST groups have an odds ratio less than 1, suggesting they face fewer problems, although this result is not statistically significant.

Enterprises operating outside household premises are slightly less likely to face problems than those operating within household premises, but this result is not statistically significant. The results also show that registered enterprises and those maintaining accounts are more likely to face problems than others, and these results are statistically significant. Contract-based enterprises are also more likely to face problems compared to non-contract enterprises, although this result is not statistically significant.

Based on the age of the enterprise, older enterprises are more likely to face problems than newer ones. Lastly, considering education level and the nature of the enterprise, the results indicate that enterprises operated by non-literate owners are more likely to face problems. Perennial enterprises are less likely to face problems compared to seasonal and casual enterprises, in terms of the nature of the enterprise.

VI. CONCLUSION

This paper examines which types of unorganised manufacturing enterprises (UMEs) are more likely to face operational or technological problems based on their characteristics, using a logit regression model. The explanatory variables include sector, type of enterprise, ownership, social group, location, registration status, account maintenance, contract status, age of the enterprise, education level, and nature of operation. As per the Annual Survey of Unincorporated Sector Enterprises (ASUSE), UMEs face several constraints, such as power supply, shortage of raw materials, lack of market connectivity due to poor roads or infrastructure, non-availability or high cost of credit, non-recovery of financial dues, shortage of labour and skilled labour, and lack of technological upgradation in the production process.

The results of the logit model provide several important observations. Though the role of the unorganised sector in creating employment in the Indian economy is significant, the sector continues to face many challenges. The results show that rural enterprises face more problems compared to urban enterprises. This could be attributed to the higher cost of credit, transportation facilities, and connectivity. In

addition, OAEs are more likely to have problems compared to HWEs. This could be attributed to the fact that OAEs are operated without hired workers, which may affect productivity and access to raw materials.

The result also reflects the existence of social inequality, as enterprises owned by SC and OBC are more prone to problems than others. It has also been observed that the registered enterprises are more prone to problems compared to unregistered ones. The exact reason for this is not explored in this study. Similarly, enterprises that maintain accounts are found to face more problems, though no clear explanation emerges from the results.

The results show that relatively newer enterprises are less likely to experience difficulties than older ones, regardless of technology or enterprise age. This may indicate that technology could help reduce enterprise difficulties. Based on these results, an improvement in the existing infrastructure in rural areas, such as road connectivity, electricity, and market access, may help in overcoming the difficulties faced by rural enterprises and promote employment generation. In addition, an increase in vocational training and education may also help in overcoming the constraints related to skills, as the enterprise may be owned by less educated entrepreneurs and may experience skill-related difficulties. Thus, an increase in education, technology, and infrastructure may help in overcoming these difficulties for the growth of the unorganised manufacturing sector.

CONFLICT OF INTEREST

The authors declared that they have no conflict of interest.

REFERENCES

[1] T. Beck and A. Demirguc-Kunt, "Small and medium-sized enterprises: Access to finance as a growth constraint," *Journal of Banking & Finance*, vol. 30, no. 11, pp. 2931–2943, 2006. Available: https://doi.org/10.1016/j.jbankfin.2006.05.009

[2] T. Beck, A. Demirguc-Kunt, and R. Levine, "SMEs, growth, and poverty: Cross-country evidence," *Journal of Economic Growth*, vol. 10, no. 3, pp. 199–229, 2005. Available: https://link.springer.com/article/10.1007/s10887-005-3533-5

[3] T. A. Bhavani and N. R. Bhanumurthy, "Financial access—measurement and determinants: A case study of unorganised manufacturing enterprises in India," *Indian Economic Review*, pp. 85–108, 2014. Available: https://www.jstor.org/stable/24583408

[4] Coad and J. P. Tamvada, "Firm growth and barriers to growth among small firms in India," *Small Business Economics*, vol. 39, no. 2, pp. 383–400, 2012. Available: https://link.springer.com/article/10.1007/s11187-011-9318-7

[5] Deshpande and S. Sharma, "Entrepreneurship or survival? Caste and gender of small business in India," *Economic and Political Weekly*, pp. 38–49, 2013. Available: https://www.jstor.org/stable/23527445

[6] E. Endris and A. Kassegn, "The role of micro, small and medium enterprises (MSMEs) to the sustainable development of sub-Saharan Africa and its challenges: A systematic review of evidence from Ethiopia," *Journal of Innovation and Entrepreneurship*, vol. 11, no. 1, p. 20, 2022. Available: https://link.springer.com/article/10.1186/s13731-022-00221-8

[7] Goldar and A. Mitra, "Small versus large manufacturing units: How efficient are they?" *Journal of the Asia Pacific Economy*, vol. 18, no. 4, pp. 634–653, 2013. Available: https://doi.org/10.1080/13547860.2013.827416

[8] Government of India, *Annual Survey of Unincorporated Sector Enterprises (ASUSE), 2023–24*. New Delhi: National Statistics Office (NSO), Ministry of Statistics and Programme Implementation, 2024. Available: https://tinyurl.com/ysv9punt

[9] International Finance Corporation, *IFC and Small and Medium Enterprises*. Washington, DC: World Bank Group, 2024. Available: https://www.ifc.org/content/dam/ifc/doc/2024/banking-on-women-who-trade-across-borders.pdf

[10] L. Iyer, T. Khanna, and A. Varshney, "Caste and entrepreneurship in India," *Economic and Political Weekly*, pp. 52–60, 2013. Available: https://www.jstor.org/stable/23391395

[11] S. Kapur and P. K. Sethy, "Working and living conditions of workers in unorganised sector—A review of literature," *Online Interdisciplinary International Research Journal*, vol. 6, no. 2, pp. 197–204, 2014. Available: https://tinyurl.com/mwwvhdh2

[12] M. M. Kaushik and M. A. Trikha, "An exploratory analysis of the challenges faced by the unorganised sector in India during pandemic Covid-19 lockdown," *Studies in Indian Place Names*, vol. 40, no. 74, pp. 2132–2141, 2020. Available: https://tinyurl.com/yu66spjc

[13] Mawkhiew and D. W. Thangkhiew, "Characteristics of enterprises more likely to face constraints in the unorganised manufacturing sector in India," *SEDME (Small Enterprises Development, Management & Extension Journal)*, vol. 50, no. 1, pp. 13–22, 2023. Available: https://doi.org/10.1177/09708464221130910

[14] P. MD, R. BK, and T. Sab, "A study on the prospects and problems of unorganised labours in India," *International Journal of Applied and Advanced Scientific Research (IJAASR)*, vol. 2, no. 1, 2017. Available: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2995345

[15] M. A. Rahman, "Household characteristics and poverty: A logistic regression analysis," *The Journal of Developing Areas*, vol. 47, no. 1, pp. 303–317, 2013. Available: https://muse.jhu.edu/pub/51/article/493795/summary

[16] R. S. Raj and K. Sen, "Finance constraints and firm transition in the informal sector: Evidence from Indian manufacturing," *Oxford Development Studies*, vol. 43, no. 1, pp. 123–143, 2015. Available: https://doi.org/10.1080/13600818.2014.972352

[17] S. Sasidharan and S. N. Rajesh Raj, "The growth barriers of informal sector enterprises: Evidence from India," *The Developing Economies*, vol. 52, no. 4, pp. 351–375, 2014. Available: https://doi.org/10.1111/deve.12057

[18] M. Zada *et al.*, "Development of local economy through the strengthening of small-medium-sized forest enterprises in KPK, Pakistan," *Sustainability*, vol. 13, no. 19, p. 10502, 2021. Available: https://doi.org/10.3390/su131910502