

Annual Turnover Performance of MSMEs in Mizoram: An Empirical Analysis of Influencing Factors

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Abstract: Micro, small and medium enterprises (MSMEs) is known as the engine of economic growth and are considered as the catalyst of economic and social development of developing countries. In India, the sector is labour intensive in nature and can be established at any place with very low capital ratio.

The micro, small and medium enterprise (MSME) sector in Mizoram is crucial in generating employment opportunities. The state recognises the importance of this sector, as evidenced by the formulation of Industrial Policies with special reference to MSMEs and the introduction of the Entrepreneurship Development Scheme, The Mizoram Entrepreneurship and Start-up Policy, by the state government to create a more supportive environment for entrepreneurship.

The quality of entrepreneurial force depends on various environmental factors. Social factors such as, family background, caste and religion, social mobility and marginality determine entrepreneurial behaviour. investigates the influence of entrepreneurs' socio-economic characteristics, educational attainment, gender, investment levels, labour employment, and working hours on enterprise turnover.

Despite the growing importance of MSMEs in the India and the northeastern region of India, empirical evidence on the determinants of enterprise turnover in Mizoram remains limited. The state's MSME sector is characterized by a predominance of micro units, and a significant concentration of activities in service sectors. By providing empirical evidence from Mizoram, the study contributes to the existing literature on MSME performance and offers insights for policymakers, development agencies, and entrepreneurs seeking to strengthen the growth and competitiveness of the MSME sector.

Highlights

- Monthly family income, education, and age significantly influence MSME annual turnover.
- Investment is the strongest determinant of annual turnover ($\beta = 0.759$, $p < 0.001$)
- Entrepreneurs with higher educational qualifications achieve significantly higher turnover levels.

- *Labour employment and longer working hours positively contribute to MSME performance and revenue generation.*

Keywords: MSMEs; Annual Turnover; Enterprise Performance; Investment; Labour Employment; Socio-economic Factors; Educational Attainment.

Introduction

Mizoram, one of the northeastern states of India is an underdeveloped and one of the most industrially backward states across the country. The industrial backwardness of Mizoram can be traced to its geographical isolation, inadequate infrastructure, policy gaps, financial constraints, and socio-economic limitations.

The introduction of government schemes and policies stimulate the growth of industrial enterprises, particularly Micro, Small and Medium enterprises, through handholding, while fostering sustainable development and an improved business environment.

As on April 2024, 6.02 crore MSMEs, with an employment of 23.96 crore are registered on Udyam Registration Portal and Udyam Assist Platform (UAP). The Union Ministry of Micro, Small, and Medium Enterprises has received an allocation of Rs. 23,168 crores in FY26 Union Budget, reflecting a 4.6% increase compared to the FY25 Budget.

In Mizoram, during 2023-24, a total of 9,535 new MSME units registered in 2023-24 brought the cumulative number of registrations to 30,617 units, and 50,237 new jobs created, contributing to a cumulative total of 1,74,812 employed individuals. The total investment during the year reached ₹78,117.20 lakh, with cumulative investments amounting to ₹2,89,360.86 lakh. The service sector dominated with 7,799 registered units, while the manufacturing sector accounted for 1,734 units. Micro enterprises formed the majority, with 9,460 units, whereas small and medium enterprises remained limited to 68 and 5 units, respectively.

The present study examines the determinants of annual turnover among MSMEs in Mizoram. Specifically, it investigates the influence of entrepreneurs' socio-economic characteristics, educational attainment, gender, investment levels, labour employment, and working hours on enterprise turnover.

Review of Literature

Entrepreneurship is basically concerned with creating wealth through production of goods and services. This results in a process of upward change whereby the real per capita income of a country rises overtime or in other words economic development takes place. (*Verma, JK 2015*) If there is increase in investment in the economy, the demand for capital goods rises. If output can expand in this sector, there would be an expansion in the income generation and in demand for goods and services. *Chaudhary, et.al (2019)*

Kumar, JS & Vese, K (2024) stated that MSMEs play a significant role in the local economy of the northeastern state of Nagaland, helping to create more employments, generate income, and reduce poverty. The historical evolution of trade and commerce in Mizoram can be traced back to the colonial period, when the establishment of trade marts and the introduction of British administration significantly enhanced commercial activities. **(Mate H. 2014)**. Structural constraints such as difficult geographical terrain, remoteness, inadequate infrastructure, and limited technological advancement have hindered the growth of industries **(Lalhunthara & Lalthakima, 2019)**. Despite facing challenges, women entrepreneurs significantly contribute to Mizoram's economic development. These challenges underscore the need for targeted support mechanisms, with government initiatives playing a pivotal role in addressing them. **(Devi, CN 2024)**

Access to finance remains a major challenge in Mizoram, as only a small proportion of entrepreneurs rely on formal banking institutions for start-up capital, with many depending on personal savings or informal sources **(Lalhunthara, 2018)**. Furthermore, the lack of awareness regarding government schemes and support mechanisms limits the ability of entrepreneurs to fully benefit from policy initiatives **(Lalduhsaka et al., 2024)**.

MSMEs help to accelerate the pace of rural industrialization while also assisting with poverty reduction and job creation. With the aid of Atmanirbhar Bharat MSMEs have become the bulwark of our economy and contribute to the country's development in the days to come **(Shetty MO, Ganesh BS 2022)**. A study conducted for MSME sector in Odisha's Sundargarh district stated that, dependent variable (annual income) is significantly correlated with gender, age, education, firm type, organisational structure, location and block, but not with the type of sector (manufacturing and service) and product manufactured. **(Pradhan K & Nayak Y, 2025)** The socio-economic factors of MSMEs in Chennai were analyzed in terms of their gender, age, educational qualification, previous work experience, religion, ownership pattern-legal status, business type-occupational categories, family type and family size. Among these, five of these explanatory variables found to have significantly contributed to the dependent variable (performance) and the significant variables are return on educational qualification, previous experience, religion, family type and the ownership pattern of the respondents. **(Khan FR, 2014)**

Operational Definition

Under the original MSME Act 2006, classification was based solely on the investment in plant, machinery, or equipment. However, the Ministry of Micro, Small and Medium Enterprises (MoMSME) implemented a revised and unified definition of MSMEs effective from July 1, 2020. The revised definition of MSME, which came into effect on 1 April 2025, classifies MSMEs based on a combination of investment in plant and machinery or equipment and annual turnover

Enterprise Category	Investment Limit	Turnover Limit
Micro Enterprise	₹2.5 crore	₹10 crore

Small Enterprise	₹25 crore	₹100 crore
Medium Enterprise	₹125 crore	₹500 crore

The revised criteria of investment and turnover limits for classification benefit the MSMEs on various grounds, viz., eligibility to Government Schemes and Subsidies, priority in Lending, tax and Compliance Benefits, protection from Delayed Payment, participate in Government Tenders, TReDS Platform for Faster Payments, etc.

Objectives of the Study

The specific objectives for this study are as follows:

1. To examine the influence of socio-economic characteristics on annual turnover.
2. To assess the effect of investment and labour-related factors on annual turnover.
3. To investigate differences in annual turnover across demographic and educational groups.

Hypothesis of the Study

For the present study the following hypothesis are considered.

1. Socio-economic characteristics have significant influence on annual turnover.
2. Investment and labour-related factors have significant influence on annual turnover.
3. Annual turnover does differ significantly across gender and educational groups.

Methodology

Research Design

The study adopted both descriptive and inferential statistical techniques to analyse the relationship between entrepreneurs' socio-economic characteristics, enterprise-related factors, and annual turnover.

Data Source and Collection

The study is based on primary data collected from 440 MSME entrepreneurs across Mizoram selecting 40 each from all eleven districts through a structured interview questionnaire. Information was gathered on entrepreneurs' socio-economic characteristics, enterprise profile, investment, labour employment, working hours, and annual turnover.

Variables of the Study

Dependent Variable:

- Annual Turnover Size

Independent variables:

- Socio-economic characteristics: age, gender, education, marital status, community, other occupation, and monthly family income.
- Enterprise characteristics: amount of initial investment, amount of investment, labour employment, and daily working hours.

Analytical Framework

The data were analysed using parametric and non-parametric statistical techniques.

1. **Multiple Regression Analysis** was used to examine the influence of socio-economic and enterprise-related factors on annual turnover. Regression coefficients, standardized beta values, t-statistics, and significance levels were employed to find the significance level.
2. **Mann–Whitney U Test** was applied to determine whether annual turnover differed significantly between male and female entrepreneurs.
3. **Kruskal–Wallis H Test** was employed to examine differences in annual turnover across educational categories and working-hour groups.

Model Specification

To examine the influence of socio-economic factors on annual turnover, the following multiple regression model was estimated:

$$Y = \beta_0 + \beta_1(\text{Age}) + \beta_2(\text{Education}) + \beta_3(\text{Other_Occupation}) + \beta_4(\text{Monthly_Family_Income}) + \beta_5(\text{Community}) + \beta_6(\text{Marital_Status}) + \varepsilon$$

where:

Y = Annual Turnover Size;

β_0 = Intercept

$\beta_1 \dots \beta_6$ = Regression coefficients ε = Error term

Level of Significance

All hypotheses were tested at the 5 per cent level of significance ($p < 0.05$). Results with p-values less than 0.05 were considered statistically significant.

Results

Socio-economic Factors and Turnover:

A multiple regression analysis was conducted to examine the influence of age, education, other occupation, monthly family income, community, and marital status on the annual turnover size of MSMEs. The result shows that Education and Monthly Family Income have a positive and statistically significant influence on annual turnover size. Monthly Family Income is the strongest predictor of annual turnover ($B = 0.661$, $\beta = 0.565$, $p < 0.001$) while Education exhibits a positive coefficient ($B = 0.216$, $\beta = 0.118$, $p = 0.003$), suggesting that entrepreneurs with a higher level of family income and higher educational attainment tend to achieve greater turnover. Age group has a positive and significant coefficient ($B = 0.117$, $\beta = 0.086$, $p = 0.040$). Other Occupation ($B = 0.051$, $\beta = 0.071$), Community ($B = -0.830$, $p = 0.449$), and Marital Status ($B = 0.029$, $p = 0.742$) do not have a statistically significant effect on annual turnover.

Gender-Based Differences in Annual Turnover size:

The Mann–Whitney U test was conducted to examine whether annual turnover differs between male and female entrepreneurs. The results can be shown in Table 1

Table 1: Mann-Whitney U Test

Ranks

	Gender	N	Mean Rank	Sum of Ranks
Annual_Turnover_Size	Male	214	235.41	50378.50
	Female	226	206.38	46641.50

	Total	440		
Test Statistics^a				
	Annual_Turnover_Size			
Mann-Whitney U	20990.500			
Z	-2.466			
Asymp. Sig. (2-tailed)	.014			

a. Grouping Variable: Gender

From table 1, the mean rank of male entrepreneurs (235.41) is higher than that of female entrepreneurs (206.38), indicating that male-owned enterprises tend to earn higher annual turnover compared to female-owned enterprises. The test statistics shows that there is statistically significant difference in annual turnover between the two groups, i.e., male and female. ($U = 20,990.500$, $Z = -2.466$, $p = 0.014$). Since the p-value (0.014) is less than the 5 percent significance level ($p < 0.05$).

It can be stated that Gender has a significant influence on annual turnover among MSMEs in Mizoram. Although female entrepreneurs slightly outnumber male entrepreneurs in the sample, male entrepreneurs, on average, achieve higher turnover levels.

Educational Attainment and Annual Turnover Size

A Kruskal–Wallis test was conducted to determine whether annual turnover differs across educational levels. The results reveal a statistically significant difference in annual turnover among the various educational categories ($\chi^2 = 35.660$, $df = 5$, $p < 0.001$). Entrepreneurs with higher and technical educational qualifications exhibited higher mean ranks of annual turnover than those with lower educational attainment, suggesting that education positively influences enterprise performance.

Table 2: Kruskal- Wallis Test

Ranks	Education	N	Mean Rank
Annual_Turnover_Size	Illiterate	1	281.00
	School	252	190.26
	Graduate	138	262.28
	Post graduate	39	253.54
	Technical Diploma	9	269.89
	Technical Degree	1	281.00
	Total	440	

Test Statistics^{a,b}

	Annual_Turnover_Size
Kruskal-Wallis H	35.660
df	5
Asymp. Sig.	.000

a. Kruskal Wallis Test

b. Grouping Variable: Education

The mean rank values show notable variations across educational groups. Entrepreneurs with Technical Diploma (Mean Rank = 269.89), Technical Degree (Mean Rank = 281.00), Graduate (Mean Rank = 262.28), and Postgraduate (Mean Rank = 253.54) qualifications generally exhibit higher turnover ranks than those with School-level education (Mean Rank = 190.26).

Impact of Investment on Annual Turnover Size

The regression model is: $Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + u_i$

where,

Y_i = Annual Turnover Size of the i^{th}

X_{1i} = Amount of Initial Investment

X_{2i} = Amount of Investment

u_i = stochastic error term

The estimated model is specified as:

$$\hat{Y}_i = 0.618 + 0.029X_{1i} + 0.737X_{2i}$$

The standardized form of the regression equation is expressed as:

$$Z_Y = 0.028Z_{X1} + 0.759Z_{X2}$$

The statistical significance of the coefficients is tested using the t-statistic:

For Amount of Initial Investment:

$$t = 0.650, \quad p = 0.516 > 0.05 \Rightarrow \beta_2 = 0$$

For Amount of Investment:

$$t = 17.590, \quad p < 0.001 \Rightarrow \beta_2 > 0$$

$$\frac{\partial Y}{\partial X_1} = 0.029, \quad \frac{\partial Y}{\partial X_2} = 0.737$$

The results indicate that Amount of Investment (X_2) has a strong and statistically significant positive effect on annual turnover. The coefficient value ($B = 0.737$) implies that, holding other factors constant, a one-unit increase in the total investment leads to an increase of 0.737 units in annual turnover. The corresponding t-value (17.590) and p-value ($p < 0.001$) confirm that this effect is highly significant at the 1% level.

In contrast, Amount of Initial Investment (X_1) does not have a statistically significant effect on annual turnover. Although the coefficient ($B = 0.029$) suggests a positive relationship, the t-value (0.650) and p-value ($p = 0.516 > 0.05$) indicate that this effect is not statistically different from zero.

The beta coefficient for total investment ($\beta = 0.759$) is substantially higher than that of initial investment ($\beta = 0.028$), indicating that total investment is the most influential predictor of annual turnover in the model.

Labour Employment and Turnover

By taking the regression coefficients showing that both Capital Investment and Amount of Labour are independent variables while Annual Turnover Size as the predictor or dependent variable.

The regression model is:

$$\hat{Y}_i = 0.342 + 0.682X_{1i} + 0.227X_{2i}$$

The standardized form of the regression equation is expressed as:

$$Z_Y = 0.703Z_{X1} + 0.186Z_{X2}$$

$$\frac{\partial Y}{\partial X_1} = 0.682, \quad \frac{\partial Y}{\partial X_2} = 0.227$$

The statistical significance of the coefficients is tested using the t-statistic:

For capital investment:

$$t = \frac{0.682}{0.0031} = 22.220, \quad p < 0.001 \quad \Rightarrow \beta_1 > 0$$

For Amount of Labour:

$$t = \frac{0.227}{0.039} = 5.877, \quad p < 0.001 \quad \Rightarrow \beta_2 > 0$$

The regression coefficients show that both the Capital Investment and Number of labours are statistically significant predictors of Annual Turnover Size ($p < 0.001$ for both). The level of capital investment has a stronger effect ($\beta = 0.703$), indicating that businesses with higher investment tend to generate significantly more revenue. The amount of labour, although significant, has a smaller impact ($\beta = 0.186$).

The coefficient for Capital Investment is 0.682 stated that for every one-unit increase in investment, the annual turnover increases by 0.682 units. while each additional worker contributes to an increase of 0.227 units in turnover, controlling for investment. Therefore, capital investment and labour employment has a positive and significant influence on annual turnover.

Labour Working Hours and Turnover

The Kruskal–Wallis test was conducted to examine whether annual turnover differs significantly across enterprises with different daily working hours.

Table 3: Kruskal- Wallis Test

Ranks			
	Working_hours	N	Mean Rank
Annual_Turnover_Size	More than 12 hours	18	217.00
	8 to 12 hours	207	229.68
	6 to 8 hours	189	220.35
	Less than 6 hours	26	150.90
	Total	440	

Test Statistics^{a,b}

Annual_Turnover_Size	
Kruskal-Wallis H	9.875
df	3
Asymp. Sig.	.020

a. Kruskal Wallis Test

b. Grouping Variable: Working_hours

The mean rank values reveal that enterprises operating 8 to 12 hours per day have the highest annual turnover rank (Mean Rank = 229.68). The Kruskal–Wallis test result indicates a statistically significant difference in annual turnover among enterprises operating under different working-hour categories ($H = 9.875$, $df = 3$, $p = 0.020$). Since the p-value is less than 0.05, it can be stated that longer working hours are generally associated with higher turnover levels. The null hypothesis that annual turnover is the same across all working-hour groups is rejected.

Findings of the Study

1. The socio-economic characteristics of MSME entrepreneurs significantly influence annual turnover. Entrepreneurs with higher family income, higher educational qualifications, and age tend to achieve higher annual turnover. However, community, marital status, and engagement in other occupations do not have a significant effect on turnover. The hypothesis ‘Socio-economic characteristics have significant influence on annual turnover’ is therefore, partially accepted.

2. Total investment has positive influence on annual turnover, whereas initial investment does not significantly affect turnover. Enterprises employing a larger workforce able to earn higher annual turnover. Daily working hours also significantly influence annual turnover. Enterprises operating for longer duration acquire a higher turnover level than enterprises operating for fewer hours.

From the regression analysis the hypothesis – ‘Investment and labour-related factors have significant influence on annual turnover’ is **accepted**.

3. There is significant difference in annual turnover between male and female entrepreneurs. Male-owned enterprises reported higher turnover levels than female-owned enterprises. Educational attainment has a significant association with annual turnover. Entrepreneurs possessing graduate, postgraduate, and technical qualifications recorded higher turnover ranks compared to those with lower educational levels.

The Mann–Whitney U test and Kruskal–Wallis test revealed significant differences in annual turnover across educational categories and gender. ($p < 0.001$). Therefore, the hypothesis ‘Annual turnover differs significantly across gender and educational groups’ is **accepted**.

Conclusion

MSMEs play a significant role in employment generation and income creation. Among various variables, Investment is the most influential determinant of annual turnover among MSMEs in Mizoram. Socio-economic factors such as family income, education, age, gender, labour employment, and working hours also contribute significantly to enterprise.

Since investment emerged as the most influential determinant of turnover, facilitating access to capital can significantly enhance enterprise performance. Entrepreneurship development programmes should place greater emphasis on education, skill development, and technical training. Special support measures should be introduced to strengthen women owned enterprises, which may reduce the turnover gap between male and female. Strengthening investment capacity, improving entrepreneurial skills, and creating an enabling business

environment are essential for enhancing the performance and sustainability of MSMEs in Mizoram.

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