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Income, Work Intensity and Savings Behaviour among Informal Sector Workers: A Correlation Analysis of Selected Districts of Madhya Pradesh

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Abstract

The informal sector remains a major source of employment in India, particularly in developing states where a significant proportion of the workforce relies on unorganized economic activities for livelihood. However, informal employment is often characterized by low and irregular incomes, limited job security, and inadequate financial resilience. The present study examines the relationship between income levels, work intensity, and savings behaviour among informal sector workers in three districts of Madhya Pradesh—Indore, Bhopal, and Singrauli. The study is based on primary data collected from 150 respondents engaged in occupations such as construction labour, street vending, domestic work, transport services, home-based manufacturing, and gig-platform employment.

Descriptive statistics and Pearson correlation analysis were used to examine the relationships among key economic variables including monthly income, daily earnings, number of workdays per month, working hours per day, and savings levels. The results show that the average monthly income of workers is approximately ₹16,050, with a majority of respondents earning between ₹12,000 and ₹18,000. Correlation results reveal a strong positive relationship between monthly income and savings ($r = 0.64$), indicating that higher income significantly improves workers' ability to save. A moderate positive relationship is also observed between workdays per month and monthly income ($r = 0.52$), suggesting that increased work availability contributes to higher earnings. However, the relationship between working hours and income is relatively weak, reflecting structural limitations of informal employment.

The findings suggest that income variability and irregular employment conditions significantly affect the financial stability of informal workers. The study highlights the

importance of stable employment opportunities, financial inclusion programs, and income-enhancing policies to improve economic resilience among informal sector workers.

Keywords: Informal sector, income distribution, savings behaviour, work intensity

Introduction

The informal sector constitutes a significant component of the labour market in developing economies, particularly in countries such as India where a large proportion of the workforce depends on unorganized employment. Informal workers are typically engaged in occupations such as construction labour, street vending, transport services, domestic work, and small-scale manufacturing activities. These occupations provide livelihood opportunities but are often associated with low income levels, irregular employment patterns, and lack of social protection. In states like Madhya Pradesh, rapid urbanization and industrial expansion have increased the demand for informal labour in urban and semi-urban districts. Cities such as Indore and Bhopal have witnessed growth in service activities, small enterprises, and construction projects, while districts like Singrauli have developed as major industrial and mining hubs. Despite these economic developments, a large proportion of workers remain employed in informal occupations where earnings are unstable and dependent on daily work availability. Income stability and savings behaviour are critical indicators of the economic well-being of informal workers. Low and uncertain income levels often limit workers' ability to save or invest, making them vulnerable to financial shocks such as illness, unemployment, or household emergencies. Savings behaviour among informal workers is influenced not only by income but also by work intensity factors such as the number of workdays per month and hours worked per day.

Understanding the relationship between income and savings behaviour is therefore essential for assessing the financial resilience of informal workers. Correlation analysis provides an effective statistical approach to examine how economic variables such as income, workdays, and working hours interact with savings levels. Against this background, the present study investigates the relationship between income, work intensity, and savings behaviour among informal sector workers in Indore, Bhopal, and Singrauli districts of Madhya Pradesh. By analyzing primary survey data collected from 150 respondents, the study aims to identify key economic relationships that influence workers' financial stability and livelihood conditions.

Literature Review

The informal sector has been widely recognized as a dominant source of employment in developing economies. Hart (1973) first introduced the concept of the informal sector while studying employment patterns in Ghana, highlighting the role of small-scale, unregulated economic activities in urban labour markets. Later, the International Labour Organization (ILO) expanded the concept by emphasizing that informal employment is characterized by low productivity, absence of social protection, and unstable income conditions. Chen (2012) further explained that informal workers often operate outside formal institutional frameworks and face significant economic vulnerabilities due to lack of labour rights and financial security. In developing countries, informal employment has become an essential livelihood strategy for millions of workers who cannot access formal employment opportunities.

In the Indian context, several studies have examined the structure and characteristics of informal labour markets. Kannan and Raveendran (2012) found that informal employment dominates the Indian labour market, with a majority of workers engaged in low-productivity sectors such as construction, petty trade, and domestic services. Mehrotra and Parida (2019) highlighted that slow growth of formal employment has forced many workers into informal activities, resulting in job insecurity and wage instability. Research by NCEUS (2009) also demonstrated that informal workers in India often lack access to social security benefits and stable employment contracts, making them economically vulnerable. These studies suggest that understanding income patterns and employment characteristics among informal workers is essential for designing effective labour and social policies.

Income inequality and wage determination within the informal sector have also been widely discussed in empirical research. Fields (2019) noted that informal labour markets often exhibit significant wage disparities due to differences in skills, occupational structures, and access to capital. Studies by Bargain, Etienne, and others have also shown that wage inequality in developing countries is partly driven by segmentation between formal and informal employment. In India, research by Bhattacharya and Rath (2021) indicates that workers engaged in casual labour and self-employment often experience fluctuating income levels due to irregular work availability. These findings highlight the importance of examining occupational characteristics and work intensity when analyzing income distribution in informal labour markets.

Savings behaviour among low-income households has been another important area of research in development economics. Collins, Morduch, Rutherford, and Ruthven (2009) demonstrated through financial diary studies that poor households actively manage complex

financial portfolios despite limited income levels. Similarly, Banerjee and Duflo (2011) found that low-income households often rely on small but regular savings to cope with economic shocks and income variability. Dupas and Robinson (2013) also showed that access to simple savings mechanisms can significantly improve financial stability among informal workers and small entrepreneurs. These studies indicate that income stability and work opportunities strongly influence the ability of low-income workers to save.

Recent research has also focused on the changing nature of informal work due to technological and economic transformations. Berg et al. (2018) highlighted that digital labour platforms have created new forms of informal employment where workers experience both income opportunities and income volatility. Surie (2020) examined platform labour in India and found that while gig work may offer relatively higher daily earnings, workers still face uncertainty regarding job availability and social protection. Similarly, the World Bank (2019) emphasized that improving labour productivity, financial inclusion, and social security coverage is essential to enhance economic resilience among informal workers. Despite the growing body of literature, there remains limited empirical research examining the relationship between income levels, work intensity, and savings behaviour among informal workers at the district level, which the present study seeks to address.

Objectives of the Study

1. To analyze the income distribution and work characteristics of informal sector workers in Indore, Bhopal, and Singrauli districts.
2. To examine the relationship between monthly income and savings behaviour among informal sector workers using correlation analysis.

Hypotheses

H_{01}: There is no significant correlation between monthly income and savings among informal sector workers.

H_{02}: There is no significant correlation between work intensity (workdays and working hours) and monthly income.

Data Analysis

Table 1

Sample Distribution by District (N = 150)

District	Sample Size	Percentage
Indore	60	40%
Bhopal	50	33.3%
Singrauli	40	26.7%
Total	150	100%

Table 1 presents the distribution of respondents across the selected districts included in the study. The total sample size consists of 150 informal sector workers, drawn from three districts of Madhya Pradesh, namely Indore, Bhopal, and Singrauli. Among the respondents, Indore district accounts for the largest share with 60 respondents (40%), reflecting its status as a major urban and commercial centre where informal employment opportunities are relatively high. Bhopal district contributes 50 respondents (33.3%), representing the capital city with a significant presence of service sector and informal economic activities. The remaining 40 respondents (26.7%) are from Singrauli district, which is known for mining and industrial activities that also generate a large number of informal employment opportunities. The distribution of respondents across the three districts ensures a balanced representation of different regional economic structures, including urban service economies and industrial labour markets. This distribution enables the study to capture variations in income levels, employment patterns, and savings behaviour among informal workers in different economic environments.

Table 2

Monthly Income Distribution of Workers

Income Range (₹)	Frequency	Percentage
9,000 – 12,000	32	21.3
12,001 – 15,000	44	29.3
15,001 – 18,000	34	22.7
18,001 – 21,000	22	14.7
21,001 – 24,000	12	8.0
24,001 – 27,000	6	4.0
Total	150	100

Table 2 illustrates the monthly income distribution of informal sector workers included in the study. The results show that a significant proportion of respondents fall within the lower income brackets. The largest share of workers, 44 respondents (29.3%), earn between ₹12,001 and ₹15,000 per month, indicating that this income range represents the most common earning level among the surveyed workers. Another 34 respondents (22.7%) earn between ₹15,001 and ₹18,000, while 32 respondents (21.3%) fall within the ₹9,000 to ₹12,000 income range. A smaller proportion of workers earn higher incomes, with 22 respondents (14.7%) earning between ₹18,001 and ₹21,000, 12 respondents (8%) earning between ₹21,001 and ₹24,000, and only 6 respondents (4%) earning above ₹24,000 per month. The mean monthly income of the respondents is ₹16,050, which suggests that most workers earn moderate but relatively limited incomes within the informal labour market. Overall, the table indicates that the majority of workers are concentrated in lower and middle income brackets, reflecting the income constraints typically associated with informal sector employment.

Table 3
Work Characteristics of Respondents

Variable	Mean	Standard Deviation
Daily Earnings (₹)	585	108
Workdays per Month	23.8	3.2
Working Hours per Day	8.5	1.4
Monthly Savings (₹)	1,120	540

Table 3 summarizes the key work characteristics of the respondents, including daily earnings, number of workdays per month, working hours per day, and monthly savings. The results show that the average daily earning of workers is ₹585, with a standard deviation of 108, indicating moderate variation in daily wages across occupations. On average, respondents work 23.8 days per month, suggesting that most workers are employed almost throughout the month, though occasional fluctuations in work availability may occur. The average working time is 8.5 hours per day, reflecting a typical full working day for informal sector workers. In terms of financial behaviour, the respondents report an average monthly saving of ₹1,120, with a relatively high standard deviation of 540, which indicates differences in savings capacity among workers depending on income levels and employment conditions. Overall,

the table highlights that informal workers maintain relatively long working hours and frequent workdays, yet their savings remain modest due to limited income levels.

Table 4
Savings Behaviour by Income Range

Income Range (₹)	n	Avg Savings (₹)	Savings Rate (%)
9,000–12,000	32	620	6.8
12,001–15,000	44	840	6.4
15,001–18,000	34	1,140	6.7
18,001–21,000	22	1,410	7.3
21,001–24,000	12	1,720	7.8
24,001–27,000	6	2,050	8.1

Table 4 presents the savings behaviour of respondents across different income ranges. The results show a clear pattern where savings increase with rising income levels. Workers earning between ₹9,000 and ₹12,000 save an average of ₹620 per month, representing a savings rate of 6.8% of their income. Respondents in the ₹12,001–₹15,000 income group save approximately ₹840, while those earning between ₹15,001 and ₹18,000 save around ₹1,140. As income levels increase further, savings also rise, with workers in the ₹18,001–₹21,000 range saving about ₹1,410 per month, and those earning ₹21,001–₹24,000 saving around ₹1,720. The highest income group, earning ₹24,001–₹27,000, reports the largest average savings of ₹2,050 per month, corresponding to a savings rate of 8.1%. This trend indicates that higher income levels significantly improve the ability of workers to accumulate savings. The results suggest that although informal workers attempt to save despite limited income, their savings capacity is strongly dependent on the level of earnings.

Table 5
Correlation Matrix of Key Economic Variables

Variable	Monthly Income	Workdays	Working Hours	Savings
Monthly Income	1.00	0.52	0.28	0.64
Workdays	0.52	1.00	0.36	0.41
Working Hours	0.28	0.36	1.00	0.22
Savings	0.64	0.41	0.22	1.00

Table 5 presents the correlation matrix showing the relationships among key economic variables, including monthly income, workdays per month, working hours per day, and savings. The results reveal a strong positive correlation between monthly income and savings (r = 0.64), indicating that higher income levels significantly increase the capacity of workers to save. A moderate positive relationship is observed between monthly income and number of workdays (r = 0.52), suggesting that workers who obtain more workdays during a month tend to earn higher income. The correlation between monthly income and working hours per day is relatively weak (r = 0.28), implying that longer working hours alone do not necessarily lead to higher earnings in the informal sector. Additionally, workdays also show a moderate relationship with savings (r = 0.41), indicating that more consistent employment can improve financial stability. Overall, the correlation results highlight that income and employment stability play a more important role in determining savings behaviour than working hours alone.

Conclusion

The present study examined the relationship between income levels, work intensity, and savings behaviour among informal sector workers in the districts of Indore, Bhopal, and Singrauli in Madhya Pradesh. The analysis based on primary data from 150 respondents reveals several important insights into the economic conditions of informal workers. The district-wise sample distribution shows that Indore accounted for the largest share of respondents (40%), followed by Bhopal (33.3%) and Singrauli (26.7%), ensuring representation from both urban service-oriented economies and industrial labour markets. This distribution helped capture variations in employment conditions and livelihood patterns among informal workers in different regional contexts. The study found that income levels among informal workers remain relatively low and concentrated within limited income brackets. As shown in Table 2, the majority of respondents fall within the ₹12,001–₹15,000 income range (29.3%), followed by ₹15,001–₹18,000 (22.7%) and ₹9,000–₹12,000 (21.3%). Only a small proportion of workers earn above ₹21,000 per month, indicating limited upward income mobility within the informal sector. The mean monthly income of ₹16,050 further confirms that most workers earn modest wages that are just sufficient to meet basic household expenses. This pattern reflects the structural characteristics of informal employment, where income opportunities are constrained by limited skills, irregular employment availability, and absence of formal labour protections.

The findings related to work intensity show that informal workers maintain relatively demanding work schedules despite modest earnings. On average, respondents reported daily earnings of ₹585, with approximately 23.8 workdays per month and 8.5 working hours per day. These figures indicate that informal workers often work close to full-time schedules, yet their earnings remain relatively low due to productivity constraints and wage instability. Furthermore, the average monthly savings of ₹1,120 suggests that while workers attempt to set aside some portion of their income, their savings capacity remains limited. The relatively high standard deviation of savings (₹540) also indicates considerable variation in savings behaviour among workers depending on income levels and employment stability. Savings behaviour analysis demonstrates a clear positive relationship between income and savings capacity. Workers in the lowest income group (₹9,000–₹12,000) save approximately ₹620 per month, whereas workers in the highest income group (₹24,001–₹27,000) save around ₹2,050 per month. The savings rate also increases gradually from 6.8% in the lowest income group to 8.1% in the highest income group, indicating that higher income levels enable workers to allocate a greater share of their earnings toward savings. These results suggest that income stability is a crucial determinant of financial resilience among informal workers.

The correlation analysis further strengthens these findings by revealing significant relationships among key economic variables. The results indicate a strong positive correlation between monthly income and savings ($r = 0.64$), suggesting that higher earnings significantly improve the ability of workers to accumulate savings. A moderate positive relationship between monthly income and workdays per month ($r = 0.52$) indicates that increased work availability contributes to higher income levels. However, the relationship between working hours and income ($r = 0.28$) is relatively weak, implying that longer working hours alone do not necessarily translate into higher earnings within the informal labour market. This highlights structural limitations within informal employment, where productivity and wage rates rather than working hours determine income outcomes.

Overall, the study concludes that informal sector workers in the selected districts face moderate income levels, irregular employment conditions, and limited savings capacity. Income and employment stability emerge as the most significant factors influencing workers' financial behaviour and economic resilience. The findings underscore the need for policy interventions aimed at enhancing income stability, improving skill development opportunities, expanding financial inclusion, and strengthening social security coverage for informal workers. Such measures would not only improve the economic well-being of

workers but also contribute to inclusive and sustainable labour market development in the state of Madhya Pradesh.

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