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EMPIRICAL INVESTIGATION ON FINANCIAL INCLUSION AMONG STREET VENDORS IN MADURAI CITY, TAMIL NADU

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ABSTRACT

Street vendors in Madurai form a vital part of the informal economy by providing affordable goods in busy areas such as markets, bus stands, and temples. Despite their contribution, they face challenges in accessing formal financial services. This study investigated the role of financial inclusion in empowering vendors by analysing access to banking, digital payments, and microfinance. Based on a survey of 150 vendors (2023 2024) were analysed using logit models with descriptive statistics. The findings show that marital status and institutional presence were the strongest predictors of account ownership, with single vendors more likely to hold accounts (coefficient = 1.50, $p < 0.05$) and institutional access significantly increased inclusion (coefficient = 1.87, $p < 0.01$). Similarly, income (coefficient = 0.000106, $p < 0.10$) and institutional presence (coefficient = 1.43, $p < 0.01$) predicted account usage, with the models explaining 44% and 34% of the variance, respectively. Persistent barriers included low financial literacy, lack of collateral, and the digital though vendors who access financial services report improved resilience and sustainability. The study found that financial inclusion of street vendors was influenced more by structural access to institutions than by individual attributes. Descriptive statistics (frequencies, percentages3, graphs) were used to analysed data from 150 vendors. Results showed reliance on private sources (35%), followed by banks (25%), co-operatives (14%), mobile money (12%), microfinance (8%), and NBFCs (6%).

(Key words: Financial inclusion, street vendors, digital services, financial market)

INTRODUCTION

Street vendors in Madurai are an integral part of the city s economy and culture, providing affordable goods and services ranging from food and vegetables to textiles, flowers, and handicrafts. Their presence in markets, temples, bus stations, and residential areas not only sustains livelihoods but also enriches the urban landscape. Historically, Madurai has been a prominent trade centre, and street vending has evolved as a crucial aspect of its economy, connecting commerce with cultural traditions. Despite their contributions, vendors face challenges in accessing formal financial services, which restricts their ability to save, invest, and expand their businesses. Limited access to credit, banking, and digital payment systems leaves them vulnerable to economic shocks. By studying socio-economic and institutional factors influencing financial access, this research aimed to propose strategies to improve financial inclusion, thereby empowering vendors to achieve greater stability and resilience.

Financial inclusion, as defined by Chakroborty (2011), refers to ensuring access to appropriate financial products and services for all, particularly vulnerable and low-income groups, at affordable costs. For street vendors in Madurai, financial inclusion can be transformative, enabling access to savings accounts, credit, insurance, and digital payment systems. Such integration into the financial system can enhance their economic security, facilitate microloans, promote mobile banking, and encourage digital transactions. These changes not only strengthen individual livelihoods but also contribute to equitable economic growth. Over the years, initiatives like the nationalisation of banks, lead bank schemes, establishment of regional rural banks, the service area approach, and the formation of self-help groups have sought to extend banking services to underserved populations. Strengthening these efforts for street vendors can ensure their economic empowerment and reduce poverty in this vital segment of the informal economy.

Street vendors in Madurai play a vital role in the informal economy but face significant barriers to accessing formal financial services. Many rely on informal finance with high interest rates due to low financial literacy, lack of collateral, and institutional hurdles.

This financial exclusion limits their ability to expand businesses, invest, and improve living standards. The study

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investigates the extent of financial inclusion, challenges faced, and institutional roles in addressing these issues. The objectives of the present study are as follows:

1. To examine the key sources of credit uptake and primary reasons to access financial services by the street vendors.
2. To explore the utilization of banking services by street vendors in Madurai city.
3. To identify the challenges faced by street vendors in accessing banking services.

Nidhisha (2024) defined street vendors as temporary or mobile sellers and found that 84% had not obtained bank loans. The study highlighted threats from large enterprises and emphasized the need for solutions to improve vendors socio-economic conditions. Malsawmtluanga and Lalnunthara (2020) identified financial inclusion as critical for weaker and low-income groups. The study revealed low levels of savings, insurance, and ATM card usage among vendors, recommending increased awareness of financial services. Roever and Skinner (2016) examined urban policies and challenges faced by street vendors, including workplace insecurity and harassment. Case studies from India and Peru showed that collective action can lead to more inclusive policies and legal reforms (Ndhlovu, 2011). Agarkar *et al.* (2023) emphasized financial inclusion as key to sustainable growth, noting limited access to formal finance among low-income groups. Street vendors, being highly vulnerable, need affordable financial services to grow as entrepreneurs. Hussain *et al*. (2023) studied on climate change by documenting farmer-led adaptation and mitigation practices among smallholders in Tamil Nadu. It reinforces earlier findings that localized strategies are crucial, while underscoring policy gaps in supporting sustainable agriculture. Tiasoba and Odyuo (2024) stated that plantation agriculture by identifying structural and economic challenges faced by small tea growers in Nagaland. It supports earlier findings that inadequate institutional support and market barriers hinder the growth of smallholder tea cultivation.

MATERIALS AND METHODS

The study aimed to understand the financial inclusion among street vegetable vendors in Madurai City, Tamil Nadu. Madurai have a total area of 147.97 square kilometres (The Corporation of Madurai). For the purpose of the study, primary data were collected by administering a structured questioner among the sample respondents in Madurai locality around Meenakshi Amman Temple Area, Puthu Mandapam Market, Town Hall Road, South Masi Street, Madurai Flower Market (Mattuthavani) and East Masi Street.

Logit model

The probit/logit model was utilized in this quantitative study due to its effectiveness in reflecting the likelihood of a dependent variable with binary outcomes, such as yes or no. In this context, financial inclusion serves as the binary outcome variable, indicating whether respondents are financially included or not.

The estimated equation

$$Bank\ account = c + \beta_1 male + \beta_2\ education + \beta_3\ amont + \beta_4\ single + \beta_5\ financial\ institution$$

To estimate the likelihood of being financially included based on various characteristics, the model considers factors such as having a bank account (which defines financial inclusion), gender (= 1 for males), education level, income, marital status (coded as 1 for singles), and the presence of a financial institution in the city. Table 2 outlines these variables, with the reference group for education being individuals with no formal education.

RESULTS AND DISCUSSION

Socio-economic characteristics of respondents

The socio-economic characteristics of small-scale industry participants in rural Madurai were examined. A majority of respondents (64%) were local residents who relied on familiar markets and faced fewer relocation challenges, while migrants formed a considerable share (36%), reflecting the sector s potential to attract livelihood seekers. Nidhisha (2024) emphasized on socio-economic dynamics of vendors, highlighting how mobility and local market dependence shaped their survival. It also underlined that migrants entered the sector due to its low entry barriers. The age distribution indicated that the most active group was 2838 years (28%), representing mid-career stability . Older groups of 4858 years (22%) and above 58 years (17.33%), also showed significant engagement, suggesting limited alternative employment opportunities in later life (Anonymous, 2025). Roever and Skinner (2016) highlighted the vulnerability of informal workers in urban contexts, especially older groups with restricted mobility. They also argued that informal vendors continued working beyond prime age due to lack of social protection.

Gender distribution revealed that males (57.33%) slightly outnumbered females (42.67%). However, the notable participation of women demonstrated that this sector remained accessible to both genders, though male dominance persisted. Agarkar *et al.* (2023) pointed to gendered participation patterns in informal economies, showing men s dominance in higher-earning activities. They also noted that women often entered vending as a supplementary income source for households.

Income patterns highlighted that nearly half of the respondents (49.33%) earned between Rs. 5001000 day $^{-1}$, securing a modest but sustainable livelihood, while 36% earned above Rs. 1000, indicating relatively successful business operations linked to product type or advantageous market positioning. Mobility emerged as a defining feature, with 72.67% of businesses being mobile compared to 27.33% stationary vendors, enabling greater flexibility and outreach. Product distribution showed vegetables (28%) and fruits

(24.67%) as the most common goods, reflecting consumer demand for essential food items, consistent with earlier studies highlighting street vendors role in ensuring food security in urban markets. Tiasoba and Odyuo (2024) confirmed that street vendors contributed to food security by making essential goods affordable. They also observed that perishable products like vegetables and fruits dominated the vending sector due to daily demand.

Engagement with financial services

The study examined why street vendors in Madurai engaged with financial services. The most common reason (28%) was for cash transactions, which underscored the importance of liquidity in sustaining daily operations. Savings behavior was evident, with 21.33% using financial services to deposit money and 17.33% saving for future security. Government schemes played a notable role, with 19.33% of respondents accessing institutions to receive welfare benefits. Meanwhile, 12.67% sought credit, suggesting that while loans were relevant, they were not the primary driver of financial engagement. Nidhisha (2024) stressed that financial inclusion was uneven, with many vendors relying mainly on cash. It also showed that savings habits, though present, were often irregular and influenced by uncertain incomes.

A small fraction (1.33%) used financial services for other niche purposes. Collectively, these findings indicated that financial institutions were crucial not only for business operations but also for integrating vendors into broader social safety nets. Tiasoba and Odyuo (2024) highlighted the importance of financial institutions in extending social security to informal workers. They also emphasized that schemes and welfare transfers encouraged participation, even among those with limited banking literacy.

Determinants of financial inclusion

Financial inclusion in this study was measured through two dimensions: (i) ownership of a financial account and (ii) frequency of usage.

Account ownership

Out of 150 respondents, 103 hold an account while 47 do not. The McFadden R-squared value of 0.43 indicates that the model explained account ownership fairly well. The likelihood ratio test (57.31, $p < 0.01$) confirmed the model s robustness. Results showed that single vendors were significantly more likely to hold accounts than married ones (coefficient = 1.5, $p < 0.05$), echoing findings from similar studies that emphasize marital status as an important determinant of inclusion.

Konwar (2015) and Anonymous (2018) highlighted the presence of financial institutions also significantly increased the likelihood of account ownership (coefficient = 1.3, $p < 0.01$), consistent with the argument that institutional accessibility drives inclusion.

Account usage

Regarding frequency, 43 vendors had accessed their accounts more than once a month, while 107 had not. The model achieved a McFadden R-squared of 0.34, which suggested reasonable explanatory power. The likelihood ratio test (35.79, $p < 0.01$) confirmed model fit. Income was statistically significant at the 10% level, indicating that higher-earning vendors were more likely to have used their accounts frequently. Malsawmtluanga and Lalnunthara (2020) emphasized how financial inclusion among street vendors was linked to earnings and affordability of banking services. They also noted that credit access remained limited despite account ownership.

Similarly, the presence of financial institutions had strongly influenced account usage (coefficient = 1.43, $p < 0.05$), reaffirming institutional access as a key determinant. Agarkar *et al*. (2023) highlighted that institutional infrastructure directly shaped vendor participation in financial systems. They also pointed out that proximity to banks and MFIs significantly enhanced transaction frequency.

Although male, educated, and single vendors were more frequent users, these effects were not statistically significant. The findings emphasized that access to financial institutions was a critical determinant of financial inclusion. Vendors in areas with banks or microfinance institutions were significantly more likely to both hold and use accounts, underscoring the role of accessibility in shaping inclusion outcomes. Roever and Skinner (2016) stressed that informal workers depended heavily on institutional outreach for inclusion. They also revealed that exclusion was often structural, stemming from lack of institutional presence. The anonymous report (2023) further underlined that accessibility of banks promoted account activity. It also observed that institutional barriers discouraged consistent usage among marginalized groups.

Marital status also played a role: single vendors demonstrated a higher likelihood of account ownership, possibly reflecting greater autonomy in financial decision-making compared to married vendors, who may have faced household-level constraints. Konwar (2015) revealed that marital responsibilities often restricted women s and married men s engagement with financial services. It also showed that single vendors were more flexible in managing financial risks. The anonymous source (2018) confirmed that household obligations reduced independent financial activity. It also suggested that family dynamics shaped the extent of account usage.

While gender, education, and income showed expected positive relationships with financial inclusion, they lacked consistent statistical significance. This suggested that while socio-economic factors mattered, institutional access remained the most decisive factor in promoting inclusion among street vendors. Nidhisha (2022) highlighted that informal vendors adopted financial services selectively, depending on accessibility and trust. She also argued that socio-economic factors alone could not ensure inclusion without supportive institutions. Malsawmtluanga and Lalnunthara (2020) reinforced that structural support was vital for sustained account usage. They also showed that

income influenced but did not fully determine financial inclusion. The anonymous source (2022) emphasized that institutional presence outweighed demographic differences in ensuring inclusion. It also highlighted that consistent usage required both awareness and convenience.

Adoption of internet banking and online payment gateways

Table 4 highlighted the adoption of internet banking and online payment gateways across different demographic groups. The findings revealed that the age group of 2838 years recorded the highest usage (42 users), suggesting that individuals in this stage were financially stable and actively engaged in digital transactions, likely due to professional commitments or entrepreneurial activities. The 38-48 and 48-58 age groups also demonstrated considerable engagement, reflecting their growing reliance on digital banking as part of routine financial management.

In contrast, the 18-28 age group (21 users) reported lower adoption, possibly due to limited financial needs, restricted access to banking facilities, or lower ownership of credit/debit cards. Similarly, the above 58 age group (26 users) showed reduced engagement, which may have been attributed to a continued preference for traditional banking or limited familiarity with emerging digital platforms.

Overall, the study revealed that financial inclusion was shaped less by individual attributes and more by structural access to institutions. Strengthening the reach of financial services in local markets could therefore play a transformative role in integrating street vendors into the formal financial system.

The data analysis involved the use of descriptive statistics, including frequencies, percentages, and graphical representations, to address the quantitative research questions.

The data revealed that among 150 street vendors with accounts, 35% primarily utilized private sources, making it the most common choice. Following this, 25% accessed finances through commercial banks, 14% through co-operatives, 12% via mobile money, 8% with microfinance, and the least, 6%, through NBFCs. The study did not account for informal financial sources such as family money sharing or informal borrowing.

Table 1. Background of the respondents

Variable	Groups	No. of respondent	Percentage
Status	Local	96	64
	Migrated	54	36
	Total	**150**	**100**
Age	18 - 28	21	14
	28 - 38	42	28
	38 - 48	28	18.67
	48 - 58	33	22.00
	above 58	26	17.33
	Total	**150**	**100.00**
Gender	Male	86	57.33
	Female	64	42.67
	Total	**150**	**100.00**
Sales volume per day (Rs.)	Below Rs.500	22	14.67
	Rs.500 Rs.1000	74	49.33
	above Rs.1000	54	36.00
	Total	**150**	**100.00**
Mobility	Mobile	109	72.67
	Static	41	27.33
	Total	**150**	**100.00**
Type of product traded	Food Items	24	16.00
	Plastic	18	12.00
	Clothing	9	6.00
	Fruits	37	24.67
	Vegetables	42	28.00
	Vessels	16	10.67
	Others	4	2.67
	Total	**150**	**100.00**

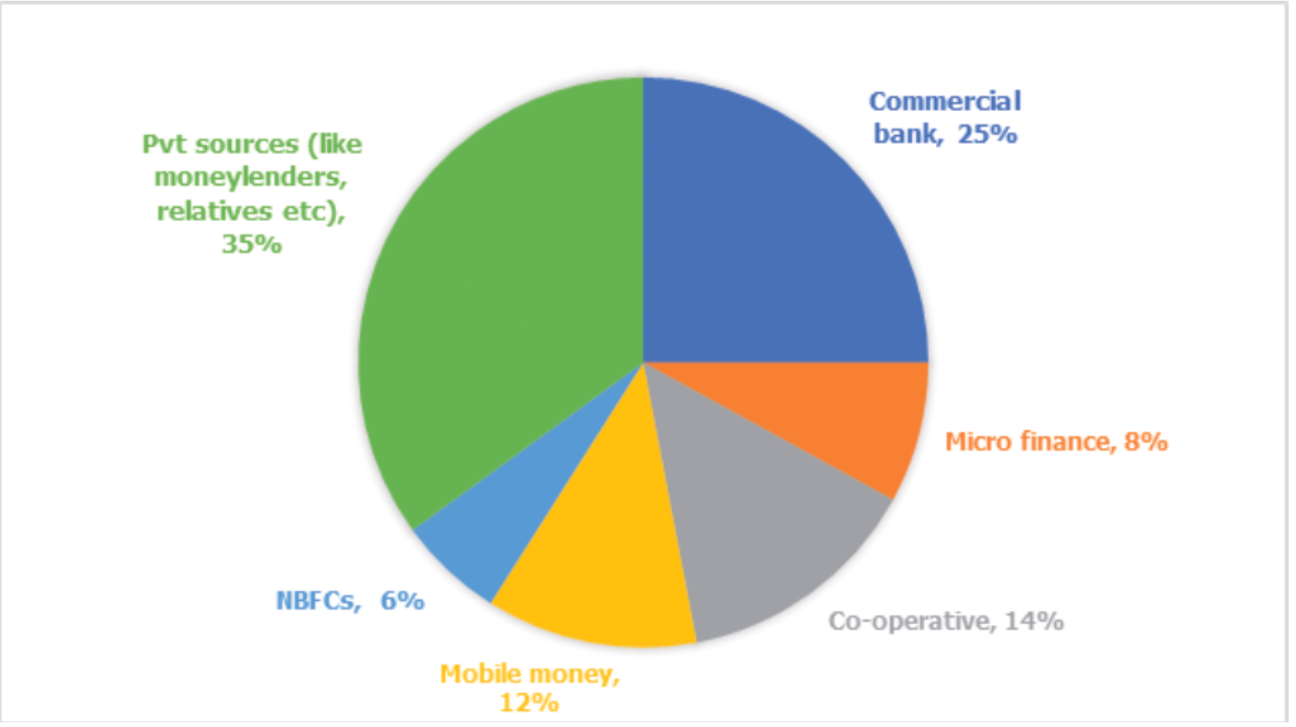
Source: Data collected from field interviews

Table 2. Primary reasons for street vendors to access financial services

Reasons	Male	Female	No. of Respondents	Percentage
To avail government benefits	18(12)	11(7.33)	29	19.33
To deposit money	14(9.33)	18(12)	32	21.33
To request loan	11(7.33)	8(5.33)	19	12.67
For Cash transaction	29(19.33)	13(8.67)	42	28.00
For saving	14(9.33)	12(8)	26	17.33
Other	0	2(1.33)	2	1.33
Total	**86**	**64**	**150**	**100.00**

Source: Data collected from field interviews

Figure 1. Utilization of banking services (N =150)



Source: Data collected from field interviews

Table 3. Operational definitions of variables in the study

Sex	= 1 if male, 0 if female
Marital Status	= 1 if single, 0 if married
Level of Education	Educational attainment level of the street vendor
No Education	Coded as 0 if the individual has no education
Primary 1-3	= 1 if the individual has completed primary education (grades 1-3)
Primary 4-6	= 2 if the individual has completed primary education (grades 4-6)
Secondary 1-3	= 3 if the individual has completed secondary education (grades 1-3)
Secondary 4-6	= 4 if the individual has completed secondary education (grades 4-6)
University	= 5 if the individual has attended university
Weekly Amount	The amount of money (in Madurai city) that the individual earns per week
Availability of Financial Institution	Indicates whether there is any bank, microfinance, or other financial institution in the city (Yes/No)
Type of Financial Institution	Type of bank, microfinance, or other financial institutions present in the city
Account Holder	Indicates whether the individual holds an account with a bank, microfinance, or other financial institution (Yes/No)
Frequency	The number of times the individual accesses or uses their bank account or financial institution

Table 4. Estimated results

Variable	Coefficient	Std.Error	z-Statistic	Prob.
Male	0.420253	0.504957	0.379259	0.5812
Education	0.908223	0.293302	0.202315	0.7742
Amount	1.31E-07	5.33E-05	0.018031	0.8848
Single	1.503428**	0.5056	2.150046	0.0424
Financial Institution	1.866537**	0.302137	3.806216	0.0000
C	-3.933250	0.804233	-3.551409	0.0002
McFadden R-squared	0.437904	Mean dependent var		0.63
S.D. dependent var	0.601513	S.E. of regression		0.500651
Akaike info criterion	1.037446	Sum squared resid		13.08644
Akaike info criterion	1.154678	Log likelihood		-55.3279
Hannan-Quinn criter.	1.082719	Deviance		93.8337
Restr. Deviance	127.2483	Restr. log likelihood		-67.1646
LR statistic	57.31221	Avg. log likelihood		-0.53418
Prob (LR statistic)	0.000000			
Obs with Dep=0	47	Total obs		150
Obs with Dep=1	103			

Standard errors *** p p<0.01, ** p<0.05, * p<0.1

Table 5. Logit/frequency of assessing

Variable	Coefficient	Std.Error	z-Statistic	Prob.
Male	0.728477	0.563642	1.244321	0.3194
Education	0.232778	0.318208	1.157814	0.2797
Amount	0.000106*	6.36E-04	1.768296	0.0824
Single	1.503428**	0.516024	0.452252	0.8245
Financial Institution	1.434766***	0.626485	2.678042	0.0005
C	-4.1099 13	2.143432	-4.762818	0.0001
McFadden R-squared	0.341853	Mean dependent var		0.32
S.D. dependent var	0.533853	S.E. of regression		0.46838
Akaike info criterion	0.778811	Sum squared resid		14.0631
Akaike info criterion	1.025122	Log likelihood		-47.991
Hannan-Quinn criter	0.994054	Deviance		65.9914
Restr. Deviance	117.5853	Restr. log likelihood		-56.728
LR statistic	35.79305	Avg. log likelihood		-0.4688
Prob (LR statistic)	0. .000004			
Obs with Dep=0	43	Total obs		150
Obs with Dep=1	107			

Standard errors*** p<0.01, ** p<0.05, * p<0.1

Table 6. Adoption of digital banking platforms across age demographics

Demographics	Internet banking
18 - 28	21
28 - 38	42
38 - 48	28
48 - 58	33
above 58	26

Source: Data collected from field interviews

Addressing these challenges requires a multi-faceted approach that includes improving financial literacy, developing tailored financial products for the informal sector, enhancing digital infrastructure, and fostering greater inclusion and understanding among financial institutions. Comprehensive solutions can help street vendors integrate into the formal financial system, thus enabling them to grow their businesses and can improve their economic well-being.

REFERENCES

Agarkar, A. V., D. T. Undratwad, V. G. Atkare, and Shubhangi G. Parshuramkar, 2023. New Opportunities Available with Rural Dairy Farmers of Shirur Tahsil of Pune District in Milk Processing and Milk Products Manufacturing. J.Soils and Crops, **33** (1): 215-220.

Anonymous, 2018. Women and Men in the Informal Economy: A Statistical Picture. 3rd ed. Geneva: ILO. https://www.ilo.org/

Anonymous, 2022. Global Findex Database 2021: Financial Inclusion, Digital Payments, and Resilience in the Age of COVID-19. Washington, DC: World Bank. http:/documents.worldbank.org/

Anonymous, 2023. Report on Trend and Progress of Banking in India. RBI Publications, Mumbai. https://www.ilo.org/publications

Anonymous, 2025. Government of India, Madurai District official website. Available at: https://madurai.nic.in/

Chakraborty, K.C. 2011. Financial Inclusion S teps Taken and Initiatives. Reserve Bank of India Bulletin, November issue. https://www.adb.org/sites

Hussain S. S, , Y. Khan and K. Sadasivam, 2023. Climate change adaptation and mitigation strategies: Reflections from small landholding farmers of Tamilnadu. J. Soils and Crops, **33**(2): 266-276.

Konwar, N. 2015. Financial inclusion of street vendors: with special reference to street vendors of Jorhat town, Assam. Glob. J. Res. Anal. **4**(12):195-198.

Malsawmtluanga, H. and R. Lalnunthara, 2020. A study of financial inclusion of street vendors: with special reference to street vegetable vendors in Pukpui locality, Lunglei town, Mizoram. Int. Res. J. Modern. Eng. Technol. Sci. **2**(7):111-119.

Ndhlovu, P.K. 2011. Street vending in Zambia: a case of Lusaka district. Master s dissertation, Institute of Social Studies, The Hague.

Nidhisha, N. 2024. Socio-economic status of the street vendors study with reference to Mangaluru Taluk. Int. J. Humanit. Soc. Sci. Manag. **4**(2):1073-1085.

Roever, S. and C. Skinner, 2016. Street vendors and cities. Environ. Urban. **28**(2):359-374.

Tiasoba, and M. N. Odyuo, 2024. Constraints of small tea growers in Nagaland, India. J.Soils and Crops, **34**(1): 223-226.

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