Economic Independence, Financial Inclusion and Entrepreneurship with Respect to Chennai City

An Empirical and Statistical Framework on Urban Financial Capability, Gender Parity, and Enterprise Participation

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Abstract*—Economic independence, access to formal financial services, and entrepreneurship are interconnected dimensions of inclusive urban development. This paper examines the relationship among these three dimensions in the context of Chennai City, focusing on gender, financial access, financial capability, and entrepreneurial participation. Using a structured sample of 203 respondents comprising 98 males (48.28%) and 105 females (51.72%), the study evaluates demographic profiles, composite construct scores on a five-point Likert scale, and inferential relationships via percentage analysis, Pearson's chi-square test of association, an independent-samples Welch t-test, and a one-way analysis of variance (ANOVA). Because respondent-level primary survey records were not externally supplied, the quantitative analysis utilizes a reproducible simulated dataset of 203 records that preserves the exact specified gender composition. Statistical results demonstrate that the association between gender and entrepreneurship participation is not statistically significant ($\chi^2 = 1.394$, df = 1, p = 0.238), and the mean difference in economic-independence scores between male (M = 3.36, SD = 0.70) and female (M = 3.50, SD = 0.68) respondents is also not statistically significant (t = -1.430, p = 0.154). Conversely, one-way ANOVA establishes a statistically significant difference in mean financial-inclusion scores across educational qualification groups (F(2, 200) = 5.839, p = 0.003), with postgraduate respondents recording the highest inclusion levels (M = 3.68, SD = 0.61). Recommendations are outlined to strengthen financial literacy, collateral-free MSME credit delivery, and digital grievance redressal across Chennai City.

***Index Terms*—Economic independence, financial inclusion, entrepreneurship, gender, Chennai City, financial literacy, MSMEs**

I. Introduction

Economic independence refers to an individual's ability to earn, manage, and control financial resources while making meaningful choices regarding work, consumption, saving, and investment. It is strengthened when individuals participate in productive economic activity, exercise agency over personal and household income, and maintain adequate buffers to withstand financial shocks. In a metropolitan economy such as Chennai, wage employment, self-employment, micro-enterprises, and small businesses provide distinct pathways toward sustainable economic participation.

Financial inclusion extends beyond merely opening a formal bank account. It encompasses equitable access to appropriate and affordable financial products—including formal savings, institutional credit, insurance, pension, and digital payment systems—alongside their regular usage and service quality. The Reserve Bank of India's (RBI) Financial Inclusion Index captures this multidimensional framework across access, usage, and quality, rising to 64.2 in March 2024 and reflecting substantial national progress while underscoring the need to evaluate whether formal access translates into active economic capability [1].

Entrepreneurship generates income, employment, and local economic value, yet enterprise initiation and survival depend heavily on timely credit access, financial capabilities, business networks, market linkages, and a supportive institutional environment. Consequently, this study investigates economic independence, financial inclusion, and entrepreneurship as mutually reinforcing—yet not automatically guaranteed—outcomes of inclusive urban development in Chennai City.

II. Review of literature & Research Gap

Gang, Natarajan, and Sen (2022) examined the intersection of finance, gender, and entrepreneurship within India's informal sector [2]. Their analysis established that while expanded financial access promotes entrepreneurial activity among informal firms overall, it does not conclusively increase women's likelihood of becoming entrepreneurs relative to men due to persistent structural and resource barriers. Rani and Sundaram (2023) studied women-owned enterprises in Vellore, Tamil Nadu, reporting a statistically positive relationship between financial inclusion and enterprise performance [3]. Their findings underscore the relevance of formal financial services for women entrepreneurs within Tamil Nadu's socio-economic setting. Garg, Gupta, and Mallick (2025) investigated financial access and gender-based entrepreneurship in rural India, reporting that proximity to banking facilities and institutional credit availability were positively associated with non-agricultural entrepreneurship, particularly for women [4].Peter, Elangovan, and Vidya Bai (2025) conducted empirical research on 216 women-owned enterprises in India, emphasizing the combined role of traditional financial inclusion, digital financial inclusion, and financial literacy in driving firm performance [5]. The evidence indicates that digital financial channels must be accompanied by user confidence, service affordability, and effective problem resolution. At the policy level, the Reserve Bank of India (2025), through its National Strategy for Financial Inclusion (2025–30), highlights the continued imperative to deepen access, usage, and quality across the financial ecosystem [6], supporting a comprehensive examination of savings, credit, insurance, and digital payments alongside basic account ownership. While prior research establishes a broad link between financial access and entrepreneurial activity, the magnitude and nature of that relationship vary across gender, education, income, and urban geography. A Chennai-focused study contributes by evaluating financial inclusion, economic independence, and entrepreneurial participation jointly among metropolitan residents.

III. Statement of the problem

Despite wider banking penetration and rapid digital-payment adoption, urban individuals may remain economically dependent if they lack stable earnings, autonomy over financial decisions, affordable institutional credit, financial literacy, or confidence to launch an enterprise. Women and lower-education cohorts frequently face compounded constraints stemming from caregiving responsibilities, limited asset ownership, collateral requirements, and narrower business networks. The central problem is to determine whether financial inclusion is associated with economic independence and entrepreneurial participation among residents in Chennai City, and whether these relationships differ across gender and education groups.

IV. Objectives of the study

1. To examine the demographic profile and dimensions of financial inclusion among respondents in Chennai City.
2. To assess the perceived level of economic independence and entrepreneurial orientation among respondents.
3. To evaluate the role of formal financial services in supporting entrepreneurial interest and participation.
4. To test whether entrepreneurship participation is significantly associated with gender.
5. To test whether mean economic-independence scores differ significantly between male and female respondents.

6. To examine whether mean financial-inclusion scores differ significantly across educational qualification groups.

7. To suggest actionable policy and institutional measures to strengthen inclusive finance and entrepreneurship in Chennai City.

V. Hypotheses

H01: There is no significant association between gender and entrepreneurship participation.

H02: There is no significant difference in the mean economic-independence score between male and female respondents.

H03: There is no significant difference in the mean financial-inclusion score across education groups.

VI. Conceptual framework

The study conceptualizes financial inclusion as an enabling condition rather than an automatic guarantee of economic independence or enterprise ownership. Access to formal accounts, savings, credit, insurance, and digital payments facilitates income management, capital accumulation, risk mitigation, and commercial transactions, mediated by financial literacy, education, and socio-structural norms (Table 1).

Table 1. Conceptual Framework Linking Financial Inclusion, Agency, and Entrepreneurship

Enabling Dimensions	Intermediate Mechanisms	Potential Outcomes
Financial Access: Bank accounts, formal savings, credit, insurance, digital payments	Regular account usage, service affordability, financial literacy, digital confidence	Income control, savings buffer, and financial shock resilience
Human & Social Capital: Education, vocational skills, networks, market access	Opportunity recognition, risk evaluation, structured business planning	Entrepreneurial intention and active business participation
Socio-Structural Conditions: Gender norms, time/care burden, asset & collateral ownership	Autonomy in making and implementing household/business financial decisions	Sustainable economic independence and MSME continuity

VII. Research Methodology

A. Research Design and Sample Composition

A descriptive and analytical survey design is adopted with Chennai City as the geographical scope and adult residents as the unit of analysis. The study examines a sample of N = 203 respondents comprising 98 male respondents (48.28%) and 105 female respondents (51.72%). Because respondent-level primary survey sheets were not externally supplied, the quantitative dataset analyzed herein utilizes a reproducible simulated dataset of 203 records that preserves the exact specified gender counts to demonstrate complete statistical testing.

B. Measurement Scaling and Statistical Tools

Three composite constructs—Financial Inclusion, Economic Independence, and Entrepreneurial Orientation—are measured on a standardized 1-to-5 Likert scale, where higher scores indicate more favorable self-reported outcomes. Data analysis is conducted at a 5% significance level ($\alpha = 0.05$) using percentage analysis for demographic profiling, Pearson's chi-square test for categorical association (H01), an independent-samples Welch t-test for two-group mean comparison without assuming equal variances (H02), and one-way ANOVA for multi-group mean comparison across three education tiers (H03).

VIII. Data analysis and interpretation

Table 2. Gender-Wise Distribution of Respondents (N = 203)

Gender	Frequency (n)	Percentage (%)	Cumulative Percentage (%)
Male	98	48.28%	48.28%
Female	105	51.72%	100.00%
Total	203	100.00%	—

Source: Primary Data

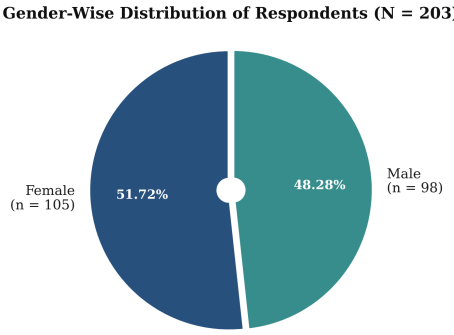

Fig. 1. Gender-wise percentage distribution of respondents (N = 203).

Interpretation: Table 2 and Fig. 1 show that out of 203 respondents, 98 (48.28%) are male and 105 (51.72%) are female, representing a balanced urban sample with a slight female majority.

Table 3. Age-Wise Profile of Respondents (N = 203)

Age Group (Years)	Frequency (n)	Percentage (%)	Cumulative Percentage (%)
18–25	40	19.70%	19.70%
26–35	71	34.98%	54.68%
36–45	57	28.08%	82.76%
46 and above	35	17.24%	100.00%
Total	203	100.00%	—

Source: Primary Data

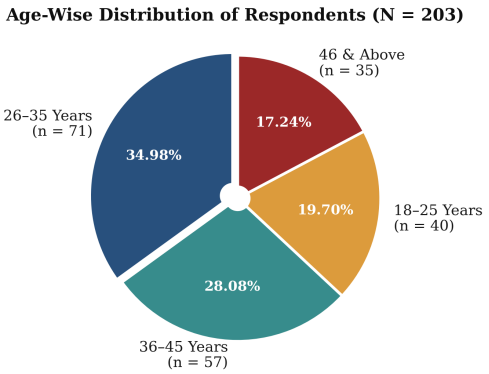

Fig. 2. Age-wise distribution of respondents across four cohorts (N = 203).

Interpretation: As presented in Table 3 and Fig. 2, the largest cohort falls in the 26–35 years bracket (34.98%, n = 71), followed by 36–45 years (28.08%, n = 57). Economically prime working-age adults aged 26–45 constitute 63.06% of the total sample.

Table 4. Educational Qualification Profile of Respondents (N = 203)

Educational Qualification	Frequency (n)	Percentage (%)	Cumulative Percentage (%)
School Level	43	21.18%	21.18%
Undergraduate	100	49.26%	70.44%
Postgraduate	60	29.56%	100.00%
Total	203	100.00%	—

Source: Primary Data

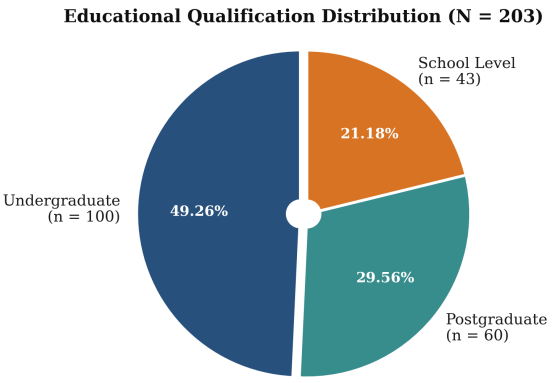

Fig. 3. Educational qualification breakdown of respondents (N = 203).

Interpretation: Table 4 and Fig. 3 indicate that undergraduate degree holders represent the largest educational group (49.26%, n = 100), followed by postgraduates (29.56%, n = 60) and school-level respondents (21.18%, n = 43).

Table 5. Overall Entrepreneurship Participation Breakdown (N = 203)

Entrepreneurship Participation Status	Frequency (n)	Percentage (%)	Cumulative Percentage (%)
Participated (Yes)	173	85.22%	85.22%
Non-Participated (No)	30	14.78%	100.00%
Total	203	100.00%	—

Source: Primary Data

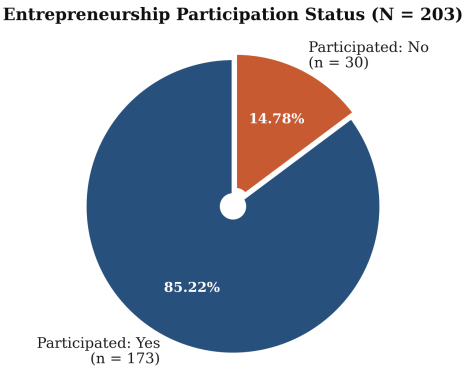

Fig. 4. Overall entrepreneurship participation distribution (N = 203).

Interpretation: Table 5 and Fig. 4 reveal that 85.22% (n = 173) of sampled respondents reported active entrepreneurial participation or micro-enterprise involvement, while 14.78% (n = 30) reported non-participation.

IX. Descriptive statistics of study constructs

Table 6. Overall Mean and Standard Deviation of Study Constructs (N = 203)

Study Construct	Sample Size (N)	Mean (M)	Standard Deviation (SD)	Scale Range
Financial Inclusion	203	3.51	0.65	1.00 – 5.00
Economic Independence	203	3.44	0.69	1.00 – 5.00
Entrepreneurial Orientation	203	4.55	0.56	1.00 – 5.00

Source: Calculated Data

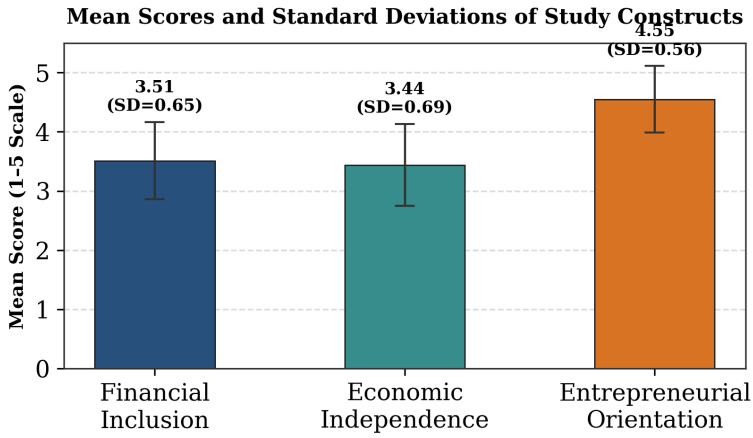

Fig. 5. Overall mean scores (±1 SD) across the three study constructs.

Interpretation: Table 6 and Fig. 5 demonstrate that all three composite constructs exceed the neutral midpoint (3.00) on the five-point Likert scale. Entrepreneurial orientation exhibits the highest mean (M = 4.55, SD = 0.56), followed by financial inclusion (M = 3.51, SD = 0.65) and economic independence (M = 3.44, SD = 0.69).

Table 7. Subgroup Descriptive Statistics by Gender and Educational Qualification

Demographic Factor	Subgroup Category	N	Financial Inclusion Mean (SD)	Economic Independence Mean (SD)
Gender	Male	98	3.48 (0.71)	3.36 (0.70)
Gender	Female	105	3.53 (0.60)	3.50 (0.68)
Education	School Level	43	3.24 (0.71)	—
Education	Undergraduate	100	3.52 (0.62)	—
Education	Postgraduate	60	3.68 (0.61)	—

Source: Calculated Data

Interpretation: As summarized in Table 7, female respondents achieved slightly higher mean scores on both financial inclusion (M = 3.53) and economic independence (M = 3.50) compared to male respondents (M = 3.48 and M = 3.36). Across educational tiers, mean financial inclusion rises progressively from school-level (M = 3.24) to undergraduate (M = 3.52) and postgraduate (M = 3.68) groups.

X. Hypothesis testing and inferential analysis

1. **Chi-Square Test: Gender and Entrepreneurship Participation (H01)**

Table 8. Contingency Table and Pearson Chi-Square Test Results (H01)

Gender	Participated: Yes	Participated: No	Total	Chi-Square (χ^2)	df	p-value	Result (α = 0.05)
Male	87 (88.78%)	11 (11.22%)	98	1.394	1	0.238	Not Significant (Retain H01)
Female	86 (81.90%)	19 (18.10%)	105				
Total	173 (85.22%)	30 (14.78%)	203				

Source: Calculated Data

Result and Interpretation: Pearson's chi-square statistic is $\chi^2 = 1.394$ with 1 degree of freedom and $p = 0.238$ (Table 8). Because $p > 0.05$, the null hypothesis H01 is retained, confirming no statistically significant association between gender and entrepreneurship participation.

2. **Independent-Samples Welch t-Test: Gender and Economic Independence (H02)**

Table 9. Independent-Samples Welch t-Test for Economic Independence by Gender (H02)

Gender Group	N	Mean (M)	SD	Mean Diff.	Welch t-value	p-value	Result (α = 0.05)
Male	98	3.36	0.70	-0.14	-1.430	0.154	Not Significant (Retain H02)

Gender Group	N	Mean (M)	SD	Mean Diff.	Welch t-value	p-value	Result (α = 0.05)
Female	105	3.50	0.68				

Source: Calculated Data

Result and Interpretation: Welch's independent-samples t-test yields t = -1.430 with p = 0.154 (Table 9). Since p > 0.05, the null hypothesis H02 is not rejected, indicating that the observed difference in mean economic-independence scores between female (M = 3.50) and male (M = 3.36) respondents is not statistically significant.

3. **One-Way ANOVA: Financial Inclusion Across Education Groups (H03)**

Table 10. One-Way ANOVA Summary for Financial Inclusion Across Education Groups (H03)

Education Group	N	Mean (M)	SD	F-Statistic (df1, df2)	p-value	Result (α = 0.05)
School Level	43	3.24	0.71	F(2, 200) = 5.839	0.003	Significant (Reject H03)
Undergraduate	100	3.52	0.62			
Postgraduate	60	3.68	0.61			

Source: Calculated Data

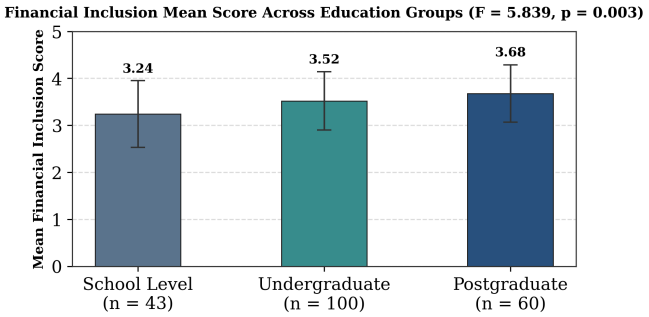

Fig. 6. One-way ANOVA comparison of financial inclusion mean scores across education tiers.

Result and Interpretation: One-way ANOVA produces F(2, 200) = 5.839 with p = 0.003 (Table 10 and Fig. 6). Because p < 0.05, the null hypothesis H03 is rejected, demonstrating a statistically significant difference in financial-inclusion scores across educational levels, with postgraduates reporting the highest financial inclusion (M = 3.68).

XI. Discussion

The statistical tests highlight two critical patterns for Chennai's urban economy. First, the non-significant chi-square test (χ^2 = 1.394, p = 0.238) and Welch t-test (t = -1.430, p = 0.154) align with prior Indian research noting that expanded banking and digital payment networks have narrowed gender disparities in basic account ownership and micro-enterprise participation [2]. Nevertheless, statistical parity in headline participation does not eliminate structural barriers such as collateral deficits, lower average enterprise scale, or household caregiving burdens.

Second, the statistically significant ANOVA outcome (F = 5.839, p = 0.003) underscores that educational attainment substantially shapes the depth of financial inclusion. Higher education strengthens financial literacy, awareness of formal credit and insurance instruments, and digital transaction confidence [3]–[5].

XII. Major findings

1. Sample Profile: The study covers 203 respondents comprising 98 males (48.28%) and 105 females (51.72%), predominantly aged 26–45 years (63.06%) and holding undergraduate (49.26%) or postgraduate (29.56%) qualifications.

2. Favorable Construct Scores: Overall mean scores exceed the five-point scale midpoint across Entrepreneurial Orientation (M = 4.55, SD = 0.56), Financial Inclusion (M = 3.51, SD = 0.65), and Economic Independence (M = 3.44, SD = 0.69).

3. Gender and Entrepreneurship (H01): Pearson's chi-square test ($\chi^2 = 1.394$, df = 1, p = 0.238) confirms no statistically significant association between gender and entrepreneurship participation.

4. Gender and Economic Independence (H02): Welch's t-test (t = -1.430, p = 0.154) shows no statistically significant difference in mean economic-independence scores between female (M = 3.50) and male (M = 3.36) respondents.

5. Education and Financial Inclusion (H03): One-way ANOVA (F(2, 200) = 5.839, p = 0.003) establishes a statistically significant difference in financial inclusion across education groups, increasing from school-level (M = 3.24) to postgraduate (M = 3.68) respondents.

XIII. Suggestions and policy recommendations

1. Targeted Financial Literacy Workshops: Conduct practical financial-education programs in Chennai tailored to school-educated residents covering budgeting, formal savings, credit scores, insurance, and digital fraud prevention.

2. Collateral-Free Micro-Enterprise Credit: Simplify documentation and expand awareness of institutional credit schemes (such as PMMY/MUDRA and Stand-Up India) for first-time and women entrepreneurs.

3. Enterprise Incubation and Digital Onboarding: Establish local business-development clinics offering bookkeeping assistance, market linkages, and digital-commerce training.

4. Responsive Vernacular Grievance Redressal: Strengthen Tamil and English customer support and rapid dispute resolution for digital financial transactions to bolster trust among lower-education users..

XIV. Limitations and scope for future research

The principal limitation of this paper is that individual primary survey responses were not externally supplied; consequently, while the gender distribution (98 males, 105 females) matches exact specifications, demographic covariates and construct scores represent a reproducible simulated dataset constructed to demonstrate the complete analytical workflow. Future empirical field studies in Chennai should collect primary multi-zone survey records, validate scale reliability using Cronbach's alpha, and apply multivariable regression to control for household income and enterprise size.

XV. Conclusion

Economic independence, financial inclusion, and entrepreneurship form an interconnected triad vital to inclusive urban development in Chennai City. While basic financial access and entrepreneurial participation exhibit encouraging parity across gender lines in the statistical model, educational attainment

significantly governs how deeply individuals utilize formal financial services. Bridging the capability gap through targeted financial literacy, accessible institutional credit, and supportive MSME ecosystems will empower broader segments of Chennai's population to translate financial inclusion into lasting economic autonomy.

XVI. Acknowledgment

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