How Does Financial Literacy Influence the Borrowing Behavior of Adults in Jaffna, Sri Lanka? A Multi-Group Analysis of Gender, Income, and Marital Status

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ABSTRACT

Financial literacy (FL) is expected to improve borrowing decisions, yet little is known about whether its association with borrowing differs across socio-demographic groups in post-conflict Sri Lanka. This study examines the relationship between FL and the borrowing behavior (BB) of adults in the Jaffna Divisional Secretariat (DS) Division, where BB denotes prudent borrowing practices, and tests whether gender, income, and marital status moderate it. Survey data were collected in August 2025 from 318 adults aged 18 to 60, randomly selected from household lists across 50 villages (response rate 82.8%), and analysed using partial least squares structural equation modelling (PLS-SEM), with measurement invariance assessed through MICOM and group differences tested by multi-group analysis (PLS-MGA). FL was positively associated with BB ($\beta = 0.379$, $p < 0.001$), explaining 14.4% of the variance in BB. The association was significantly stronger among women ($\beta = 0.503$) than men ($\beta = 0.294$; $p = 0.039$). It was strong among

respondents earning Rs. 150,000 or more per month (β = 0.449, $p < 0.001$) but smaller and not significant among those earning less (β = 0.221, $p = 0.064$), which reflects imprecision rather than evidence of no relationship; the income-group difference was significant ($p = 0.045$). Marital status did not moderate the relationship ($p = 0.096$). FL programs may be most effective when directed at women, and for lower-income earners they may need to be combined with access to affordable formal credit.

Keywords: *Financial literacy, Borrowing behavior, Gender, Income, Marital status*

1. INTRODUCTION

Poorly informed borrowing decisions can lead to higher interest costs, over-indebtedness, and financial distress. Financial literacy (FL), the knowledge, skills, and attitudes needed to make sound financial decisions (OECD, 2018), is commonly seen as a protection against these outcomes (Lusardi & Mitchell, 2014). In this study, borrowing behaviour (BB) refers to the prudence of borrowing practices: comparing credit costs, borrowing within repayment capacity, repaying on time, and avoiding high-cost credit. People with higher FL are better able to compare loan costs and assess their ability to repay, and are less likely to use high-cost or informal credit (Disney & Gathergood, 2013; Huston, 2012; Lusardi & Tufano, 2015).

Evidence from several countries supports this link. In the United Kingdom and Russia, financially literate consumers hold fewer high-cost credit products (Disney & Gathergood, 2013; Klapper et al., 2013), and in rural China, FL is associated with more productive borrowing (Guo et al., 2023). Recent studies extend these findings to digital, peer-to-peer, and student borrowing (Baltazar & Richard, 2026; Khalid et al., 2025; Khan & Rabbani, 2025; Solihati & Indriawati, 2026). However, weak self-control and overconfidence can reduce the benefit of financial knowledge (Gathergood, 2012; Pak, 2018).

Evidence from South Asia is thinner. In India, credit score literacy and psychological traits jointly shape borrowing behaviour (Altaf & Shah, 2025). In Sri Lanka's conflict-affected Northern and Eastern Provinces, the financial behaviour of women microfinance borrowers is associated with financial socialisation and social capital (Domingo & Buvanendra, 2023), and most surveyed households in Jaffna, Kilinochchi, and Mullaitivu were indebted, often without knowing their true level of debt (Romeshun et al., 2014).

The FL–BB link may also differ across groups. Women score lower than men on FL in most economies (Klapper & Lusardi, 2020), and social role theory attributes such differences to the different economic roles men and women

play in the household (Eagly, 1987). The same level of FL may therefore lead to different BB for men and women (Mansharamani, 2026). Lower-income earners have less liquidity and weaker access to formal credit and may borrow from any available source (Lusardi & Tufano, 2015), whereas higher-income earners have more room for knowledge to guide their choices. Married people share household obligations and often make borrowing decisions jointly.

Sri Lanka is a useful setting for these questions: only about 35% of its adults were classified as financially literate (Klapper et al., 2015), and households in Jaffna have long depended on informal lenders, microfinance, and gold loans. Northern Province studies describe indebtedness or focus on women microfinance borrowers; none, to the authors' knowledge, tests whether the FL–BB relationship differs by gender, income, and marital status in the general adult population after formally establishing measurement invariance.

2. AIMS/OBJECTIVES

Hence, the objectives of this study are to examine the relationship between FL and BB among adults in Jaffna and to determine whether gender, income, and marital status moderate this relationship. Based on the literature above, the following hypotheses were tested:

H1: FL is positively and significantly associated with BB.

H2: Gender significantly moderates the relationship between FL and BB.

H3: Income significantly moderates the relationship between FL and BB.

H4: Marital status significantly moderates the relationship between FL and BB.

3. METHODS

3.1 Research Design and Sample

The study adopted a positivist, deductive approach and a quantitative, cross-sectional survey design. The Jaffna DS Division, the administrative and commercial centre of Jaffna District, was selected for its accessibility. It contains 28 Grama Niladhari (GN) divisions and 50 villages, with a population of 54,159 as of June 30, 2025 (Divisional Secretariat, Jaffna, 2025). The target population is adults aged 18 to 60. Krejcie and Morgan (1970) recommend a minimum sample of 381 for this population, a conservative requirement given that the population aged 18 to 60 is smaller. In August 2025, 384 questionnaires were distributed across all 50 villages. Households were randomly selected from lists obtained with assistance from GN officers, and

one eligible adult was surveyed in each selected household. A total of 318 usable responses were received (response rate 82.8%).

Under the inverse square root method (Kock & Hadaya, 2018), the minimum sample needed to detect a path coefficient of 0.20 at the 5% level with 80% power is:

$$n_{\min} > \left(\frac{2.486}{|p_{\min}|}\right)^2 = \left(\frac{2.486}{0.20}\right)^2 \approx 155 \quad \text{.....(1)}$$

A G*Power analysis (Faul et al., 2009) for $f^2 = 0.15$, $\alpha = 0.05$, and power = 0.95, with one predictor, yields 89. The sample exceeds both thresholds; subgroup precision is reported in Section 4.3.

3.2 Measurement of Variables

FL was measured with nine items adapted from Lusardi and Mitchell (2007) and the OECD (2018), and BB with six items adapted from Yeo (2024), Brown and Graf (2013), and the OECD (2018). The BB items capture comparing loan costs, borrowing within repayment capacity, timely repayment, and avoiding high-cost credit. All items were positively worded; none were reverse-coded. Items were rated on a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree), so higher scores indicate higher self-assessed FL and more prudent BB. The questionnaire was translated into Tamil and back-translated into English by an independent bilingual academic to confirm equivalence. It is available from the corresponding author on request. The FL and BB items had no missing values. Gender was not reported by five respondents, and income by three; these cases were excluded only from the comparison in question.

Respondents were grouped by gender, marital status (married, single), and personal monthly income, measured at the respondent rather than the household level. The income cut-off of Rs. 150,000 is the personal income tax-free threshold, effective from April 1, 2025 (Ada Derana, 2025). It provides an official, policy-relevant dividing line between respondents outside the income tax net and taxable earners.

3.3 Model Specification and Analysis

Both constructs are reflective. The full-sample structural model (H1) is Equation 2. For H2 to H4, the model is estimated separately for the two groups of each moderator (Equation 3), and each hypothesis tests the difference between group-specific path coefficients (Equation 4):

$$\text{BB} = \beta_0 + \beta_1 \text{ FL} + \zeta \quad \text{.....(2)}$$

$$\mathrm{BB}^{(g)} = \beta_1^{(g)}\,\mathrm{FL} + \zeta^{(g)},\ \ g = 1, 2 \quad \text{.....(3)}$$

$$H_0: \beta_1^{(1)} - \beta_1^{(2)} = 0;\ \ H_a: \beta_1^{(1)} - \beta_1^{(2)} \neq 0 \quad \text{.....(4)}$$

PLS-SEM was used because the study is prediction-oriented, does not require multivariate normality, and offers an established group-comparison procedure (Hair et al., 2022; Henseler et al., 2016). Data were analyzed in SmartPLS 4. The measurement model was assessed through outer loadings (≥ 0.708), Cronbach's α and composite reliability (≥ 0.70), AVE (≥ 0.50), and HTMT (< 0.85); the structural model through VIF (< 3.3), bootstrapping with 5,000 subsamples (percentile confidence intervals), R^2, and f^2. Measurement invariance was assessed with the three-step MICOM procedure using 1,000 permutations (Henseler et al., 2016), and group differences were tested with PLS-MGA using 5,000 bootstrap subsamples per group and two-tailed tests ($p < 0.05$).

4. RESULTS

Of the valid responses, 167 (53.4%) were female, and 146 (46.6%) were male ($n = 313$); 180 (56.6%) were married and 138 (43.4%) were single ($n = 318$); and 216 (68.6%) earned Rs. 150,000 or more a month and 99 (31.4%) less ($n = 315$).

4.1 Measurement Model

All 15 outer loadings exceeded 0.708 (Table 1), so no items were removed. Cronbach's α and composite reliability exceeded 0.70, and AVE exceeded 0.50 for both constructs. The HTMT ratio was 0.400, and the square root of each AVE (FL 0.792; BB 0.789) exceeded the FL–BB correlation of 0.379. Indicator VIF values ranged from 1.755 to 2.878.

Table 1. Outer Loadings, Reliability, and Convergent Validity

Construct / item	Loading	Cronbach's α	ρA	CR (ρc)	AVE
Financial literacy (FL)		0.926	0.930	0.938	0.627
FL1 / FL2 / FL3	0.780 / 0.772 / 0.819				
FL4 / FL5 / FL6	0.751 / 0.793 / 0.812				
FL7 / FL8 / FL9	0.789 / 0.781 / 0.827				
Borrowing behaviour (BB)		0.879	0.904	0.908	0.623
BB1 / BB2 / BB3	0.742 / 0.822 / 0.885				
BB4 / BB5 / BB6	0.731 / 0.721 / 0.822				

Source: Authors constructed, 2026

4.2 Structural Model

FL was positively and significantly associated with BB (β = 0.379, t = 6.690, p < 0.001; 95% CI [0.274, 0.499]), supporting H1. FL explains 14.4% of the variance in BB (R^2 = 0.144; adjusted R^2 = 0.141), with a medium effect size (f^2 = 0.168).

4.3 Measurement Invariance and Multi-Group Analysis

Configural invariance held for every moderator, and compositional invariance was confirmed, as no permutation p-value was significant (Table 2). Partial measurement invariance was therefore established for all three moderators, allowing path coefficients to be compared (Henseler et al., 2016).

Table 2. MICOM Results

Moderator	Construct	Step 1	Step 2 (p)
Gender	FL	Yes	0.906
	BB	Yes	0.220
Income	FL	Yes	0.918
	BB	Yes	0.070
Marital status	FL	Yes	0.420
	BB	Yes	0.264

Note: Permutation p-values; p > 0.05 indicates invariance.

As Table 3 shows, the FL–BB association was significantly stronger among women than men, supporting H2, and significantly stronger among higher- than lower-income earners, supporting H3. The married–single difference was not significant, so H4 is not supported.

Table 3. PLS-MGA Results

Moderator	Group	n	β	SE	95% CI	p	Diff.	p (Diff.)
Gender	Male	146	0.294	0.081	[0.135, 0.453]	< 0.001	−0.208	0.039
(n = 313)	Female	167	0.503	0.062	[0.381, 0.625]	< 0.001		
Income	Below Rs. 150,000	99	0.221	0.120	[−0.013, 0.455]	0.064	−0.229	0.045
(n = 315)	Rs. 150,000 and above	216	0.449	0.076	[0.300, 0.598]	< 0.001		
Marital status	Married	180	0.448	0.062	[0.327, 0.569]	< 0.001	0.176	0.096
(n = 318)	Single	138	0.272	0.095	[0.085, 0.459]	0.004		

Note: SE = β/t; 95% CI = β ± 1.96 SE; Diff. = first − second group; two-tailed p-values.

The smallest path coefficient detectable at the 5% level with 80% power is $2.486/\sqrt{n}$ (Kock & Hadaya, 2018): 0.250 for the lower-income group ($n = 99$), compared with 0.169 to 0.212 for all other groups. The lower-income estimate (0.221) falls below this threshold and has a wide confidence interval.

5. DISCUSSION

FL was positively associated with prudent BB, consistent with international evidence (Disney & Gathergood, 2013; Guo et al., 2023), although the modest R^2 indicates that other factors, such as self-control (Gathergood, 2012), also matter. The association was considerably stronger among women. One possible explanation, not measured here, is that women in many Jaffna households handle day-to-day finances, pledging jewellery for gold loans and joining microfinance groups and *seettu* (rotating savings groups), so gains in their knowledge may show more directly in borrowing. Men's borrowing may depend more on business needs and social obligations. These explanations remain hypotheses for future research.

Among lower-income earners, the association was weaker and imprecisely estimated, so the data neither confirm nor rule out a smaller association. A plausible but untested explanation, in line with Lusardi and Tufano (2015), is that they often borrow out of immediate need, when knowing that a loan is expensive helps little if no cheaper option exists. Marital status did not alter the relationship, suggesting that FL operates similarly in individual and joint borrowing decisions.

6. IMPLICATIONS AND LIMITATIONS

FL programs run by the Central Bank of Sri Lanka, licensed banks, and microfinance institutions may be more effective if they target women, for example, through women's rural development societies and microfinance groups. For lower-income earners, financial education may need to be combined with affordable formal credit, such as small loans from licensed institutions and cooperative societies. The study has several limitations. Its cross-sectional, self-reported data support associations rather than causal effects, and self-assessed FL may differ from measured knowledge. The data come from a single, largely urban DS division, and FL explains only 14.4% of the variance in BB. The lower-income estimate should be re-examined with a larger sample. Future research could cover rural DS divisions and other Northern Province districts, use household-level income data, and include self-control, debt attitudes, and access to credit.

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