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Consumer credit intentions and self-reported behavior among rural workers and the role of perceived credit mechanisms in Sichuan, China

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Abstract: Consumer credit may help rural households manage irregular income and finance consumption or productive expenditure, but the factors associated with formal credit use among rural workers remain insufficiently understood. This cross-sectional study examines the relationships among standard Theory of Planned Behavior constructs, perceptions of the rural credit environment, credit-use intentions and self-reported credit behavior in Sichuan Province, China. The perceived rural consumer credit mechanism construct represents respondents' general appraisal of the convenience, accessibility, product suitability and fairness of local credit services. Responses from 385 economically active rural residents were analyzed using covariance-based structural equation modeling. Attitude, subjective norms, perceived behavioral control and the perceived credit mechanism were positively associated with behavioral intention; intention and perceived behavioral control were positively associated with self-reported behavior. The proposed indirect paths through the credit mechanism were statistically significant. A six-factor measurement model fitted substantially better than models that combined perceived behavioral control with the credit mechanism or loaded all items on one factor. However, an alternative structural ordering in which the perceived credit mechanism preceded the three psychological antecedents showed similar fit. The cross-sectional results therefore support associations and statistical indirect effects, not temporal or causal mediation. The study extends research on rural consumer finance by distinguishing personal control from perceptions of the external credit environment. Its relevance to human resource management is prospective: workforce performance, absenteeism, turnover and financial well-being were not measured and should be examined directly in future studies.

Keywords: theory of planned behavior; rural workers; consumer credit; self-reported behavior; institutional perception; financial inclusion; structural equation modeling; Sichuan

1. Introduction

China's growth model is shifting from export-led expansion toward a pattern in which domestic demand carries a larger share of economic activity. The Fourteenth Five-Year Plan and the dual circulation strategy both assign a central role to household consumption, and both identify rural areas as the segment of the domestic market with the greatest unrealized potential [1]. Rural incomes have risen steadily, but rural consumption continues to lag behind urban consumption, and one of the reasons repeatedly identified in the literature is the difficulty rural households face in obtaining formal credit [2]. Consumer credit, defined here as formal financial products that allow households to bring forward consumption through institutional intermediation, is therefore a policy instrument

of considerable interest.

The economic argument for credit is well established. Financial intermediation allows households to bridge the gap between the timing of income and the timing of expenditure [3], and relaxing liquidity constraints has measurable effects on consumption, investment and welfare in low-income settings [4,5]. In rural China, where agricultural income arrives in seasonal lumps and off-farm earnings are often irregular, credit performs a smoothing function that informal borrowing from relatives only partly fulfills [6,7]. Digital financial inclusion has expanded the supply of credit to rural households in the past decade and has been shown to raise household consumption and reduce its volatility [8–10].

Most research treats the rural household primarily as a consuming unit. The present study instead focuses on economically active rural residents engaged in farming, wage employment, seasonal migration or self-employment. Credit may finance training, transport, tools and working capital and may also smooth seasonal income. These functions make rural credit behavior relevant to research on workers' financial circumstances. The present survey, however, did not measure job performance, absenteeism, turnover or other organizational outcomes. Evidence that financial strain is associated with such outcomes comes from prior studies [11–15] and provides context rather than an empirical outcome of this study.

Prior research offers several reasons to examine credit in relation to work. Credit can cover the up-front costs of job search and migration [7], support self-employment and investment in productive assets [16], and reduce short-term liquidity pressure. Separately, studies of employees have linked financial strain with impaired attention, absenteeism and turnover [11–13,17]. Human capital theory also treats education, training, health and mobility as investments that may require financing before returns are realized [18,19]. These literatures motivate possible workforce implications, but they do not establish that the credit intentions or behavior observed in this sample affected employment outcomes.

Despite steady growth in rural lending in Sichuan, the existing literature explains rural credit use mainly through external conditions such as income, collateral, social security coverage and institutional supply [2,6]. Far less is known about the internal, psychological processes through which rural workers decide to use or avoid formal credit, or about how those processes interact with perceptions of the local credit system. The Theory of Planned Behavior (TPB) [20] has been applied to credit behavior among students and urban consumers [21,22], but rarely to rural labor in a developing economy, and rarely with an explicit institutional construct. This is a substantive omission. Behavioral theories predict that intention translates into behavior only when the environment permits it [23], and the rural credit environment in China is precisely the kind of setting in which environmental constraints are strong.

This study asks three questions. First, are attitude, subjective norms and perceived behavioral control associated with rural workers' intention to use consumer credit, and is intention associated with self-reported credit behavior? Second, is a favorable appraisal of the local credit mechanism associated with intention after accounting for the standard TPB antecedents? Third, are the indirect associations from the three antecedents to intention through the perceived credit mechanism statistically significant? The analysis uses survey responses from 385 rural residents in five prefecture-level regions of Sichuan. It contributes a demand-side behavioral account to rural finance research and tests whether personal control and perceptions of the external credit environment are empirically distinct. Any implications for human resource management are treated as hypotheses for future research because the study did not measure organizational

practices or work outcomes.

The remainder of the paper is organized as follows. Section 2 reviews the theoretical background and develops the hypotheses. Section 3 describes the sample, measures and analytical procedure. Section 4 reports the results of the measurement model, structural model and mediation analysis. Section 5 discusses the findings in relation to prior research, sets out theoretical contributions, implications for human resource management and organizational practice, and limitations. Section 6 concludes.

2. Literature review and hypotheses

2.1. Theory of planned behavior

The Theory of Planned Behavior holds that the most proximal determinant of a behavior is the intention to perform it, and that intention is formed by three considerations: the individual's attitude toward the behavior, the perceived social pressure to perform or not perform it (subjective norms), and the perceived ease or difficulty of performing it (perceived behavioral control) [20,24]. Perceived behavioral control is also expected to influence behavior directly, to the extent that it reflects actual control [20,25]. Meta-analytic evidence supports the predictive validity of the model across a wide range of behaviors, with the three antecedents jointly explaining a substantial share of variance in intention and intention explaining a substantial share of variance in behavior [26]. Fishbein and Ajzen [24] later emphasized that the model is explicitly open to the addition of background factors and context-specific constructs when these improve explanation in a given domain.

TPB has been applied to financial behavior in several contexts. Xiao et al. [21] used an extended version of the model to explain risky credit card behavior among college students and found that attitude, subjective norms and perceived control all predicted intention, which in turn predicted behavior and downstream financial and academic outcomes. Chudry et al. [22] profiled student debtors in the United Kingdom using an extended TPB and found that attitudes and normative beliefs differentiated borrowers from non-borrowers. These studies establish the relevance of the model to credit decisions but concern young, urban, relatively educated populations in institutional environments where credit supply is not in question. Whether the same psychological structure holds for rural workers in a developing economy, where credit supply is uneven and trust in institutions varies, is an open question that the present study addresses.

2.2. Financial well-being, human capital and rural workers

The human resource management literature provides a second body of theory relevant to rural credit behavior. Financial well-being is defined as the perception of being able to sustain current and anticipated desired living standards and financial freedom [27]. It has been shown to be an antecedent of overall well-being independent of income [28] and to influence work-related outcomes through the mechanism of financial stress. Workers who experience financial strain report lower pay satisfaction and lower self-rated performance [11], and organizations bear costs in the form of absenteeism, reduced attention and higher turnover [12,13]. Occupational health psychologists have called for financial variables to be incorporated systematically into models of worker stress and performance [14].

Human capital theory adds a longer-term perspective. Schultz [19] and Becker [18] conceptualized education, training, health and mobility as investments that raise the productive capacity of individuals, with returns accruing over time. Such investments require financing, and for low-income workers without savings the financing usually comes from credit. Empirical work in development economics confirms that relaxing credit constraints increases investment in

productive assets and self-employment [5,16], while credit rationing in rural China has been shown to generate measurable welfare losses [2]. Financial literacy is a further human capital dimension: individuals with greater financial knowledge use credit more effectively and are less likely to become over-indebted [29,30], and workplace financial education has been found to improve personal financial behavior [31].

The three TPB antecedents can be interpreted in this broader context. Perceived behavioral control over credit is related to, but not identical with, financial self-efficacy. Subjective norms represent perceived approval from important referents and are relevant where family and community networks influence financial decisions [6,32]. Attitude toward credit may reflect financial knowledge and prior experience. These links justify examining rural workers as an economically active population, but the present data do not test the effects of workplace financial education or other human resource practices.

2.3. Hypotheses derived from the theory of planned behavior

Attitude reflects the individual's overall evaluation of performing a behavior. Rural workers who expect consumer credit to help the household meet its needs, invest in a small business or manage seasonal cash flow are likely to evaluate it favorably and to form the intention to use it, a relationship consistently reported in credit research [21,22].

H1: Attitude toward consumer credit is positively related to behavioral intention.

Subjective norms capture perceived expectations of important referents. Borrowing decisions in rural China are discussed within family and village networks, and peer experience is a primary source of information about lenders [6,32], so approval from these referents should strengthen intention.

H2: Subjective norms are positively related to behavioral intention.

Perceived behavioral control reflects confidence in being able to perform the behavior, including understanding loan terms and repaying on schedule [25]. Workers who feel capable of managing a loan are more likely to intend to apply for one.

H3: Perceived behavioral control is positively related to behavioral intention.

Intention is the most proximal determinant of behavior, and meta-analytic evidence shows that it explains a substantial share of subsequent behavior [20,26]. Xiao et al. [21] found that intention predicted actual credit behavior.

H4: Behavioral intention is positively related to consumer credit behavior.

Perceived behavioral control also influences behavior directly when it reflects the actual resources and constraints the individual faces [20]. For rural workers with limited education and irregular income, the ability to complete an application and meet repayments constrains behavior itself, not only intention.

H5: Perceived behavioral control is positively related to consumer credit behavior.

2.4. Perceived rural consumer credit mechanism

TPB allows contextual variables to be added when they improve explanation in a specific domain [23,24]. In rural credit markets, respondents may judge whether services are physically or digitally accessible, whether procedures are understandable, whether products suit irregular income and whether lenders treat rural customers fairly. We use the term perceived rural consumer credit mechanism (CF) for this general appraisal of the external credit environment. The construct is perceptual: it does not measure the objective supply, price or legal design of credit.

The distinction between perceived behavioral control and CF is conceptual as

well as empirical. Perceived behavioral control concerns a respondent's perceived capability and control over applying for and managing credit. CF concerns the respondent's appraisal of features attributed to providers and the local service environment. A person may feel capable of completing an application yet regard available products as unsuitable or unfair; conversely, accessible services do not guarantee confidence in repayment. The construct draws on service quality theory [33], the access dimensions of financial inclusion [34] and research on institutional trust [35]. It resembles facilitating conditions [36], but its referent is the credit-service environment rather than the respondent's own capability.

CF was specified reflectively because the study treats a general appraisal of the credit environment as the latent disposition expressed across correlated judgments of convenience, accessibility, suitability and fairness. This specification assumes that the indicators are manifestations of an underlying evaluation rather than components that independently form an objective institutional index. The assumption is supported by the observed common variance and factor loadings, but these results do not rule out a formative or multidimensional specification. Future research should compare these alternatives using item wording and design information preserved prospectively. A more favorable appraisal of the external credit environment was expected to be associated with stronger intention [34,35].

H6: The perceived rural consumer credit mechanism is positively related to behavioral intention.

The proposed model treats attitude, subjective norms and perceived behavioral control as correlates of CF. This ordering follows the view that prior evaluations, social information and perceived capability may influence how respondents interpret an institutional environment [24]. The reverse ordering is also plausible: experience of an accessible or fair credit environment may shape attitudes, perceived norms and control. Because the survey is cross-sectional, the hypothesized direction is a theoretical specification rather than an observed temporal sequence, and an alternative ordering is compared in the results.

H7: Attitude toward consumer credit is positively related to the perceived rural consumer credit mechanism.

Subjective norms operate partly through the transmission of experience: when referents report that the local credit system worked reliably for them, the individual's perception of that system improves [6,32].

H8: Subjective norms are positively related to the perceived rural consumer credit mechanism.

Perceived control and perceived system quality may also reinforce one another [25]. Clear procedures and fair terms may increase a person's sense of capability, while greater capability may make the same procedures appear easier to navigate. The hypothesized path below represents the ordering tested in the proposed model, not a claim that the reciprocal path has been excluded.

H9: Perceived behavioral control is positively related to the perceived rural consumer credit mechanism.

If the proposed associations in H6 to H9 hold, the product of the relevant path coefficients yields an indirect association between each TPB antecedent and intention through CF. In cross-sectional data, such an indirect effect does not by itself establish a temporal mechanism.

H10: Attitude, subjective norms and perceived behavioral control each have a positive statistical indirect association with behavioral intention through the perceived rural consumer credit mechanism.

The conceptual model is presented in **Figure 1**.

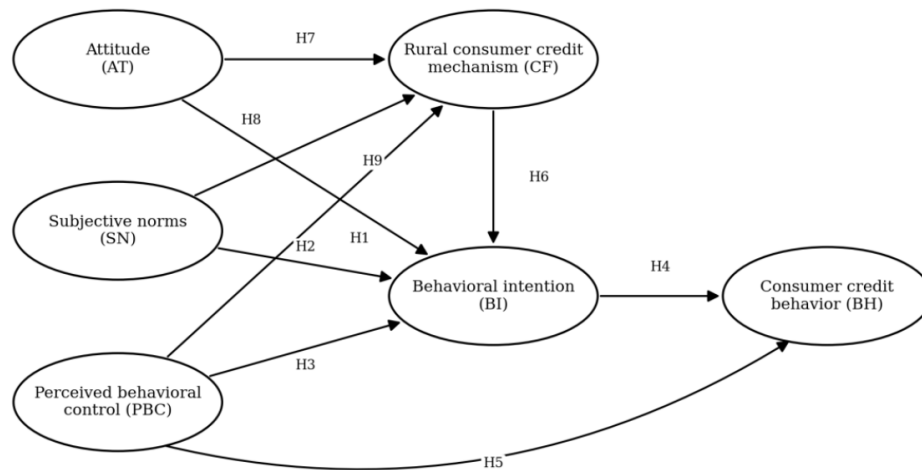


Figure 1. Conceptual model. Attitude (AT), subjective norms (SN) and perceived behavioral control (PBC) predict behavioral intention (BI) directly (H1 to H3) and indirectly through the perceived rural consumer credit mechanism (CF) (H6 to H10). BI and PBC predict self-reported consumer credit behavior (BH) (H4 and H5).

3. Materials and methods

3.1. Research design and setting

The study used a cross-sectional questionnaire and covariance-based structural equation modeling to test a theory-specified network of associations among reflective latent variables [37,38]. Sichuan Province was selected because of its large rural population and the coexistence of rural credit cooperatives, village and township banks and digital lenders. The design can estimate the fit and strength of the proposed associations, but it cannot establish temporal order or causal effects.

3.2. Sample and data collection

The target population was economically active residents of rural Sichuan engaged in agricultural production, wage employment or self-employment. The five prefecture-level regions with the largest rural populations were purposively selected from the Seventh National Population Census: Chengdu, Nanchong, Dazhou, Liangshan Yi Autonomous Prefecture and Yibin. The archived study materials do not record the within-region village or community selection procedure, recruitment channels, region-specific sample counts or whether probability selection was maintained after the regional stage. The sample should therefore not be treated as a province-wide probability sample. Selecting regions on rural population size may underrepresent workers in smaller prefectures with different credit infrastructures. The target of 385 usable responses was based on Cochran's [39] formula at a 95 percent confidence level and 5 percent margin of error. The common guideline of ten observations per freely estimated parameter was not used to justify the sample size; instead, the sensitivity analysis reported below provides a more transparent assessment of detectable effects.

Data were collected between May and August 2024 using paper and electronic questionnaires. Of 427 questionnaires distributed, 407 were returned, giving a return rate of 95.3 percent. Twenty-two returned questionnaires were excluded during screening, leaving 385 usable cases and an overall usable response rate of 90.2 percent based on all questionnaires distributed. The retained data file contains no missing item responses. It does not preserve excluded cases or reason codes, so the numbers excluded for incompleteness, patterned responding or other criteria cannot be reconstructed. **Table 1** reproduces the demographic totals available in the archived study records. Women accounted for 61.0 percent of the sample; 59.7 percent were aged 51 to 65 years; 59.7 percent reported farming as their main occupation; 70.1 percent reported monthly

household income of 3,000 to 4,000 RMB; and 70.1 percent reported primary school as their highest education. The analytic data file contains only the 29 scale items and no demographic or regional variables, so the remaining categories and region-specific distributions cannot be disaggregated or used as controls.

Table 1. Available sample profile and complete questionnaire categories (N = 385)

Characteristic	Questionnaire category	Frequency	Percentage
Gender	Female	235	61.0
	Male	150	39.0
Age	18 to 30 years	NR	NR
	31 to 40 years	NR	NR
	41 to 50 years	NR	NR
	51 to 65 years	230	59.7
	Above 65 years	NR	NR
	All categories other than 51 to 65 combined	155	40.3
Main occupation	Farming	230	59.7
	Wage employment	NR	NR
	Self-employment	NR	NR
	Mixed employment	NR	NR
	All non-farming categories combined	155	40.3
Monthly household income	Below RMB 3,000	NR	NR
	RMB 3,000 to 4,000	270	70.1
	RMB 4,001 to 5,000	NR	NR
	RMB 5,001 to 6,000	NR	NR
	Above RMB 6,000	NR	NR
	All bands other than RMB 3,000 to 4,000 combined	115	29.9
Education	No formal schooling	NR	NR
	Primary school	270	70.1
	Junior secondary school	NR	NR
	Senior secondary or vocational school	NR	NR
	College or above	NR	NR
	All levels other than primary school combined	115	29.9
Region	Chengdu	NR	NR
	Nanchong	NR	NR
	Dazhou	NR	NR
	Liangshan Yi Autonomous Prefecture	NR	NR
	Yibin	NR	NR
Previous formal consumer credit experience	Yes	NR	NR
	No	NR	NR

Note: NR = not retained in the archived analytic dataset. The questionnaire categories are listed in full. Frequencies for the principal categories and combined residual categories are reproduced from the archived study records; individual frequencies within the residual categories, region counts and prior credit experience counts cannot be reconstructed from the supplied files.

3.3. Measures

The questionnaire contained 29 core items: five attitude items (AT1 to AT5), four subjective norm items (SN1 to SN4), five perceived behavioral control items (BC1 to BC5), five intention items (BI1 to BI5), five self-reported behavior items (BH1 to BH5) and five perceived credit mechanism items (CF1 to CF5). The TPB measures were adapted from Ajzen [20] and Taylor and Todd [40]; the behavior items drew on Chudry et al. [22] and Venkatesh et al. [36]; and the CF items

drew on SERVQUAL [33] and financial access dimensions [34]. All core items used a five-point agreement scale from 1 (strongly disagree) to 5 (strongly agree). The supplied Chinese and English questionnaires contain parallel item content and are reproduced in **Appendix A**. Because the BH items ask respondents to agree with statements about recent use, applications, obtained credit and repayment experience, BH is interpreted as an agreement-based self-report index rather than an objective transaction-frequency measure. The available records do not document the original expert review, pilot testing, translation or back-translation procedures; this documentation limitation is acknowledged below.

3.4. Common method bias

Because all constructs were measured by self-report at one time, common method bias remains a plausible source of covariance [41]. Procedural protections included anonymity and separation of predictor and criterion blocks by demographic questions. Harman's exploratory test produced six factors with eigenvalues above one, and the first factor accounted for 31.96 percent of the variance. In addition, a one-factor confirmatory model fitted the data poorly (chi-square = 3,332.31, degrees of freedom (df) = 377, comparative fit index (CFI) = 0.500, Tucker-Lewis index (TLI) = 0.461, root mean square error of approximation (RMSEA) = 0.143) and substantially worse than the six-factor model. These tests argue against a single common factor as a complete explanation of the covariance, but neither test excludes more limited method effects. No marker variable was collected, and a common latent method factor could not be identified without imposing additional assumptions. Common method bias is therefore retained as a study limitation rather than declared absent.

3.5. Data analysis and robustness checks

Descriptive statistics and exploratory factor analysis were originally computed in SPSS 23.0, and confirmatory factor analysis and structural equation modeling were conducted in AMOS 23.0 with maximum likelihood estimation. The measurement model was evaluated before the structural model [37], and model fit was judged against the cutoff criteria proposed by Hu and Bentler [42]. Reliability was assessed using Cronbach's alpha and composite reliability, convergent validity using average variance extracted (AVE) [43,44], and discriminant validity using the Fornell-Larcker criterion and the heterotrait-monotrait ratio of correlations (HTMT) [45]. HTMT confidence intervals were obtained from 1,000 nonparametric bootstrap samples. Missingness, univariate skewness and kurtosis, Mardia's multivariate coefficients and Mahalanobis distances were examined before model estimation. The six-factor measurement model was compared with a five-factor model that combined perceived behavioral control and CF and with a one-factor model. To examine causal-order ambiguity, the proposed structural model was compared with an alternative in which CF preceded attitude, subjective norms and perceived behavioral control. Variance inflation factors were calculated for the construct scores. Indirect effects used 5,000 bias-corrected bootstrap samples [46]. Because demographic and regional variables were absent from the analytic file, control-variable models could not be estimated.

4. Results

4.1. Data screening and measurement model

The 385 retained cases had no missing item responses. Item skewness ranged from -0.412 to 0.054, and excess kurtosis ranged from -0.537 to 0.049. Mardia's multivariate skewness test was not significant (chi-square = 4,220.24, df = 4,495, $p = 0.998$), but multivariate kurtosis departed from normality (coefficient = 882.70; expected value = 899; $z = -3.77$, $p < 0.001$). No case exceeded the Mahalanobis distance criterion at $p < 0.001$ (maximum = 51.50; cutoff for

29 variables = 58.30), so no observations were removed as multivariate outliers. Maximum likelihood results are retained because the univariate departures were small and no extreme multivariate cases were detected; the significant multivariate kurtosis test nevertheless warrants caution, and bootstrap intervals are emphasized for indirect effects. The Kaiser-Meyer-Olkin (KMO) measure was 0.917 and Bartlett's test was significant (chi-square = 6,125.03, $p < 0.001$). Cronbach's alpha values ranged from 0.859 to 0.891, composite reliability from 0.866 to 0.903 and average variance extracted from 0.563 to 0.651. Standardized factor loadings ranged from 0.718 to 0.827 and were significant at $p < 0.001$ (**Table 2**).

Table 2. Standardized factor loadings, internal consistency reliability and convergent validity of the six latent constructs (N = 385)

Construct	Item	Loading	α	CR	AVE
Attitude (AT)	AT1	0.795	0.889	0.903	0.651
	AT2	0.764			
	AT3	0.776			
	AT4	0.820			
	AT5	0.777			
Subjective norms (SN)	SN1	0.774	0.859	0.873	0.633
	SN2	0.753			
	SN3	0.758			
	SN4	0.825			
Perceived behavioral control (PBC)	BC1	0.718	0.865	0.866	0.563
	BC2	0.727			
	BC3	0.748			
	BC4	0.764			
	BC5	0.791			
Behavioral intention (BI)	BI1	0.751	0.878	0.877	0.590
	BI2	0.782			
	BI3	0.770			
	BI4	0.771			
	BI5	0.767			
Self-reported consumer credit behavior (BH)	BH1	0.765	0.885	0.885	0.606
	BH2	0.762			
	BH3	0.827			
	BH4	0.777			
	BH5	0.763			
Perceived rural consumer credit mechanism (CF)	CF1	0.785	0.891	0.891	0.622
	CF2	0.752			
	CF3	0.812			
	CF4	0.812			
	CF5	0.781			

Note: Complete item wording is reported in Appendix A. Loadings are standardized confirmatory factor analysis estimates and are significant at $p < 0.001$. α = Cronbach's alpha; CR = composite reliability; AVE = average variance extracted.

The Fornell-Larcker criterion was satisfied because the square root of AVE for each construct exceeded its correlations with the other constructs (**Table 3**). HTMT estimates ranged from 0.199 to 0.507. Across 1,000 bootstrap samples, every upper 95 percent confidence limit was below 0.60 and therefore below

the conservative 0.85 threshold [45]. In particular, HTMT between perceived behavioral control and CF was 0.434 (95 percent CI [0.339, 0.528]), supporting their empirical distinction. **Appendix B** reports all HTMT intervals.

Table 3. Descriptive statistics, inter-construct correlations and discriminant validity assessment (Fornell-Larcker criterion and HTMT ratios) for the six latent constructs

Construct	Mean	SD	AT	SN	PBC	BI	BH	CF
AT	3.782	0.696	0.807	0.276	0.199	0.358	0.406	0.463
SN	3.677	0.708	0.276	0.796	0.296	0.445	0.398	0.463
PBC	3.522	0.653	0.191	0.294	0.750	0.401	0.409	0.434
BI	3.384	0.668	0.358	0.446	0.400	0.768	0.462	0.507
BH	3.570	0.682	0.407	0.395	0.403	0.462	0.778	0.505
CF	3.528	0.700	0.461	0.460	0.434	0.507	0.500	0.789

Note: Means and standard deviations are for composite scores on the five-point scale. Diagonal values are the square roots of AVE; values below the diagonal are inter-construct correlations from the confirmatory factor analysis, all significant at $p < 0.001$; values above the diagonal are HTMT ratios.

The six-factor measurement model fitted the data well: chi-square = 418.43, $df = 362$, chi-square/ $df = 1.156$, goodness-of-fit index (GFI) = 0.934, adjusted goodness-of-fit index (AGFI) = 0.926, CFI = 0.990, TLI = 0.989 and RMSEA = 0.020. A five-factor model that combined perceived behavioral control and CF fitted materially worse (chi-square = 1,051.58, $df = 367$, CFI = 0.884, TLI = 0.872, RMSEA = 0.070). The one-factor model was poorer still (chi-square = 3,332.31, $df = 377$, CFI = 0.500, TLI = 0.461, RMSEA = 0.143). These comparisons support treating personal control, perceptions of the credit environment and the remaining constructs as empirically distinct, while not resolving whether CF is best represented reflectively, formatively or multidimensionally.

4.2. Structural model and alternative ordering

The proposed structural model fitted the data well: chi-square = 459.71, $df = 365$, chi-square/ $df = 1.259$, GFI = 0.927, AGFI = 0.919, CFI = 0.984, TLI = 0.982 and RMSEA = 0.026. The alternative model in which CF preceded attitude, subjective norms and perceived behavioral control also fitted well and almost identically (chi-square = 465.16, $df = 368$, CFI = 0.984, TLI = 0.982, RMSEA = 0.026). The small difference in global fit does not discriminate between the two causal orderings. The proposed paths are therefore reported as theory-specified associations, not as evidence that psychological dispositions temporally precede perceptions of the credit environment.

Table 4 reports the standardized path coefficients and hypothesis testing results, and **Figure 2** presents the estimated structural model. Attitude ($\beta = 0.135$, $p = 0.008$), subjective norms ($\beta = 0.213$, $p < 0.001$) and perceived behavioral control ($\beta = 0.177$, $p < 0.001$) were positively associated with behavioral intention, supporting H1 to H3. Behavioral intention was positively associated with self-reported credit behavior ($\beta = 0.386$, $p < 0.001$), as was perceived behavioral control ($\beta = 0.257$, $p < 0.001$), supporting H4 and H5. CF was positively associated with intention ($\beta = 0.241$, $p < 0.001$), supporting H6. Attitude ($\beta = 0.315$), subjective norms ($\beta = 0.268$) and perceived behavioral control ($\beta = 0.306$) were positively associated with CF, supporting H7 to H9 within the proposed ordering. The model explained 41.0 percent of the variance in CF, 37.2 percent in intention and 29.3 percent in self-reported behavior. Variance inflation factors ranged from 1.19 to 1.50 for the four predictors of intention and were 1.14 for both predictors of behavior,

providing no indication of problematic multicollinearity. With $N = 385$, $\alpha = 0.05$ and 80 percent power, the corresponding omnibus regression sensitivity was $f\text{-squared} = 0.031$ for four predictors and 0.025 for two predictors. This is a sensitivity analysis, not an a priori power calculation.

Table 4. Standardized path coefficients and hypothesis testing results for the proposed structural model

Hypothesis	Path	β	C.R.	p	Result
H1	AT to BI	0.135	2.641	0.008	Supported
H2	SN to BI	0.213	4.083	< 0.001	Supported
H3	PBC to BI	0.177	3.181	< 0.001	Supported
H4	BI to BH	0.386	6.253	< 0.001	Supported
H5	PBC to BH	0.257	4.435	< 0.001	Supported
H6	CF to BI	0.241	3.798	< 0.001	Supported
H7	AT to CF	0.315	6.128	< 0.001	Supported
H8	SN to CF	0.268	5.198	< 0.001	Supported
H9	PBC to CF	0.306	5.499	< 0.001	Supported

Note: β = standardized estimate; C.R. = critical ratio. Maximum likelihood estimation in AMOS 23.0.

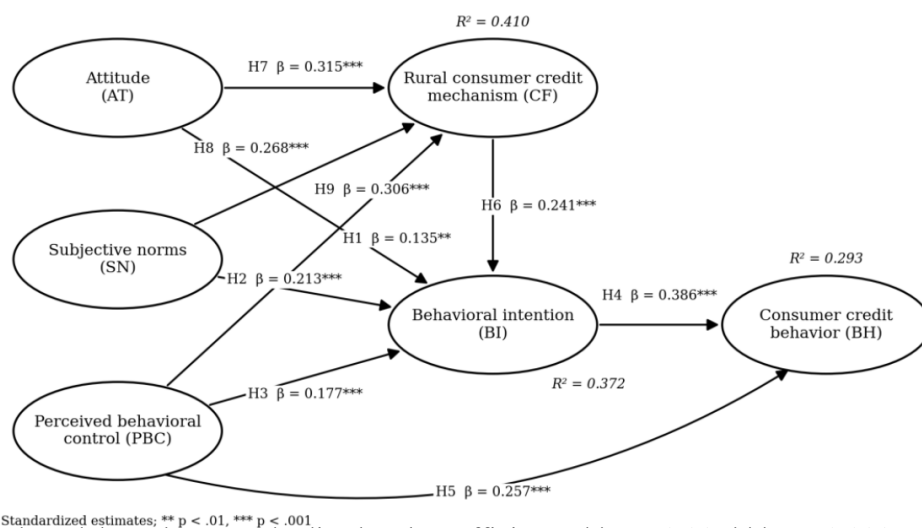


Figure 2. Structural model results. Standardized path coefficients; ** $p < 0.01$, *** $p < 0.001$. R-squared values are shown above or below the endogenous constructs. Arrows represent theory-specified cross-sectional associations.

4.3. Statistical indirect effects

As shown in **Table 5**, the three bootstrapped indirect effects through CF were statistically significant because none of their bias-corrected 95 percent confidence intervals included zero, supporting H10 as a statement about indirect association. The indirect association for attitude was 0.084 (95 percent CI [0.043, 0.137]), for subjective norms 0.073 (95 percent CI [0.037, 0.123]) and for perceived behavioral control 0.076 (95 percent CI [0.037, 0.126]). Direct associations with intention remained significant. These coefficients describe partial statistical indirect effects in the proposed model; they do not show that CF transmitted or converted the antecedents into later intentions.

Table 5. Bootstrapped mediation results (5,000 resamples)

Path	Direct effect	Indirect effect	Total effect	95% CI lower	95% CI upper	Mediated	Type
AT to CF to BI	0.135	0.084	0.219	0.043	0.137	36.05%	Partial

Continued table:

Path	Direct effect	Indirect effect	Total effect	95% CI lower	95% CI upper	Mediated	Type
SN to CF to BI	0.213	0.073	0.286	0.037	0.123	23.32%	Partial
PBC to CF to BI	0.177	0.076	0.253	0.037	0.126	29.45%	Partial

Note: Standardized effects. Confidence intervals are bias-corrected bootstrap intervals based on 5,000 resamples; none includes zero. The mediated percentage is a descriptive decomposition under the proposed cross-sectional model and should not be interpreted causally.

5. Discussion

5.1. Principal findings and relation to prior research

The results are consistent with the Theory of Planned Behavior in this sample: attitude, subjective norms and perceived behavioral control were associated with intention, and intention and perceived behavioral control were associated with self-reported behavior. This pattern resembles findings among student samples [21,22], although the cross-sectional design does not establish prediction over time. Subjective norms had a larger coefficient for intention than attitude, which is compatible with prior work on family, community and peer influence in financial decisions [6,32]. Perceived behavioral control also had a direct association with the behavioral index. Because the behavior items are self-reports collected in the same questionnaire, this association should not be interpreted as evidence that greater control caused subsequent credit use.

CF was associated with intention and with the three TPB antecedents in the proposed model. The indirect coefficients indicate that the covariance between each antecedent and intention can be decomposed partly through CF under that specification. The poorer fit of the combined PBC-CF measurement model supports a distinction between a person's perceived capability and appraisal of the external credit environment. At the same time, the alternative structural ordering fitted nearly as well as the proposed model. The data therefore support conceptual and empirical distinction among the constructs but do not determine whether institutional perceptions shape psychological dispositions, dispositions shape institutional perceptions, or both develop reciprocally.

The findings have limited but potentially useful relevance to human resource research. The respondents were economically active rural residents, most of whom reported farming as their main occupation. The study shows associations among financial perceptions, intentions and self-reported credit behavior in this group. It did not measure financial well-being, job performance, absenteeism, turnover, organizational support or employer practices. Links to those outcomes remain propositions derived from prior literature [11–14], not findings of the present analysis.

5.2. Theoretical contributions

The study makes two bounded theoretical contributions. First, it shows that a perceptual measure of the rural credit environment can be incorporated into a TPB model and distinguished empirically from perceived behavioral control. The similar fit of theoretically plausible alternative structural orderings further indicates that this contribution concerns construct differentiation rather than identification of a causal sequence. The significant indirect coefficients are useful for describing the proposed model, but their causal interpretation requires longitudinal or experimental evidence.

Second, the study contributes to the rural finance literature by supplying a demand-side, behavioral explanation to complement the supply-side and econometric explanations that dominate research on credit use in rural China [2,6,8]. The results show that even where credit supply exists, its use depends on how the system is perceived and on the psychological readiness of workers to

engage with it.

This demand-side perspective also provides a basis for connecting rural consumer finance with future research on workers' financial well-being. Existing human resource studies have focused mainly on employees in formal organizations [13,27,28]. The present sample broadens the population in which credit-related perceptions can be studied, but it does not demonstrate effects on workforce productivity or establish that employer-led interventions would change credit behavior.

5.3. Potential implications for practice and future intervention research

The associations identify possible targets for intervention research rather than proven levers for immediate practice. Rural employers, agricultural enterprises, cooperatives, financial service providers and human resource practitioners could test whether financial education, peer information or changes to service design alter perceived control, CF, intention or verified credit use. Any such intervention should also assess borrowing costs, repayment stress and over-indebtedness rather than treating greater credit use as an unqualified benefit.

Perceived behavioral control was associated with both intention and the self-reported behavior index. This pattern supports testing short, practical education that explains loan terms, repayment capacity and application procedures. Prior studies link financial literacy with more effective credit use and lower over-indebtedness [29,30] and report improvements after workplace financial education [31]. The present results do not establish that similar programs would be effective for rural workers; a field trial with behavioral and financial well-being outcomes would be needed.

Subjective norms were also associated with intention. Cooperatives or work groups could therefore evaluate peer-led information alongside neutral, standardized guidance. Such programs should avoid social pressure to borrow and should distinguish the sharing of verifiable experience from endorsement of a particular lender. This proposal follows prior evidence on peer information in financial decisions [32], but its effectiveness and possible harms were not tested here.

The association between CF and intention suggests that service design deserves attention. Credit providers could test clearer procedures, products aligned with seasonal income and transparent explanations of eligibility and repayment. Partnerships with cooperatives or employers may reduce transaction costs [34], but they also create risks involving privacy, coercion and conflicts of interest. Evaluation should therefore include informed choice, data protection, repayment performance and financial stress, not application volume alone.

At the policy level, the results support further study of rural financial infrastructure as one condition affecting workers' financial decisions. They do not show that expanding credit will improve productivity, human capital or freedom from financial strain. Those outcomes require direct measurement and designs capable of estimating benefits and harms over time.

5.4. Limitations and future research

The study has several limitations. First, the cross-sectional design cannot establish temporal or causal ordering. The alternative model in which CF precedes the TPB antecedents fitted almost as well as the proposed model, so the reported indirect effects should be read as statistical decompositions. Longitudinal panel data or randomized changes in information or service access are needed to test direction. Second, BH is an agreement-based self-report index concerning behavior, not a record of transaction frequency, amount or recency. The measure may be affected by recall and social desirability bias. Future studies should link survey responses to administrative records with participant consent. Third,

all constructs came from the same questionnaire. The poor one-factor model reduces concern that one factor explains all covariance, but no marker variable or directly measured method factor was available. Fourth, although parallel Chinese and English questionnaires are available and **Appendix A** reports every item, the original expert review, pilot testing, translation and back-translation records were not retained. Fifth, the five prefecture-level regions were chosen for their large rural populations, and the archived records do not document within-region recruitment, village selection, regional sample counts or the use of probability sampling at each stage. Selection bias cannot be quantified, and generalization beyond the observed sample should be cautious. Sixth, the questionnaire collected age, gender, education, occupation, income, region and prior credit experience, but these fields were omitted from the archived analytic file. **Table 1** lists every questionnaire category and reports the frequencies that remain recoverable; category-specific frequencies marked as not retained (NR) and control-variable models cannot be reconstructed from the supplied data. Seventh, the sample summary is concentrated among respondents aged 51 to 65, those with primary education and farmers, which limits relevance to younger workers, migrants and formal employees. Eighth, CF was estimated reflectively, but convenience, accessibility, suitability and fairness may form a multidimensional or formative institutional index. Future studies should compare these specifications. Finally, no employer, cooperative or human resource data and no measures of productivity, absenteeism, turnover or financial well-being were collected. Any human resource implications remain hypotheses for direct testing.

6. Conclusion

This study found that attitudes, subjective norms, perceived behavioral control and appraisals of the rural credit environment were associated with consumer credit intentions among 385 economically active rural residents in Sichuan. Intention and perceived control were also associated with an agreement-based index of self-reported credit behavior. The six constructs were empirically distinguishable, including perceived behavioral control and CF. The proposed indirect associations through CF were significant, but an alternative causal ordering showed similar fit. The evidence therefore supports a model of related psychological and institutional perceptions without establishing which perceptions arise first or whether changing them would alter later behavior. The findings contribute most directly to rural consumer finance research. Their relevance to human resource management lies in questions for future longitudinal and intervention studies that measure financial well-being and work outcomes directly.

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Ethical approval: The protocol was reviewed by the primary researcher's institution and was deemed exempt from formal ethics committee review because the survey was voluntary, anonymous, involved no identifiable personal information and presented minimal risk. The available study records do not identify the reviewing body by name and do not contain an approval or exemption reference number.

Informed consent statement: Informed consent was obtained from all participants. At the beginning of the survey, participants received a statement describing the purpose of the research, the voluntary nature of participation and the protections for anonymity and confidentiality. Participants were informed that

they could withdraw at any time without penalty.

Data availability statement: The data supporting the findings of this study are available from the corresponding author on reasonable request.

Conflict of interest: The authors declare no conflict of interest.

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Appendix A Questionnaire items and response categories

The supplied study materials include parallel Chinese- and English-language questionnaires. Each core item used a five-point agreement scale from 1 (strongly disagree) to 5 (strongly agree). The demographic categories were gender; age (18 to 30, 31 to 40, 41 to 50, 51 to 65, above 65); main occupation (farming, wage employment, self-employment, mixed employment); monthly household income (below RMB 3,000, RMB 3,000 to 4,000, RMB 4,001 to 5,000, RMB 5,001 to 6,000, above RMB 6,000); education (no formal schooling, primary school, junior secondary school, senior secondary or vocational school, college or above); region (Chengdu, Nanchong, Dazhou, Liangshan Yi Autonomous Prefecture, Yibin); and previous formal consumer credit experience (yes or no).

Table A1. Complete English wording of the core questionnaire items

Construct	Code	Item wording
Attitude toward consumer credit	AT1	Using formal consumer credit would be beneficial for meeting my household's financial needs.
Attitude toward consumer credit	AT2	Using formal consumer credit would be useful when necessary expenditures arise.
Attitude toward consumer credit	AT3	Consumer credit can help me manage temporary financial shortages.
Attitude toward consumer credit	AT4	Using formal consumer credit is generally a good option when financing is needed.
Attitude toward consumer credit	AT5	Overall, I have a favorable attitude toward appropriate use of formal consumer credit.
Subjective norms	SN1	People who are important to me would support my use of formal consumer credit when necessary.
Subjective norms	SN2	My family would approve of my using formal consumer credit when needed.
Subjective norms	SN3	People whose opinions I value generally view appropriate use of formal credit positively.
Subjective norms	SN4	The credit experiences and opinions of people I trust influence my willingness to use formal credit.
Perceived behavioral control	BC1	I am confident that I can understand the basic conditions of formal consumer credit.
Perceived behavioral control	BC2	I am capable of completing the procedures required to apply for formal credit.
Perceived behavioral control	BC3	I know how to obtain information about formal consumer credit when needed.
Perceived behavioral control	BC4	I am confident that I can assess my ability to repay a loan.
Perceived behavioral control	BC5	Whether I use formal consumer credit is largely under my own control.
Behavioral intention	BI1	I intend to use formal consumer credit if I have a financing need in the future.
Behavioral intention	BI2	I would consider applying for formal consumer credit when necessary.
Behavioral intention	BI3	I expect that I may use formal consumer credit in the future.
Behavioral intention	BI4	I am willing to apply if an appropriate formal credit product is available.
Behavioral intention	BI5	I am willing to use formal consumer credit when I genuinely need financing.
Self-reported consumer credit behavior	BH1	I have used formal consumer credit products during the recent period.
Self-reported consumer credit behavior	BH2	I have recently applied for formal consumer credit when financing was needed.
Self-reported consumer credit behavior	BH3	I have actually obtained and used formal consumer credit.
Self-reported consumer credit behavior	BH4	Formal consumer credit has been part of my recent financial activities.
Self-reported consumer credit behavior	BH5	I have experience managing and repaying formal consumer credit.
Perceived rural consumer credit mechanism	CF1	Formal consumer credit services are convenient for rural residents to access.
Perceived rural consumer credit mechanism	CF2	Credit application procedures and requirements are clear and understandable.

Continued table:

Construct	Code	Item wording
Perceived rural consumer credit mechanism	CF3	Available credit products are suitable for rural residents' income patterns and financing needs.
Perceived rural consumer credit mechanism	CF4	Rural customers are treated fairly by formal credit providers.
Perceived rural consumer credit mechanism	CF5	Overall, the local formal credit system provides accessible and workable services for rural residents.

Note: The wording above is reproduced from the supplied English questionnaire and was checked against the supplied Chinese version for semantic alignment. The available study records do not document the original expert review, pilot testing, translation or back-translation procedures.

Appendix B HTMT bootstrap confidence intervals

Table B1 reports HTMT estimates and percentile 95 percent confidence intervals from 1,000 nonparametric bootstrap samples.

Table B1. HTMT estimates and bootstrap confidence intervals

Construct pair	HTMT	95% CI lower	95% CI upper
AT-SN	0.276	0.169	0.376
AT-PBC	0.199	0.114	0.305
AT-BI	0.358	0.262	0.456
AT-BH	0.406	0.301	0.497
AT-CF	0.463	0.380	0.541
SN-PBC	0.296	0.201	0.400
SN-BI	0.445	0.350	0.537
SN-BH	0.398	0.293	0.502
SN-CF	0.463	0.367	0.556
PBC-BI	0.401	0.307	0.489
PBC-BH	0.409	0.289	0.516
PBC-CF	0.434	0.339	0.528
BI-BH	0.462	0.362	0.558
BI-CF	0.507	0.409	0.595
BH-CF	0.505	0.412	0.589

Note: AT = attitude; SN = subjective norms; PBC = perceived behavioral control; BI = behavioral intention; BH = self-reported consumer credit behavior; CF = perceived rural consumer credit mechanism.