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URBAN–RURAL DIFFERENCES IN RETIREMENT PREPAREDNESS: UNPACKING THE PLANNING–RESOURCES PARADOX IN VIETNAM

Abstract

Purpose: Vietnam's rapid population aging raises pressing questions about household readiness for retirement. This study investigates the extent and sources of rural–urban differences in retirement preparedness, focusing on both behavioral and resource-based dimensions.

Methodology: Using nationally representative data, we analyze two indicators of preparedness: a retirement-planning dedication index and the logarithm of financial assets. Sequential regression models and Blinder–Oaxaca decompositions are employed to separate rural–urban gaps into endowment and coefficient components. Robustness checks include ordered-logit models for planning and an inverse hyperbolic sine wealth-to-income measure for assets.

Results: Urban households hold more financial assets in unconditional comparisons, but this advantage is fully explained by endowment differences and disappears once controls are included. In contrast, rural households exhibit higher planning dedication after accounting for covariates. Decomposition results attribute this rural planning premium primarily to coefficient and interaction effects, suggesting stronger behavioral returns to similar traits in rural settings.

Conclusion: Asset disparities largely reflect compositional differences, while planning gaps stem from behavioral factors. These findings highlight the need for complementary policies that enhance both endowments and behavioral capacities to strengthen retirement preparedness across regions.

Keywords: Financial literacy, rural-urban gaps, retirement planning, Blinder–Oaxaca decomposition, Vietnam

1. *Introduction*

Population aging poses major challenges to retirement security in developing countries, particularly where public pension systems provide limited coverage and private savings are the dominant source of old-age support. Vietnam illustrates these challenges clearly. The country is aging quickly while most households remain modest in wealth and financial literacy. Inequality between rural and urban areas continues to persist (Do, 2017; Nguyen & Rozsa, 2019).

A large body of international research has established that financial literacy strongly predicts retirement planning and wealth accumulation

(Lusardi & Mitchell, 2014). Recent research shows that digital financial inclusion via mobile money, internet banking, and online financial tools can shape households' saving, risk-sharing, and asset accumulation, particularly where formal access is limited (Suri & Jack, 2016; Jack & Suri, 2014; De Mel et al., 2018; Suri, 2017; Demirgüç-Kunt et al., 2022). In Vietnam, financial literacy remains low by international standards, with rural households particularly disadvantaged (Morgan & Trinh, 2020). At the same time, urban households enjoy stronger income and asset endowments, broader access to financial services, and better digital infrastructure (Bui & Imai, 2019). On this basis, one would expect urban households to demonstrate superior retirement planning outcomes.

Yet descriptive patterns suggest a paradox. Despite their relative disadvantages in socioeconomic resources, rural households often report similar or even greater levels of retirement-planning dedication compared to urban households. This echoes broader evidence from inequality studies in Vietnam. While resource endowments (e.g., education, income, assets) explain part of rural–urban disparities, differences in how households translate resources into outcomes are equally important (Tran et al., 2024). This raises a critical question: do rural households' planning advantages arise from unmeasured structural conditions, or from greater efficiency in mobilizing modest resources into retirement preparation?

This article addresses that question by analyzing two retirement planning indicators: (1) a planning-dedication index capturing households' behavioral commitment to retirement preparation, and (2) the natural logarithm of financial assets, which represents the stock of resources available for future retirement. Using sequential regression models, we assess how differences in demographics, income, assets, financial inclusion, and digital connectivity explain the observed urban–rural gaps. To move beyond mean differences, we apply the Blinder–Oaxaca decomposition, which partitions gaps into endowment effects (explained by differences in characteristics) and coefficient effects (differences in the returns to those characteristics). This dual-outcome, decomposition-based strategy provides new evidence on how resource advantages and behavioral efficiency interact in shaping retirement preparedness.

Our contribution is threefold. First, we document a planning–resources paradox. Despite fewer resources, rural households exhibit stronger retirement-planning dedication, and this rural advantage is driven primarily by coefficient and interaction effects rather than endowments, a pattern robust to ordered-logit specifications. Second, we extend Vietnamese inequality research, typically centered on income or expenditure, into retirement preparedness by jointly analyzing planning behavior and financial assets. We show that urban households' advantage in financial assets is explained largely by endowment differences (e.g., education, income, and financial inclusion). Third, we deliver policy-relevant guidance by distinguishing the levers behind each gap. Asset disparities call for endowment-enhancing policies (education, financial and digital inclusion), while the planning gap points to improving the translation of existing resources into effective planning through interventions that strengthen behavioral returns to endowments.

The next section provides a brief review of the literature. Section 3 outlines the study's data and methodology. Section 4 presents the main results and discusses their implications. Section 5 concludes and offers policy recommendations and directions for future research.

2. Literature review

2.1 Financial literacy and retirement financial preparation

A substantial body of research documents a strong association between financial knowledge, retirement planning behavior, and long-term wealth accumulation (Marcelin & Sun, 2025). Synthesizing theory and evidence, Lusardi and Mitchell (2014) argue that financial knowledge operates like human capital. It lowers information and transaction costs, improves portfolio choice, and raises lifetime welfare. Across many countries, higher literacy is strongly associated with planning and saving for retirement (Lusardi & Mitchell, 2014). In the United States, individuals with greater literacy are much more likely to plan and to hold retirement wealth, controlling for demographics and income (Lusardi & Mitchell, 2011). Evidence outside advanced economies is consistent with this link but highlights implementation frictions (Hu et al., 2025). Evidence from India and Indonesia suggests that financial education alone has limited effectiveness, and that its impact increases substantially when coupled with access or incentive-based interventions, point-

ing to complementarities between knowledge and financial inclusion (Cole et al., 2011). This knowledge-planning-savings channel underpins our use of both a behavioral outcome (planning dedication) and a resource outcome (log financial assets).

2.2 Financial inclusion and digital channels

Worldwide, urban residents exhibit systematically higher access to formal financial accounts, payment systems, and savings products than their rural counterparts (Klapper et al., 2025). Distance, documentation, and cost barriers are more binding in rural settings (Johnen et al., 2025). Global Findex overviews emphasize these structural frictions and the role of inclusion in poverty reduction and household resilience (Klapper et al., 2018). Digital finance can relax these frictions. For instance, studies of mobile money adoption in Kenya demonstrate reductions in extreme poverty and improved consumption smoothing, highlighting how lowcost digital payment rails facilitate greater saving capacity and informal risk sharing (Suri & Jack, 2016). These findings motivate our focus on inclusion variables (bank account, savings account, cards, internet banking) and digital proxies (internet use, online shopping, apps) as potential mediators of urban–rural gaps in both planning and assets.

2.3 Behavioral frictions and translation from resources to action

Even in the presence of adequate resources and access to financial services, households frequently exhibit undersaving behavior driven by inertia, present bias, and limited attention (Demirgüç-Kunt et al., 2022; De Beckker et al., 2025). For example, the "Save More Tomorrow" program shows that aligning contribution increases with pay raises dramatically boosts participation and contribution rates, demonstrating that small design tweaks can convert intentions into sustained saving (Thaler & Benartzi, 2004). This literature motivates modeling heterogeneity not only in endowments, such as income, education, and account ownership, but also in how effectively different groups translate resources and access into financial planning and asset accumulation, potentially through distinct behavioral or institutional environments (Zhuang & Yang, 2025).

2.4 Urban–rural differences in developing country contexts

Global and Vietnam-focused work documents sizable urban advantages in education, income, and formal access, yet uneven translation into long-term financial outcomes. Vietnam's policy priority is to expand financial inclusion precisely to bridge rural gaps. Micro evidence from Vietnam shows that higher financial literacy is associated with retirement-related behaviors and advice-seeking among workers, consistent with patterns observed internationally (Do, 2017; Nguyen & Rosza, 2019). Broader evidence from Vietnam indicates that demographic characteristics, income levels, and digital technology use are associated with higher financial literacy and improved financial behaviors, underscoring the importance of both resources and digital channels (Pham & Le, 2023). These strands support our inclusion of literacy, inclusion, and digital use blocks. They also support our expectation that rural households may sometimes display efficient use of limited resources in planning.

Multiple studies analyze urban–rural economic divides in Vietnam. Bui and Imai (2019) use unconditional quantile regression and decomposition techniques to show that education and remittances reduce inequality but structural differences remain. Similarly, Le & Booth (2014) replicated this finding using the Oaxaca–Blinder decomposition and found that half of the expenditure gap is explained by compositional differences, while the remaining unexplained structural intercept favors urban households.

2.5 Methodological grounding with Blinder–Oaxaca

The Blinder–Oaxaca decomposition partitions mean gaps into endowments (group differences in covariates) and coefficients (differences in returns to those covariates), with an interaction term capturing simultaneous shifts. Originally developed for wage differentials, it is now standard in decomposing group outcome gaps where both composition and structural responses may differ (Blinder, 1973; Jann, 2008). Applying this framework to planning and financial assets allows us to test whether the urban–rural disparity is mostly about resources (education, income, inclusion) or about how those resources translate into behavior and wealth. The Oaxaca–Blinder decomposition is also used to examine disparities within rural Vietnam. Son et al. (2024) show that disparities in characteristics including education, land holdings, and household composition explain much of the income differential between Kinh and non-Kinh groups, whereas the unexplained portion suggests the presence of deeper structural inequality.

Overall, the literature suggests that financial literacy promotes planning and saving, inclusion and digital rails strengthen these links, and behavioral frictions often constrain the conversion of resources into action (Yadav et al., 2025). These facts guide our empirical strategy. Accordingly, we first estimate reduced-form urban–rural gaps. We then add blocks of covariates such as demographics, human capital and income, wealth, financial inclusion, and digital connectivity to track how those gaps attenuate. For robustness, we fit an ordered model for the ordinal planning index and re-estimate using a scale-free outcome (wealth-to-income). Finally, we use the Blinder–Oaxaca decomposition to allocate any remaining gap to differences in endowments versus differences in returns. This structure is directly aligned with the international evidence while tailoring mechanisms to Vietnam's rapid digitalization and evolving inclusion agenda.

3. Data and methodology

3.1 Data collection

The data for this study were obtained from the survey conducted by the Mekong Development Research Institute under the direction of the Asian Development Bank Institute. Data were collected between June and August 2019, using the Viet Nam Household Living Standards Survey (VHLSS) 2018 as the base sample. Two major cities (i.e., Ha Noi and Ho Chi Minh City) were purposely selected, while three additional provinces representing different regions of the country (Bac Ninh in the North, Quang Nam in the Central region, and Dong Thap in the South) were randomly chosen.

Within these areas, enumeration areas from the VHLSS 2018 were randomly selected, and in each enumeration area, approximately 30 households were targeted for interviews. If an original VHLSS household was unavailable, the nearest neighboring household was used as a replacement. In practice, about 50% of the original households could not be traced and were substituted in this way.

Interviews were conducted with the household head, or another member most knowledgeable about household finances, to collect demographic and economic information such as income, debt, and assets. For the sections on fintech adoption and financial literacy, one household member aged 18 or above was randomly selected using dice and household rosters. If the chosen respondent was not available, another adult was randomly selected until one could be interviewed.

Households were classified as rural or urban based on commune-level information. This classification differs from that of Morgan and Trinh (2020), who defined urban households strictly as those residing in Ha Noi or Ho Chi Minh City. Under our approach, households can still be classified as rural if their commune codes indicate so, even when located within major cities. The final sample comprises 1,038 households, with 50.4% residing in rural areas and 49.6% in urban areas.

3.2 Measures

The survey adopts the OECD/INFE questionnaire (OECD, 2018) to measure financial knowledge. The financial knowledge score is based on seven questions covering core concepts such as simple and compound interest, inflation, investment risk, bonds, stocks, and risk diversification. Each correct response is coded as 1, while incorrect responses are coded as 0. The total score ranges from 0 to 7, reflecting the respondent's level of basic financial literacy.

The survey also incorporates indicators of financial inclusion and digital finance use. Respondents were asked whether they hold a bank account, credit card, savings account, or financial investments, and whether they engage in activities such as internet use, online shopping, using financial apps, and internet banking. Additionally, the ability to locate appropriate fintech services was recorded.

Retirement planning is measured by the degree of commitment to achieving long-term financial goals, assessed using a scale from 1 (totally disagree) to 5 (totally agree), based on the question of whether the respondent has set and is trying to achieve long-term financial goals such as retirement planning. The planning-dedication index captures behavioral engagement in retirement preparation. This is responsive to policy, and is naturally modeled on an ordered scale. The log of financial assets represents the stock of resources that finances retirement, improves comparability by reducing skew, and yields coefficients interpretable as percentage effects. Together, these variables separate activation (behavior) from capacity (resources), allowing us to test whether effort translates into accumulation and decompose urban–rural gaps into endowments versus returns.

Finally, the dataset includes a wide range of demographic and socioeconomic characteristics that may influence financial literacy, such as gender, age, marital status, household size, education group, occupation, urban–rural residence, income, financial and physical assets, housing or land, total assets, liabilities, and saving methods.

3.3 Descriptive gap analysis

Table 1 presents two-sample t-tests (and Pearson χ^2 tests for proportions) comparing survey variables between rural and urban respondents. Urban and rural samples are demographically similar: gender and age distributions are nearly identical, household size is slightly smaller in cities, and marriage rates modestly lower. Human capital gaps are substantial—urban residents average 3.2 more years of schooling, are over three times likelier to hold university degrees, and twice as likely to work in finance or business. Economic resources differ sharply: urban income is about 85% higher, and asset disparities are even larger, with urban households holding roughly 2.8 times the total assets, five times the financial assets, and over three times the housing value of rural households. Only physical assets are higher in rural areas, reflecting a more tangible asset mix. Financial access and digital engagement are far greater in urban areas across banking, credit, savings, investments, internet use, and online transactions, though fintech finding ability does not differ significantly. Financial knowledge is also higher among urban respondents. Despite these advantages, the retirement-planning dedication score is statistically similar between urban and rural residents.

Table 1 Descriptive gap analysis

	Urban		Rural		Difference	t-test p-value
Variable	**Mean**	**Std. dev.**	**Mean**	**Std. dev.**		
male	0.48	0.50	0.49	0.50	-0.01	0.75
female	0.52	0.50	0.51	0.50	0.01	0.75
age	46.87	15.41	46.65	13.41	0.22	0.81
household member number	3.93	1.67	4.11	1.67	-0.18	0.08
married	0.53	0.50	0.60	0.49	-0.06	0.04
financial or business occupation	0.13	0.33	0.06	0.24	0.07	0.00
university education	0.37	0.48	0.10	0.30	0.26	0.00
vocational school education	0.02	0.15	0.03	0.16	0.00	0.72
secondary school education	0.43	0.50	0.52	0.50	-0.09	0.00
primary school education	0.11	0.31	0.25	0.43	-0.14	0.00
no formal education	0.07	0.26	0.10	0.30	-0.03	0.09
year of education	10.91	4.83	7.72	4.33	3.19	0.00
income	208.52	134.83	112.95	91.37	95.56	0.00
financial asset	168.67	598.85	33.29	201.00	135.38	0.00
housing or land	2937.11	3985.79	869.19	2994.73	2067.92	0.00
physical asset	154.41	286.56	246.99	600.94	-92.57	0.01
total asset	2512.37	3941.93	905.70	2704.69	1606.68	0.00
saving methods	1.06	1.25	0.70	0.99	0.36	0.00
bank_account	0.57	0.50	0.26	0.44	0.30	0.00
creditcard	0.40	0.49	0.16	0.37	0.24	0.00
savings account	0.27	0.44	0.11	0.31	0.16	0.00
financial investment	0.03	0.17	0.01	0.09	0.02	0.01
internet user	0.80	0.40	0.42	0.49	0.38	0.00
online shopping	0.43	0.50	0.18	0.38	0.26	0.00
financial apps using	0.09	0.29	0.03	0.18	0.06	0.00
internet banking user	0.28	0.45	0.05	0.22	0.23	0.00
fintech finding ability	0.03	0.16	0.02	0.12	0.01	0.19
financial knowledge	4.77	1.33	4.07	1.39	0.70	0.00
planning_dedication	3.84	1.27	3.95	1.39	-0.11	0.18

Source: Authors' compilation

The results point to a structural urban advantage. Urban households exhibit higher levels of schooling, income, and both liquid and real-estate wealth, alongside markedly greater access to formal and digital financial services. These advantages coincide with higher financial knowledge. This is consistent with the view that exposure and resources may foster literacy. Asset composition also differs by location. Rural households hold more physical assets but fewer financial and housing assets, implying distinct portfolios that may shape saving methods and the relevance of specific financial products. A pronounced digital divide is evident. Large gaps in internet use and fintech adoption are consistent with infrastructural or skills constraints in rural areas. The only exception is the absence of a significant difference in fintech finding ability, indicating a uniformly low capability to navigate fintech services across locations. In sum, the descriptive evidence establishes a paradox. Despite sizeable differences in socioeconomic endowments, financial inclusion, and digital access, rural households are not less likely to engage in retirement planning and may exhibit marginally greater dedication once they do so.

Given the focus of this research, the baseline multivariate specification will prioritize resourcebased covariates (e.g., education, income, assets, financial inclusion, and digital access) as potential mediators of planning disparities. The initial model regresses each outcome on an urban dummy only. Sequential blocks of covariates are then added to observe attenuation. Finally, the Blinder–Oaxaca decomposition partitions the urban–rural gap into endowment and coefficient components, testing whether rural households' parity in retirement planning is explained by equal effectiveness of fewer resources, or by other unobserved mechanisms.

3.4 Correlation patterns and econometric justification

Table 2 presents Pearson correlations among planning dedication, financial knowledge, ln(financial assets), and a rural indicator.

Table 2 Pearson correlation among main explanatory variables

	Planning dedication	ln Financial asset	Financial knowledge	Rural
Planning dedication	1			
ln Financial asset	0.0613	1		
Financial knowledge	0.0679	0.2345	1	
Rural	0.0547	-0.5038	-0.3396	1

Source: Authors' compilation

Planning dedication is only *weakly* related to resources and literacy: its correlations with ln(financial assets) and financial knowledge are small (r = 0.061 and r = 0.068, respectively). Likewise, the correlation between planning dedication and rural is positive but very small (r = 0.055). These near-zero associations are consistent with the earlier mean comparison showing no statistically significant urban-rural gap in planning dedication. Resources and literacy comove. The log of financial assets and financial knowledge are positively correlated (r = 0.235), indicating that households with greater financial wealth tend to score higher on knowledge. Place of residence is strongly linked to resources and knowledge. Rural correlates negatively with ln(financial assets) (r = −0.504) and with financial knowledge (r = −0.340), reaffirming the large urban advantages documented in the descriptives.

In sum, the correlation evidence is fully consistent with the earlier descriptive narrative. Urban respondents possess greater resources and literacy, but these do not predict stronger planning dedication. This motivates a modeling strategy that isolates mediating mechanisms and formally tests whether rural households achieve equivalent or greater planning depth despite resource deficits.

3.5 Econometric strategy

Our empirical strategy proceeds in three stages, designed to explain the paradox whereby urban households enjoy substantially greater socioeconomic resources yet do not exhibit stronger retirement-planning dedication. We consider two

outcome variables: (1) the continuous planning-dedication index, and (2) the natural logarithm of financial assets, which captures financial resources available for future retirement.

We begin with parsimonious models in which each outcome is regressed solely on an indicator for urban residence. This establishes the unconditional urban–rural gap and provides a benchmark for assessing the explanatory power of covariates.

To explore mechanisms underlying the gap, we introduce blocks of explanatory variables in a stepwise manner. First, demographic controls such as age, sex, marital status, household size, and occupation type ensure that urban–rural differences are not driven by compositional factors. Next, human capital and income indicators, including years of education, university attainment, household income, and logged income, capture resource endowments that descriptive evidence shows to be higher in urban areas. We then add wealth and assets (e.g., financial assets, housing or land, physical assets, and the asset-range index) to test whether accumulated stock variables explain differences in retirement preparation. Financial inclusion, measured by bank-account ownership, savings accounts, credit cards, internet banking, saving methods, and financial investments, reflects access to the formal financial system where urban advantages are most pronounced. Finally, digital connectivity, encompassing internet use, online shopping, app usage, financial apps, and fintech-finding ability, measures access to technological channels through which planning may occur. By tracing changes in the urban coefficient across specifications, we test whether rural parity or advantage in planning dedication persists after accounting for differential endowments and mediating channels.

After that, several robustness checks will be undertaken. For planning dedication, which is measured on an ordinal 1–5 scale, we re-estimate using an ordered logit model to account for the bounded and ordinal nature of the index. For financial assets, we verify results using alternative normalizations such as wealth-to-income ratios to account for scale effects.

The Blinder–Oaxaca decomposition is applied to formally partition the observed urban–rural gap into an endowment effect, reflecting differences in mean covariates such as education, assets, or knowledge, and a coefficient effect, capturing differences in the returns to those covariates. This decomposition directly addresses whether rural households' comparable or higher planning dedication reflects compensatory efficiency in resource use or unobserved mechanisms beyond measured endowments.

4. Results and discussions

4.1 Planning dedication

Below we synthesize the multivariate associations with retirement-planning dedication. Results with robust standard errors are reported in Table 3. Across all models, the rural indicator is positive and becomes larger as controls are added ($\beta = 0.215^{**}$ in column 1 to 0.365^{***} in column 5). Thus, once differences in resources and access are held constant, rural respondents report higher planning dedication. In other words, the urban advantage in endowments partly masks a rural advantage in dedication. Turning to resources and knowledge, financial knowledge is a stable, positive correlate of planning dedication ($\beta = 0.148^{***}$ in column 1; 0.080–0.112 in columns 2–5), although its size attenuates when resource controls enter. Within resources, accumulated wealth matters more than current cash flow: log total assets are positively associated with dedication (≈ 0.054–0.058^{**}), whereas log income is small and insignificant (≈ 0.064–0.103, nonsignificant).

Finally, we consider financial inclusion and digital variables. Most account-ownership and fintech indicators are insignificant once other factors are included. The main exception is online shopping, which is consistently and positively related to planning dedication ($\beta = 0.246^{**}$ in column 3; 0.326^{**} in column 5). Moreover, the interactive term between knowledge and online shopping is negative (-0.144^{*}, column 4), suggesting that online engagement and knowledge partly substitute. Online shopping is more strongly associated with planning among lowerknowledge respondents, while its incremental association diminishes at higher knowledge levels.

Table 3 Regression results for planning dedication

	(1)	(2)	(3)	(4)	(5)
VARIABLES	**planning_ dedication**	**planning_ dedication**	**planning_ dedication**	**planning_ dedication**	**planning_ dedication**
fknowledge	0.148***	0.0957***	0.0794**	0.112**	0.0804**
	(0.0316)	(0.0362)	(0.0379)	(0.0446)	(0.0379)
rural	0.215**	0.279**	0.304***	0.306***	0.365***
	(0.0842)	(0.109)	(0.113)	(0.113)	(0.138)
lnincome		0.103	0.0660	0.0646	0.0686
		(0.0810)	(0.0836)	(0.0833)	(0.0837)
lntotal_asset		0.0541**	0.0574**	0.0578**	0.0577**
		(0.0270)	(0.0269)	(0.0268)	(0.0269)
bank_account			0.190	0.177	0.191
			(0.129)	(0.130)	(0.129)
creditcard			0.0567	0.0649	0.0557
			(0.137)	(0.138)	(0.137)
savings_account			-0.0444	-0.0450	-0.0568
			(0.114)	(0.114)	(0.114)
internet_user			-0.114	-0.129	-0.0971
			(0.123)	(0.124)	(0.124)
online_shopping			0.246**	0.932**	0.326**
			(0.105)	(0.379)	(0.135)
financial_app_using			0.0144	0.0171	0.000530
			(0.176)	(0.174)	(0.176)
internet_banking_user			-0.104	-0.0718	-0.122
			(0.142)	(0.142)	(0.143)
fknowledge_x_online_ shopping				-0.144*	
				(0.0740)	
rural_x_online_shopping					-0.193
					(0.191)
Constant	3.130***	3.086***	3.189***	3.059***	3.128***
	(0.168)	(0.429)	(0.435)	(0.447)	(0.447)
Observations	1,038	826	826	826	826
R-squared	0.025	0.040	0.050	0.054	0.051

Note: Robust standard errors in parentheses. Controls for demographics included but not shown.
*** p < 0.01, ** p < 0.05, * p < 0.1.
Source: Authors' compilation

Model fit is modest (R^2 = 0.025–0.054), as is typical for attitudinal indices. Still, the message is clear. Despite sizable shortfalls in resources, financial inclusion, and digital access, rural households exhibit equal or, conditional on observables, greater retirement-planning dedication[1].

1 The ordered logit robustness checks confirm the central findings (to be provided upon request).

The results show that knowledge and assets contribute, but a large part of the variation in dedication remains unexplained. This is consistent with the idea that unobserved motivations or social norms, especially in rural areas, play an important role. Both the linear and ordered logit models point to a rural advantage in planning dedication. This advantage holds across different functional forms and sets of controls. The persistence of the rural coefficient motivates the use of the Blinder–Oaxaca decomposition. This approach separates the observed gap into endowment and coefficient components. It allows us to assess whether rural households achieve greater planning depth because they use fewer resources more efficiently or because of unobserved factors beyond measured endowments.

4.2 Financial resources for retirement

Table 4 reports OLS regressions of the natural logarithm of financial assets on rural residence, financial knowledge, and successive blocks of covariates (robust standard errors).

Column 1 includes financial knowledge and rural. Column 2 adds income, total assets, and demographics. Columns 3 to 5 add financial inclusion and digital variables, with interactions in columns 4 and 5. Model fit improves from $R^2 = 0.071$ in the baseline to $R^2 \approx 0.388$ with the full set of controls.

The rural coefficient is large and negative in the baseline (–0.876, $p < 0.01$). However, once income, total assets, and demographics are included, it becomes small and statistically insignificant (–0.118 in column 2) and remains insignificant thereafter, even turning modestly positive (0.084–0.180 in columns 3–5). Hence, the apparent rural shortfall in financial assets is fully accounted for by observed covariates.

Income and total wealth are the dominant correlates. A 1% increase in income is associated with about 0.66–0.79% higher financial assets ($p < 0.01$), and a 1% increase in total assets with about 0.28 to 0.33% higher financial assets ($p < 0.01$). Financial knowledge is strongly positive in the sparse model (0.221, $p < 0.01$), but becomes small and insignificant once resources enter. This suggests that the connection between knowledge and assets operates mainly through income and wealth.

Having a savings account is very strongly associated with higher financial assets (≈1.88–1.90, $p < 0.01$), and being an internet-banking user is also positive (≈0.54–0.60, $p < 0.05$). By contrast, bank-account ownership, credit cards, internet use, online shopping, and financial-app use are not robust predictors once resources are controlled. The two interaction terms (i.e., knowledge × online shopping and rural × online shopping) are insignificant.

Table 4 Regression results for financial assets as a retirement source

	(1)	(2)	(3)	(4)	(5)
VARIABLES	**lnfin_asset**	**lnfin_asset**	**lnfin_asset**	**lnfin_asset**	**lnfin_asset**
fknowledge	0.221***	0.0421	0.0228	0.0401	0.0249
	(0.0459)	(0.0522)	(0.0475)	(0.0504)	(0.0475)
rural	-0.876***	-0.118	0.0838	0.0849	0.180
	(0.149)	(0.168)	(0.166)	(0.166)	(0.188)
lnincome		0.790***	0.661***	0.659***	0.665***
		(0.108)	(0.106)	(0.106)	(0.106)
lntotal_asset		0.334***	0.279***	0.280***	0.280***
		(0.0371)	(0.0350)	(0.0351)	(0.0351)
bank_account			-0.228	-0.234	-0.228
			(0.227)	(0.227)	(0.227)
creditcard			-0.0925	-0.0889	-0.0921
			(0.246)	(0.246)	(0.246)
savings_account			1.900***	1.902***	1.879***

	(1)	(2)	(3)	(4)	(5)
VARIABLES	**lnfin_asset**	**lnfin_asset**	**lnfin_asset**	**lnfin_asset**	**lnfin_asset**
			(0.224)	(0.225)	(0.227)
internet_user			-0.00422	-0.0126	0.0205
			(0.172)	(0.172)	(0.172)
online_shopping			0.226	0.610	0.367
			(0.199)	(0.612)	(0.261)
financial_app_using			-0.0443	-0.0377	-0.0702
			(0.380)	(0.380)	(0.381)
internet_banking_user			0.576**	0.596**	0.540*
			(0.283)	(0.286)	(0.288)
fknowledge_x_online_shop-ping				-0.0814	
				(0.126)	
rural_x_online_shopping					-0.314
					(0.331)
Constant	0.963***	-3.504***	-3.074***	-3.140***	-3.165***
	(0.240)	(0.562)	(0.547)	(0.547)	(0.556)
Observations	933	765	765	765	765
R-squared	0.071	0.290	0.387	0.387	0.388

Note: Robust standard errors in parentheses. Controls for demographics included but not shown.
*** p < 0.01, ** p < 0.05, * p < 0.1.
Source: Authors' compilation

The results imply that after conditioning on income, total wealth, and access to formal savings channels, there is no residual rural penalty in financial assets. The location gap observed in bivariate comparisons reflects compositional differences (e.g., income, overall wealth, and formal savings) rather than an independent rural effect[2].

4.3 Comparison of planning dedication and financial resources

Contrasting the two retirement planning indicators yields a clear divergence. In the planningdedication models, the rural indicator is positive and statistically significant in every specification, indicating higher reported dedication among rural households after adjusting for education, income, total assets, financial inclusion, and digital access. Financial knowledge remains a meaningful though attenuated correlate of dedication. Online shopping is positively associated, and the negative knowledge × online-shopping interaction suggests partial substitution. Other inclusion/digital indicators are not robust.

By contrast, in the financial-asset models, the initial rural shortfall is large and significant in the baseline but becomes statistically insignificant once income, total assets, and demographics are included, and remains insignificant after adding financial-inclusion and digital variables, or even turns modestly positive. The wealth-to-income normalization ln(W/I) leads to the same conclusion. The rural coefficient declines from negative and significant to smaller and indistinguishable from zero in the fully specified models, confirming that any gap is explained by observable endowments. Income and total wealth dominate as predictors of financial assets, and savings-account ownership is strongly positive. Neither financial knowledge nor most digital vari-

2 We re-estimated the financial-preparedness model using the log of the financial-asset-to-income ratio as the dependent variable, normalizing for income scale, and obtained similar results.

ables are robust once resources are held constant. Model-fit patterns reinforce the contrast. Covariates explain only about 2.5–5.4% of the variance in planning dedication but roughly 29–39% for financial assets and about 19–30% for ln(W/I).

In short, rural households report higher planning dedication, while the apparent deficit in financial assets largely vanishes after accounting for income, overall wealth, and formal savings channels. This motivates the Blinder–Oaxaca decomposition to assess whether observed urban–rural differences arise from endowments or from how endowments translate into planning and asset accumulation.

4.4 Decomposition

4.4.1 Planning dedication

Using the Blinder–Oaxaca decomposition of the planning-dedication index (Table 5), the raw urban–rural difference is small and statistically insignificant (urban – rural = –0.129, p = 0.161). Due to differences in the observed endowments, the explained component is also small and insignificant (0.069, p = 0.519). By contrast, the unexplained component (i.e., differences in coefficients) is negative and marginal (–0.300, p = 0.057). Though only at the 10% level, it suggests that the same characteristics translate into higher planning dedication among rural households than among otherwise similar urban households. The interaction term is small and insignificant (0.102, p = 0.529).

At the variable level, two patterns stand out. First, given rural returns, urban households' greater use of internet banking would actually reduce dedication (endowment contribution –0.221, p = 0.007). However, differences in the effects of internet banking and the joint term pull in the opposite direction (coefficient +0.046, p = 0.015; interaction +0.253, p = 0.006). Second, higher total assets among urban households modestly widen the urban advantage via endowments (+0.088, p = 0.052), though coefficient and interaction terms for assets offset this mechanically (–0.388, p = 0.251; –0.060, p = 0.258). Contributions from online shopping, financial knowledge, and bank-account ownership are small and not statistically different from zero.

Taken together, the results indicate that superior endowments do not explain the rural edge in planning dedication. Rather, differences in how characteristics map into dedication play a larger role, albeit with only borderline evidence at the aggregate, unexplained level. In practice, urban households possess stronger structural advantages. Still, these advantages do not translate into planning outcomes as effectively as they do for rural households.

Table 5 Blinder–Oaxaca decomposition of the urban–rural gap in planning dedication

Panel A. Overall decomposition (urban – rural; robust SEs)						
Component	**Coefficient**	**Std. err.**	**z**		**p-value**	
Urban mean	3.908	0.064	60.77		< 0.001	
Rural mean	4.037	0.065	61.67		< 0.001	
Difference (U – R)	**–0.129**	0.092	–1.40		0.161	
Explained by endowments	0.069	0.108	0.64		0.519	
Coefficients (unexplained)	**–0.300**	0.158	–1.90		0.057	
Interaction	0.102	0.163	0.63		0.529	
Panel B. Selected variable-level contributions (contribution to urban – rural gap; robust SEs)						
Variable	**Endowments**	**p**	**Coefficients**	**p**	**Interaction**	**p**
Total assets (log)	**0.088**	0.052	–0.388	0.251	–0.060	0.258
Internet banking user	**–0.221**	**0.007**	**0.046**	**0.015**	**0.253**	**0.006**
Online shopping	0.141	0.398	0.158	0.339	0.205	0.34
Financial knowledge	0.061	0.139	0.248	0.523	0.04	0.524
Bank account	0.064	0.301	–0.024	0.75	–0.026	0.75

Note: The gap is defined as mean(planning dedication | urban) minus mean(planning dedication | rural); a negative value indicates higher levels of dedication among rural households. Robust standard errors reported.
Significance: *** p < 0.01, ** p < 0.05, * p < 0.10.
Source: Authors' compilation

4.4.2 Financial resources for retirement

The Blinder–Oaxaca decomposition of the urban–rural gap in log financial assets shows a large urban–rural gap of 1.168 log points ($p < 0.001$) (Table 6). This implies urban households hold roughly 3.2 times the financial assets of rural households ($e^{1.168} \approx 3.215$). About three-quarters of this difference is explained by endowments (0.865, $p < 0.001$), with an additional positive interaction (1.026, $p < 0.001$) and a negative coefficient component (–0.722, $p < 0.001$) that partially offsets the gap.

Composition effects are dominated by income (+0.338*), total assets (+0.267*), and savings-account ownership (+0.156**), which together account for most of the explained gap. At the returns stage, the income coefficient further widens the gap (+2.191**), while financial-app use narrows it (–0.056**). Interaction terms reinforce these patterns: income (+0.327**), savings-account ownership (+0.242*), and internet use (+0.469*) all add to the urban advantage, whereas financial-app use reduces it (–0.131**). Household size contributes only weakly and mainly through composition (+0.059*).

Overall, the urban lead in financial assets is driven primarily by compositional advantages (i.e., higher income, greater overall wealth, and more formal savings) augmented by differences in how these characteristics translate into asset holdings.

Table 6 Blinder–Oaxaca decomposition of the urban–rural gap in ln(financial assets)

Panel A. Overall decomposition (robust SEs)				
Component	**Estimate**	**Std. err.**	**z**	**p-value**
Urban mean	2.254	0.147	15.36	< 0.001
Rural mean	1.086	0.093	11.71	< 0.001
Difference (U – R)	**1.168**	0.174	6.73	< 0.001
Explained by endowments	**0.865**	0.18	4.8	< 0.001
Coefficients (unexplained)	**–0.722**	0.186	–3.88	< 0.001
Interaction	**1.026**	0.229	4.47	< 0.001
Panel B. Selected variable-level contributions to the gap (Urban – Rural)				
Variable	**Endowments**	**Coefficients**	**Interaction**	**Note**
ln income	**+0.338***	**+2.191 ****	**+0.327 ****	Income strongly widens the gap via composition and returns.
ln total assets	**+0.267***	–0.423	–0.062	Composition widens, returns/interaction offset.
Savings account	**+0.156 ****	**+0.181***	**+0.242***	Formal savings strongly widen the gap through all channels.
Internet user	**-0.159 ****	**+0.568***	**+0.469***	Rural shortfall in use narrows the gap, but returns and interaction widen it.
Financial-app use	+0.085*	**-0.056 ****	**-0.131 ****	Small composition effect; returns/interaction reduce the gap.
Household size	0.059*	–0.166	0.012	Weak, mostly compositional.

Note: The gap is defined as mean(ln(financial assets) | urban) minus mean(ln(financial assets) | rural); a negative value indicates higher ln(financial assets) among rural households.
Significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.
Share of the gap: Endowments ≈ 74%, Coefficients ≈ –62%, Interaction ≈ 88% (summing to 100%).
Source: Authors' compilation

4.4.3 Comparative interpretation

Blinder–Oaxaca comparisons point to a sharp divergence across outcomes. For planning dedication, the raw urban–rural difference is small and not significant, and differences in the observed characteristics explain little of the gap. The coefficient component is negative and marginally significant, indicating that the same characteristics tend to be associated with higher dedication in rural areas. Variable-level results show a nuanced role for internet banking. Urban households' greater use would, given rural returns, reduce dedication (negative endowment), while coefficient and interaction terms push in the opposite direction. For financial assets, the urban advantage is large and highly significant, and about three-quarters is explained by endowments. Coefficient differences partly offset the gap overall, although the income coefficient and interaction terms, especially savings accounts and internet use, still add to the urban lead. Taken together, the decompositions show that rural households convert characteristics into planning dedication more effectively. Yet they hold fewer financial assets for retirement planning primarily because they possess fewer asset-enhancing endowments.

5. Conclusion

This study examines an urban–rural paradox: urban households have stronger socio-economic endowments yet do not show greater retirement-planning dedication. Using nationally representative survey data, sequential regressions, and Blinder–Oaxaca decompositions, we analyze a planning-dedication index and log financial assets. We find a large unconditional urban advantage in financial assets, driven mainly by endowments and a positive interaction term (higher income, greater wealth, and more formal savings), partly offset by a negative coefficient component; once these factors are controlled, the rural coefficient becomes statistically insignificant. In contrast, after adjusting for education, income, wealth, financial inclusion, and digital access, rural households exhibit higher planning dedication. For dedication, endowments explain little, while the (negative, marginally significant) coefficient component suggests that the same characteristics translate into greater planning effort in rural areas than in urban areas.

Our findings extend the retirement-planning and financial-inclusion literature. In high-income contexts, income, education, formal access, and planning are strongly linked (Ingale & Paluri, 2025), while evidence from developing countries suggests that rural and informal households may plan actively despite limited resources, shaped by informal institutions and local norms (Prasad et al., 2025). Consistent with this, rural households show greater planning dedication after controls, and the Oaxaca decomposition indicates that endowments explain little of the urban–rural gap, whereas the coefficient component is negative and marginally significant. This implies the same characteristics yield more planning dedication in rural areas. For financial assets, endowments dominate: the urban asset advantage is large, with roughly three-quarters explained by higher income, greater wealth, and more formal savings, reinforced by interaction effects (notably savings-account ownership and internet use), while a negative coefficient component partially offsets the gap. The income coefficient contributes positively but only at borderline significance. Overall, the asset gap is primarily compositional rather than preferencedriven (Qian et al., 2024), while rural households appear to translate given characteristics into planning dedication more effectively.

These findings have clear policy implications. The urban–rural financial-asset gap is largely compositional, reflecting higher income, greater wealth, and wider participation in basic savings accounts in cities. Policy should therefore focus on expanding endowments and deepening inclusion: raising earnings, supporting wealth-building, and scaling simple, low-fee accounts that draw households into formal savings. Improving digital rails, such as reliable internet access and easy-to-use banking interfaces, can reinforce these efforts, with the evidence favoring straightforward savings products over complex, feature-heavy apps.

Planning results point to a different lever. After controls, rural households show higher planning dedication, while urban households do not convert stronger resources into stronger planning. In urban areas, low-cost behavioral tools should complement resource provision, including automatic enrollment and escalation in voluntary pension schemes, default saving rules, timely reminders, and goal-based planning interfaces (Nutsubidze & Nutsubidze, 2024). These nudges can be delivered through existing digital touchpoints; for instance, e-commerce engagement is positively associated with planning in our data, even though most fin-

tech indicators are not independently robust. Overall, policy should combine endowment-building and inclusion to narrow the asset gap, especially in rural areas.

While informative, this study has several limitations. First, the rural advantage in planning dedication is driven mainly by coefficient differences that are marginally significant, possibly reflecting unobserved behavioral or institutional factors. Second, the cross-sectional design is descriptive rather than causal, so we cannot assess whether the rural planning advantage persists over time. Finally, external validity is limited because rural–urban institutions, pension systems, and digital infrastructure vary across settings, so replication in other low- and middle-income contexts is needed.

Future research should address several gaps highlighted by our limitations. First, to explain the rural–urban differences in the returns to observed characteristics, studies should incorporate richer measures of preferences and institutions such as social norms, trust, and time preferences, as well as complement survey models with qualitative evidence. Second, longitudinal data are needed to assess whether the rural planning advantage persists over time and to evaluate whether changes in income, wealth, financial inclusion, or digital access translate into subsequent shifts in planning and asset accumulation. Lastly, future work should also mitigate mechanical links between inclusion variables and asset outcomes and replace simple digitalaccess dummies with indicators of usage intensity and quality.

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