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Mongi Tshaka *, Munacinga Simatele, James Copestake

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Article

Beyond Financial Market Dualism: An Empirical Analysis of Variations in Use of Financial Services in South Africa

Mongi Tshaka [1,*], Munacinga Simatele [1] and James Copestake [2]

[1] University of Fort Hare

[2] University of Bath; hssjgc@bath.ac.uk

* Correspondence: mtshaka@ufh.ac.za

Abstract

This paper empirically analyses variation in use of formally-, semi-formally-, and informally regulated finance using the South African National Income Dynamics Study longitudinal data. The logistic regressions indicate that many individuals use a combination of services across all levels of regulation depending on age, gender, education, population group, religiosity, and social trust. Widespread use of informally regulated finance in South Africa is particularly evident on the savings side through savings groups/stokvels. The originality of the paper lies in its use of nationally representative longitudinal data to disentangle and analyze the variations in the use of different financial mechanisms, moving beyond the conventional formal-informal dichotomy. In doing so, it contributes to ongoing debates on financial inclusion by demonstrating that informally regulated finance represents a rational, adaptive response to the limitations of formally regulated services rather than a residual or inferior alternative. Depicting the market as dualistic is therefore misleading, there being a need for more nuanced understanding and official recognition of the drivers of financial services' use.

Keywords: informally regulated finance; semi-formally regulated finance; formally regulated finance; South Africa

1. Introduction

Financial inclusion in Sub-Saharan Africa has made significant strides since the financial sector reforms of the 1990s, with account ownership increasing from 23.2% in 2011 to 42.6% in 2017 (Simatele, 2021). Despite this progress, informal financial systems remain vibrant, serving over 50% of the region's adult population (Shuaib, 2018). In South Africa, where formal financial inclusion reached 80% in 2018, informally regulated savings mechanisms like stokvels continue to thrive, with usage increasing by 6% between 2018 and 2019 (Mashigo, 2020). This paradox-where improved access to formally regulated financial services coincides with increased use of informally regulated financial mechanisms-forms the central focus of this study.

Traditional financial theories, such as the McKinnon-Shaw hypothesis and Stiglitz and Weiss's imperfect information theory, attribute the reliance on informally regulated finance to formal financial exclusion. These frameworks suggest that low-income and asset-poor individuals and small businesses turn to informally regulated finance due to the inadequacy of formally regulated financial services(Chepkogei Sile & Bett, 2015). However, evidence from South Africa and other developing countries indicates that the use of informally regulated finance extends beyond these excluded groups, encompassing middle- and high-income individuals, as well as those with access to formally regulated finance (Ezzahid & Elouaourti, 2021; Kibuuka, 2006; Nguyen & Canh, 2021a). This raises critical questions about the drivers of the use of informally regulated financial services in the context of increasing formal inclusion.

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South Africa presents a paradoxical financial landscape that makes it a critical case for analysing the dynamics of formally- and informally regulated finance. On the one hand, the country hosts one of the most advanced and regulated banking systems on the African continent, with widespread penetration of formal savings accounts and digital financial services. On the other hand, reliance on informally regulated mechanisms-such as stokvels, burial societies, and informal moneylenders-remains widespread, cutting across income, gender, and social divides. This coexistence is not marginal but central to how South Africans navigate credit, savings, and insurance, raising fundamental questions about the assumptions underpinning financial inclusion policy and the regulation of informally regulated finance.

Despite the prominence of informally regulated finance in South Africa, two important research gaps persist. First, most existing studies rely on cross-sectional or small-scale survey data, which limit the ability to capture the evolving and overlapping use of different forms of finance across different levels of regulation. Second, bulk of existing literature conceptualizes financial behavior through a dualistic lens-formal versus informal-without sufficiently theorizing the complementarities, substitutions, and rational strategies that individuals adopt across regulatory levels. This oversimplification risks misclassifying financial services that possess characteristics of both formal and informal services, leading to inaccurate assessments of usage patterns. A more nuanced understanding is necessary to distinguish the roles of formally regulated, semi-formally regulated, and informally regulated financial services in South Africa's financial landscape. Addressing these gaps is particularly timely given the global debates on financial inclusion, resilience, and the role of regulation in shaping household financial choices.

We address these gaps and anomalies by making three contributions. First, we integrate insights from demographic, socioeconomic, and behavioral factors to shed light on the continued appeal of informally regulated finance and its implications for financial inclusion policies. Second, we argue that the dichotomization of finance into formal and informal finance in the extant literature is insufficient and does not give a clear and complete picture of the financial landscape as it omits or misclassify financial services that have characteristics of both formally- and informally regulated finance. Thus, this paper contributes by classifying the financial landscape into three levels of regulation namely informally regulated, semi-formally regulated and formally regulated finance. Third, we examine whether the factors that influence the use of formally regulated finance differ from those that influence informally- and semi-formally regulated finance. We provide a granular breakdown of financial services, identifying whether they are primarily utilized for asset accumulation through savings or debt accumulation.

To achieve these, this paper applies nationally representative longitudinal data from the South African National Income Dynamics Study (NIDS) to analyse patterns of financial service use across formally-, semi-formally-, and informally regulated institutions. By employing multinomial logistic regression, the study demonstrates that the use of informally regulated finance is not merely a residual option for the excluded but rather a rational and adaptive strategy in response to structural constraints in the formal sector. In doing so, the paper contributes both empirically and theoretically to debates on the regulation of informally regulated finance and the need for a more nuanced framework beyond the formal-informal dichotomy. Following the introduction, sections 2, 3, 4 and 5 of this paper present the literature review, material and methods, results, discussion and conclusion, respectively.

1.1. Review of Concepts

The distinction between formal, semi-formal, and informal financial services has long been central to debates on financial inclusion in developing economies(Ezzahid & Elouaourti, 2021b; Geraldes et al., 2022; Uitto, 2020; Wabwire, 2020; Yimer, n.d.). Formally regulated finance typically refers to services provided by regulated institutions such as commercial banks, licensed insurers, and registered pension funds, which operate under national financial regulatory frameworks(Sakyi-Nyarko et al., 2022; Turkson et al., 2022a). Semi-formally regulated finance encompasses institutions

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and services that may have some degree of legal recognition or regulatory oversight but operate outside the full ambit of the mainstream financial system-for example, cooperatives, microfinance institutions, mobile money platforms, and village banks(de Shalit, 2024; Turkson et al., 2022b). Informally regulated finance, by contrast, denotes financial transactions occurring outside state regulation, such as rotating savings and credit associations (ROSCAs), burial societies, moneylenders, and interpersonal borrowing between family or friends (Aryeetey & Udry, 1997; Beck et al., 2015).

Although this tripartite classification is widely accepted, scholars have debated whether such distinctions oversimplify financial behaviour. One strand of literature frames informally regulated finance as the residual domain of the "excluded poor" (Collins et al., 2009), while another highlights its centrality across income groups as a rational complement to formally regulated finance (Demirgüç-Kunt et al., 2022). In South Africa, concepts such as stokvels (rotating savings groups) and mashonisas (informal moneylenders) illustrate how informality is deeply embedded in social and cultural practices rather than being purely an economic fallback. Similarly, burial societies represent a form of risk pooling that is both financial and social, reflecting norms around dignity, solidarity, and community reciprocity (Khavhagali, 2019).

Importantly, regulation does not map neatly onto these conceptual categories. Mobile money, for instance, occupies a semi-formal space in many African economies but is tightly regulated in Kenya while still relatively under-regulated in South Africa. This suggests that finance should not be conceptualised in binary or static terms but instead as existing along a continuum of regulation and informality (Meagher, 2021).

1.2. Review of Empirical Studies

The use of informally regulated financial services predates the use of formally regulated financial services by decades, if not millennia (Tengeh & Nkem, 2017). The empirical literature on informally regulated finance is extensive, spanning Asia, Latin America, Africa, and South Africa. Globally, studies show that informally regulated finance persists even in contexts of deepening financial liberalisation. In India, ROSCAs coexist with microfinance institutions (Gupta, 2020), while in Mexico, tandas remain popular alongside digital banking (Banerjee & Duflo, 2019). These findings suggest that informality is not merely transitional but structurally embedded.

In Africa, similar trends emerge. In Ghana and Nigeria, susu collectors and moneylenders remain prevalent (Aryeetey & Udry, 1997; Akinyoade & Uche, 2018). In Kenya, informal borrowing interacts with mobile money to form hybrid systems (Mbiti & Weil, 2016). In Zambia, burial societies and savings groups are vital for resilience in rural areas (Tembo, 2021).

South Africa presents an interesting case. Research consistently documents the resilience of stokvels, burial societies, and mashonisas despite the country's sophisticated formal banking system. Collins et al. (2009) showed households juggling multiple instruments to smooth consumption, while more recent work highlights the continued popularity of informal groups across income levels (Khavhagali, 2019). Payday lending and mashonisas continue to grow despite regulation (James, 2021). Yet most South African studies are cross-sectional or ethnographic, with little use of longitudinal data to capture financial dynamics over time. New dynamics are also emerging: Cele and Gumede (2024) note how fintech platforms are reshaping access, while the National Treasury's 2023 Financial Inclusion Policy Framework recognises informal systems as part of the broader financial ecosystem. Recent reports show the persistence of informality despite technological innovation: (Yimer, 2025) finds growing reliance on mashonisa lenders amid stricter formal credit, while (Bernal et al., 2023; Zhakata & Wayi-Mgwebi, 2023) documents the endurance of stokvels and burial societies alongside fintech and crypto innovations.

Traditional theories attempt to explain this persistence. The McKinnon-Shaw Hypothesis (1973) and Stiglitz and Weiss Imperfect Information Theory (1981) attribute the widespread use of informally regulated finance to the inadequacies of formal systems. These theories posit that people use informal finance due to financial exclusion stemming from financial repression and imperfect information, respectively (Alhassan et al., 2019; Eschenbach, 2004). Rural and township-based

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individuals and small businesses, whose poor financial positions condemn them to this exclusion, therefore gravitate towards informal systems. These postulations ignite expectations that improved financial inclusion would catalyse a seamless transition from informal to formal mechanisms. Indeed, Ky, Rugemintwari & Sauviat (2021) show that digital payment mechanisms such as mobile money may help to shift a fraction of deposits from informal to formal channels.

Yet, despite these theoretical expectations, the past few decades have seen an anomalous growth of informally regulated services, not only in their persistence but also in their intensity and variety. Studies document the contemporaneous growth of formal and informal finance, showing that people continue to use informal services despite access to formal ones. Importantly, this is not limited to the exclusion. Kibuuka (2006) and Lujja (2006) demonstrate that middle- and high-income groups in South Africa, who are not financially excluded, also use stokvels and other informal services. This supports the Neostructuralist assumption that informal finance is competitive, attracting users across income groups and even influencing formal financial agents, some of whom adopt practices from the informal sector.

Explanations for this persistence extend beyond exclusion. Nguyen (2020) shows that informal services remain attractive due to their relative speed, lower transaction costs, and absence of collateral requirements. Schemes such as RoSCAs and ASCAs are participatory, locally responsive, and convenient, making them accessible to low-income and asset-poor individuals often deemed unbankable (Demirgüç-Kunt et al., 2020; Nguyen & Canh, 2021). Similarly, informally regulated services benefit from intimate client knowledge, flexibility, and social embeddedness (Abrahams, 2015; Ayyagari et al., 2010; Li & Hua, 2023). These advantages are less available in formal systems, which continue to ration out small borrowers even when donor schemes or quotas encourage inclusion (Duarte et al., 2012; Fisman et al., 2017).

This evolving landscape also highlights overlaps between categories. Semi-formal providers such as microfinance institutions, crowdfunding platforms, and digitally enabled groups operate in the space between informally and formally regulated finance. Their hybrid models blur definitions based solely on registration or intermediation (Tengeh & Nkem, 2017). Evidence further shows that users diversify, mixing informal, semi-formal, and formal mechanisms within their portfolios (Madestam, 2014). Thus, these forms of finance are not mutually exclusive but instead operate in complementarity.

Despite extensive scholarly literature, three gaps remain. First, most studies reinforce a formal-informal binary, overlooking semi-formal providers. Second, few apply panel data to track financial behaviour over time. Third, little attention is paid to the regulatory implications of recognising informal systems within national financial frameworks. This study seeks to address these gaps by using nationally representative panel data to examine how South Africans diversify across formal, semi-formal, and informal finance, contributing both empirically and theoretically.

2. Materials and Methods

2.1. Data and Measurement

This study uses secondary data collected from four waves of the South African National Income Dynamics Study (SA-NIDS) spanning from 2011 to 2017. The NIDS longitudinal data which follows the lives of the same individuals and their households' members every two to three years, provides a baseline data for at least 28000 individuals from at least 7000 households across South Africa. The NIDS data set is more suitable because it provides rich data on different sources of informally- semi-formally- and formally regulated finance at a micro level, which is not the case with other national surveys. Although the most recent wave of the NIDS panel was collected in 2017, it remains the only nationally representative longitudinal dataset that provides systematic information on household financial behavior, including informally regulated finance. More recent surveys (e.g., NIDS-CRAM) do not capture informal financial transactions in sufficient detail to address our research question. Thus, Wave 5 of NIDS provides the most appropriate and robust data source for this study.

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The dependent variables capture the type of financial services used, distinguishing between saving and borrowing options. Saving was coded as use of (i) formal banks, (ii) informal groups such as stokvels, or (iii) both (blended use). Borrowing was coded as (i) formal unsecured credit (credit/store cards, microlending), (ii) informal lenders (mashonisas), (iii) family/friends, or (iv) blended use. This multinomial categorization follows prior studies on household financial service diversification (Porteous, 2003; Karlan & Morduch, 2009).

Independent variables include income, age, gender, education, population group, religiosity, and social trust. Income was grouped into six categories of monthly net earnings, consistent with its strong predictive role in financial access (Beck et al., 2015). Age was grouped into six life-cycle bands, reflecting systematic variation in financial behavior (Allen et al., 2016). Gender (male=0, female=1) captures documented gender gaps in finance (Dupas & Robinson, 2013). Education was divided into four levels, consistent with evidence linking schooling to financial behavior (Lusardi & Mitchell, 2014). Population group (Black African, Colored, Indian/Asian, White) controls for structural inequalities in South Africa's financial system (Collins et al., 2009; James, 2021). Religiosity (importance of religious activities, four categories) captures the role of faith in economic behavior (Barro & McCleary, 2003). Social trust (likelihood of wallet return, four categories) measures generalized trust, a known determinant of informally regulated finance participation (Guiso et al., 2004; Nunn & Wantchekon, 2011). A full summary of variable definitions and measurement is provided in Table 1.

Table 1. Summary of Variables.

Dependent variables				Independent variables		
	SAVING		CREDIT/BORROWING			
Category	Financing option & measurement	Category	Financing option & measurement	Variable	Definition	Measurement
Formally regulated	Bank = 1	Formally regulated	Bank = 1			
Non-Formally regulated	Saving group or stokvel = 2	Semi-Formally regulated	Unsecured credit (credit card, store card and microlending) =2	Income	Individual's net income per month	net income broken into 6 categories namely: 0= no income; 1= R1-R5000; 2= R5001-R15000; 3=R15001-R30000; 4=R30001=R60000; 5=>R60000.
		Informally regulated	Informal money lender (mashonisa) = 3	Age	Number of years lived	Age broken down into 6 categories namely: 0=16-25; 1=26-34; 2=35-44; 3= 45-54; 4=55-64; 5=>64.
		Informally regulated	Friends and relatives = 4	Gender	A person's gender	Categorized into 2, namely 0= men; 1= women.
		Blended use	Combined used (more than one service) = 5	Education	Different stages of formal education completed	Divided into 4 categories namely: 0= no education; 1= primary education; 2=secondary education; 3 tertiary education.
				Population group	A race or ethinic group to which a person belongs	Divided into 4 categories namely: 0=black African; 1=coloured/mixed race; 2=Indian/Asian; 3=white
				Religiosity	Importance of religious activities in one's life.	How important are regigious activities in your life, broken down into 5 categories namely: 0=very important; 1=important; 2=unimportant; 3=not important at all; 4=refused/don't know.
				Social trust	The level or extent to which one trusts other people around him/her.	One's view about the likeliness that someone who lives close by or stranger will return wallet or purse lost with money (R250) and the owner's contact details. Broken into 4 categories namely: 0=very likely; 1=somewhat likely; 2=unlikely; 3 not likely at all; 4=refused/don't know.

Note: financial services included in this study are only those that could be accessed through the NIDS data set.

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2.2. Methods

This paper explains the use of financial services across different levels of regulation including formally, semi-formally and informally regulated finance. To this end, we assume that each potential user is faced with a variety of different forms of financial services options, which may be formally regulated, semi-formally regulated, or informally regulated. Given these options, we assume that users make rational choices in a quest to maximize utility. According to the utility maximization theory, a user chooses one form of financial service if the utility derived from that service exceeds the utility that is derived from other financial services available and accessible. This is premised on McFidden's Random Utility Model (RUM) which postulates that, when faced with different alternatives, people tend to choose alternatives that yield the highest utility. The utility of a given alternative is determined by the attributes of that alternative as well as the characteristics of the individual making a choice. This can be expressed through the following utility function:

$$\boldsymbol{U = f(X; Z).} \tag{1}$$

where: X represents the observable individual characteristics, while Z represents the unobservable individual characteristics. This means that the utility (U) is a function of these characteristics. This function can also be as follows:

$$\boldsymbol{U_{ij} = X_{ij}; Z_{ij} = V_j(X_{ij};\ \beta), i = 1; 2; \ldots, M.} \tag{2}$$

where: i represents individuals, while j represents financial services; $\boldsymbol{U_{ij}}$ represents the utility that is derived by individual 1 from the financial service j chosen; $\boldsymbol{X_{ij}}$ represents the observed characteristic of the individual and the financial service in question; $\boldsymbol{Z_{ij}}$ represents the unobserved characteristic of the individual and the financial service in question; and $\boldsymbol{U_j}$ represents the deterministic component of the utility function.

Considering the Random Utility Model, equation two can be rewritten as follows:

$$\boldsymbol{U_{ij}(X_{ij}; Z_{ij}) = V_j(X_{ij};\ \beta) + \varepsilon_{ij}.} \tag{3}$$

where; $\boldsymbol{V_j}$ and $\boldsymbol{\beta}$ represent the estimated deterministic component and coefficient, respectively. Meanwhile, $\boldsymbol{\varepsilon_{ij}}$ represents the unknown utility derived by an individual from the financial service. Considering this theoretical framework as well as the existing empirical literature, an individual i is faced with a variety of financing options, which may be formally regulated, semi-formally regulated, and informally regulated. Thus, the dependent variable Y is made up of multiple financing options that are available to each individual i. For example, the different financing options may include banks, microfinance institutions, store cards, informal moneylending (ML), friends and relatives.

In a case such as this one where the dependent variable is made up of more than two different categories that are not ordinal, a maximum likelihood estimator such as multinomial logit should be used (Kwak & Clayton-Matthews, 2002). The multinomial logistic regression model is an extension of the binary logistic model that allows for more than two categorical dependent or outcome variables. Like binary logistic regression, the multinomial logistic regression model uses the maximum likelihood estimation to evaluate the probability of categorical membership (Kwak & Clayton-Matthews, 2002). This paper primarily focuses on the demand side of the financial services landscape. Therefore, factors that potentially influence the use of informally regulated finances are a critical component of the model. This study assumes that people's choice of different forms of financial services is determined by the associated costs and benefits, which in turn determine the expected utility from the use of each form. In line with Mcffiden's Random Utility model, the literature suggests that both institutional factors and individual characteristics influence people's choice of different forms of financial services. The use of informally regulated finance may be influenced by factors such as age, gender, education, geographic area, ethnicity, and financial literacy. The analysis determines which ones of these factors are associated with the use of which form of informally regulated finance.

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Therefore, the logistic regression model is described by the following function:

$$\text{Logit}\ (\pi_{it}) = \text{Log}\ (\frac{\boldsymbol{\pi_{it}}}{\boldsymbol{1-\pi_{it}}}) = \boldsymbol{a_0 + a_1 X_{it1} + a_2 X_{it2} + \cdots + a_p X_{itp} + a_p Z_{itp}} + \mu_{it}. \quad (4)$$

Let

$$\boldsymbol{Y_{it} = a_0 + a_1 X_{it1} + a_2 X_{it2} + \cdots + a_p X_{itp}} + \mu_{it}. \quad (5)$$

Equation (3) can be transformed into probabilities as follow:

$$\boldsymbol{\pi_{it}} = \frac{\boldsymbol{\epsilon^{fit}}}{\boldsymbol{1-\epsilon^{fit}}}. \quad (6)$$

where $\boldsymbol{\pi_{it}}$ the probability that the ith person is using a certain type of financial service at time t; $\boldsymbol{fit}$ is the multinomial outcome, comprising options shown in Table 1, for the ith person at time t; $\boldsymbol{X_{it1}, X_{it2} \ldots X_{itp}}$ is a set of explanatory variables, including those that are summarized in Table 2, with p being the number of explanatory variables; e is the exponential term.

The dependent variable in this study captures household participation across multiple, unordered categories of financial mechanisms, including formal, semi-formal, and informal saving and credit facilities. Given the nominal structure of the outcome, the multinomial logistic regression model (MNL) represents the most appropriate empirical strategy. The MNL framework allows for the estimation of relative risk ratios, providing clear interpretation of how socio-economic, demographic, and institutional factors shift the likelihood of households selecting one financial mechanism over another. While alternative approaches such as the multinomial probit or mixed logit exist, they either impose computational and identification challenges that are difficult to address with the NIDS dataset, or require repeated choice data across multiple time periods, which are not available in the current panel structure. The MNL thus strikes an optimal balance between empirical rigor, interpretability, and feasibility, and it has been widely employed in similar studies on household financial inclusion and credit market participation (e.g., Beck & Brown, 2015; Allen et al., 2016). To test the robustness of our findings, we further estimated a binary logit model contrasting informal versus formal participation, and the results were broadly consistent with the multinomial specification, reinforcing the validity of our empirical strategy.

Table 2. Descriptive statistics for credit.

Variables	*Mean*	*Standard Deviation*	*Variance*	*Skewness*	*Kurtosis*	*Minimum*	*Maximum*
Credit	3.115	1.190	1.416	-.098	2.558	1	5
Income	2.267	.918	.843	-.338	1.867	0	5
Age	3.061	1.279	1.636	.483	2.588	1	6
Gender	1.610	.488	.238	-.449	1.202	1	2
Education	1.793	.492	.242	-2.173	7.319	0	3
Population Group	1.281	.667	.445	2.800	10.817	1	4
Religiosity	1.640	.775	.599	1.356	5.183	1	5
Social trust	3.263	1.216	1.479	-.844	2.191	1	5

3. Results

3.1. Descriptive Statistics

Tables 2 and 3 present the descriptive statistics which provide basic information about the characteristics of all the variables in the data set being used herein.

The descriptive statistics indicate that all the variables do not conform to normal distribution. Normality is not a must or a critical requirement for panel study. As such, the assumption of normality can be relaxed especially in cases where N is larger. This assumes that the sampling distribution of the estimates tends to gravitate towards normal distribution as the sample size N increases to infinity (Pek et al., 2018). Nonetheless, more diagnostic checks were performed, and the suitable models of estimation were applied accordingly.

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Table 3. Descriptive statistics for saving.

Variables	*Mean*	*Standard Deviation*	*Variance*	*Skewness*	*Kurtosis*	*Minimum*	*Maximum*
Saving	.241	.428	.183	1.210	2.465	0	1
Income	2.187	.929	.863	-.125	1.867	0	5
Age	3.008	1.209	1.461	.515	2.708	1	6
Gender	1.590	.492	.242	-.367	1.135	1	2
Education	1.859	.412	.170	-2.645	10.453	0	3
Population Group	1.302	.702	.492	2.684	9.909	1	4
Religiosity	1.633	.769	.591	1.370	5.272	1	5
Social trust	3.240	1.227	1.505	-.812	2.123	1	5

3.2. Multinomial Logistic Regression Results

This section encompasses the interpretation of the multinomial logistic regression results from Tables 4 and 5. Table 4 presents the factors explaining the use of different forms of informally- and semi-formally regulated credit relative to formally regulated credit, while Table 5 presents the factors explaining the use of different forms of informally- and semi-formally regulated savings relative to formally regulated savings. We interpret the Relative Risk Ratio (RRR) associated with each type of financial service where relative risk is the risk of an event in an experimental group relative to that in a control group. For example, the RR refers to the risk of one type of semi-formally- or informally regulated finance relative to formally regulated finance by a person falling into one category or grouping relative to the other. A relative risk of 1 indicates that the risk is comparable in the groups. A relative risk value that is greater than 1 indicates an increased risk, while a relative risk value that is less than 1 indicated decreased risk of using a particular form of semi-formally- or informally regulated finance relative to formally regulated finance.

Table 4. Multinomial Logistic Regression Results for Credit.

	Semi-formally regulated	*Informal regulated*		*Blended use*
Variable	Unsecured credit (RRR)	Informal money lender(RRR)	Friends & relatives(RRR)	More than one service(RRR)
Income: 1-5000	.465	.620	.271**	.747
5001-15000	.158**	.336*	.042***	.924
15001-30000	1.270	.804	.730	.877
30001-60000	.286	.486	.087***	1.623
600001>	2.517	.340	1.150	.883
Age: 25-34	.363***	.492***	.118**	.841
35-44	.249***	.273***	.077***	.715*
45-54	.208***	.208***	.050***	.663**
55-64	.198**	.209***	.044***	.542***
65>	.552**	.480**	.129***	.540**
Gender: Women	3.264***	4.617***	2.856***	2.253***
Education: Primary	.498**	1.178	.461***	1.265
Secondary	.101***	1.576**	.132***	1.893**
Tertiary	.068**	3.024**	.176**	1.539
Population Group: Coloured	.573***	.921***	.429	.851*
Asian/Indian	.359*	.862**	.434	.575*
White	.152***	.491***	.2383	.408***
Religiosity: Important	1.116	.921	1.018	.907
Unimportant	2.649***	1.117	1.746**	1.255
Not important at all	1.606**	.801	1.711***	.886
Don't know/refused	1.474	.704	.616	.507

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Social trust: Somewhat likely	1.019	.966	.794	.866
Unlikely	.282**	.543**	.416*	.423***
Not likely at all	1.149	.968	.998	1.040
Refused/don't know	1.501*	.995	1.142	1.023
Constant	4.321***	3.929	30.280	.742

Note: The Relative Risk Ratios (RRR) with no aesthetics (*) show that the results are statistically insignificant, thus not interpreted in this study. Meanwhile, the RRR values with one aesthetic, two aesthetics and three aesthetics show that the results are statistically significant at 0.1, 0.05 and 0.01 significant levels, respectively.

Table 5. Multinomial Logistic Regression Results for Savings.

Variable	*Savings group/stokvel (RRR)*	*Blended use (RRR)*
Income	1.245	1.650
Age: 25-34	1.086	1.949***
35-44	1.133	2.692***
45-54	1.131	2.514***
55-64	1.308	2.5197***
65>	2.698**	1.696**
Gender: Women	4.894***	2.257***
Education: Primary	.439***	.984
Secondary	.111***	1.252
Tertiary	.135*	2.107*
Population Group: Coloured	.417***	.377***
Asian/Indian	-.953	.431**
White	.064***	.386***
Religiosity: Important	1.342**	.935
Unimportant	1.137	1.091
Not important at all	1.365	.858
Refused/don't know	4.959	1.212
Social trust: Likely	.897	1.002
Unlikely	.681	.471**
Not likely at all	1.492**	.999
Refused/don't know	1.333	.988
Constant	.056***	.073

Note: The Relative Risk Ratios (RRR) with no aesthetics (*) show that the results are statistically insignificant, thus not interpreted in this study. Meanwhile, the RRR values with one aesthetic, two aesthetics and three aesthetics show that the results are statistically significant at 0.1, 0.05 and 0.01 significant levels, respectively.

3.2.1. Income

Table 4 shows that people earning 0 to R5000 are at lower risk of borrowing from friends and relatives than those whose income level is zero. Meanwhile, people earning between R5001 and R15000 are less likely than those who earn zero income to borrow through unsecured lending, informal money lending as well as friends and relatives. Moreover, this means that although low-income groups earning below R15000 a month may borrow from informal or semi-formal and/or unsecured credit sources, they tend to switch to more formal sources such as the banks as their income levels increase beyond R15000. This could mean that borrowing from unsecured and informal credit facilities is generally not the people's first preference. Moreover, this could be due to the notion that credit from informal money lenders is generally regarded as "underground" or "dirty" finance which is characterized by high interest rates and aggressive collection measures in the event of default. Thus, these results affirm the notion that the credit facilities from informal money lenders are largely reserved for the poor whose low-income status precludes them from accessing the formally regulated credit facilities from the banks(Zondi, 2016).

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Table 4 also shows that people earning between R30001 and R60000 are less likely to borrow from friends and relatives compared to banks as their income levels increase. Informally regulated financial transactions are premised on interpersonal relationships between the parties involved. Generally, friends and relatives are the closest and thus more accessible credit sources and although they are both non commercially trivial and less costly(Johnson, 2017; Nguyen, 2020; Nguyen et al., 2015), loans from friends and family can put the relationship with the lender at risk. Thus, it makes sense that people tend to borrow less from these sources as their income levels improve.

3.2.2. Age

Table 4 shows that as people grow, they are more likely to use formally regulated credit sources such as banks than as they grow old such as the banks than the unsecured informal or semi-formal sources such as credit cards, store cards, microcredit, informal money lenders and friends or relatives. This might be due to people's changing perception of the unsecured semi-formal and informal sources of credit as they become more matured and responsible, and their inclination to borrow more secured and formal credit sources.

Further, Table 4 also shows that people older than 35 years relative to the younger ones are less likely to borrow from multiple sources of credit. This could be because, generally, people younger than 35 are either still studying or unemployed or underemployed and thus require multiple sources of credit to fund their needs. This could also mean that people's borrowing habits reduce as they age. Table 5 shows that people aged above 65 years are more likely to save through savings groups or stokvels relative to banks. Although this could reflect the attractive social character of the savings groups or stokvels for retired elders, this could also mean that when people age and become less able to accumulate income and wealth, they find it less difficult and more convenient to save through informal savings facilities with less stringent requirements than the banks. Further, Table 5 shows that people aged above 25 years are more likely to use more than one saving facility. This could mean that as people get old and more financially literate, they tend to diversify between different types of savings facilities to minimize the risks and costs while maximizing the expected benefits and returns.

3.2.3. Gender

Table 4 shows that women are most likely than men to borrow from informally and semi-formally regulated sources of credit relative to the formally regulated sources such as the banks. This finding is not surprising and could mean that women have relatively limited access to formal banking finance due to lack of collateral and cash income from formal employment in South Africa. This could reflect the traditional and cultural kinship relations which restrict women's access to property ownership and cash income. Similarly, Table 5 shows that women are relatively more likely than men save their money through stokvels or savings groups compared to banks. This finding also mirrors the high inequalities and unemployment rate in South Africa which are gender bias, as well as the social norms that restrict women's rights and opportunities.

Women in different localities, especially villages and townships, pool resources together and create such opportunities for themselves through savings groups. This finding could also reflect the popularity, amongst women, of "stokvels" which take different forms and serve diverse needs of the formally unserved and/or underserved women especially in villages and townships. The widespread use of "stokvels" by women could reflect the strong bond among women who are more adept than men at managing cohort dynamics. The sense of community, socializing and women empowerment might also form part of the attractive features propelling the popularity of these groupings amongst women. Similarly, and probable for the reasons discussed above, Table 5 also shows that the women are more likely than men to use multiple sources of finance.

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3.2.4. Education

Table 4 shows that people with primary, secondary and tertiary education as less likely than those who have no education to borrow through unsecured credit and friends and relatives, compared to banks. This means that people tend to borrow less through unsecured semi-formal credit sources, compared to formal banks, as their educational levels improve. Moreover, people with secondary and tertiary education are more likely than those with no education to borrow from informal money lenders relative to banks. This finding is contrary to the hypothesized expectation that people tend towards more formally regulated sources and aways from informally regulated sources of credit as they improve their education. This could reflect limited access to formal banking services due to the reduced per capita income as well as high unemployment rate which have worsened not only among the least educated but also graduates in South Africa since the 2008/09 global recession.

Table 5 shows that people with primary, secondary and tertiary education are less likely than those with no education to use savings groups or stokvels relative to banks to save their money. Table 5 also shows that people with tertiary education are more likely to use a combination of bank and savings groups or stokvels to save their money. Although this might reflect people's appreciation of the value of diversification as their educational levels improve, it could also mirror the attractiveness of the flexible and diverse nature of the savings groups even to the educated individuals who might have access to the banks. The educated individuals might use bank and saving groups or stokvels to complement each other. For example, one of the unique features of the savings group is its social character, such as the ability to network and form groups as students and colleagues, which is lacking from the banking services. Consistent with the finding of Lujja (2006), this also suggests that there are high budget stokvels that are consisting of highly educated individuals which are formed along the gender, workplace/colleagues and kinship lines.

3.2.5. Population Group

Table 4 shows that coloured, Indian and white population groups are less likely than black Africans to borrow from unsecured credit sources and informal money lenders relative to banks. This relationship mirrors the uneven distribution of wealth which is skewed to the non-black racial groups. The low income and asset poor population groups such as black Africans are largely excluded from the formally regulated financial services landscape and thus tend to resort to less formally regulated sources of finance. This could be mirroring the legacy of the previous regime of racial segregation against the non-white population groups whose exclusion from the formally regulated economy compels them to rely on informally regulated services. Table 5 also shows that coloured, Indian and white population groups are less likely than black Africans to save through savings groups or stokvels relative to banks, also emphasizing the formal financial exclusion and skewed income inequality. Further, Tables 4 and 5 show that the other population groups are less likely than black Africans to use a combination of different type of both credit and savings facilities.

3.2.6. Religiosity

Table 4 shows that people who believe that religion is not important and not important at all are more likely than those who believe that it is very important to borrow from unsecured credit sources and friends and relatives compared to banks. These results are inconsistent with (Cao et al., 2019)which shows that religiosity promotes positive thinking and conduct, which in turn improves the lender's willingness to grant credit and borrower to repay it. However, these results might reflect the teachings of some religions such as Christianity, Islamic and Judaism against indebtedness, especially interest-bearing debt. This is in line with (Sipon et al., 2014) who found that high religiosity leads to low financial borrowing. Table 5 further shows that people who view religiosity as important are more likely than those who view it as very important to use savings groups or stokvels vis a vis

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bank account. This evidences that savings groups are also based on interpersonal relationships formed through church or religious gatherings.

3.2.7. Social Trust

Table 4 shows that people who believe that a neighbor or stranger is unlikely to return a lost wallet with money inside are less likely to borrow through unsecured credit sources and friends or relatives or to borrow from different sources relative to banks, than those who believe that a stranger or neighbor would return a wallet. This means that those who lack social trust are less likely than those who have social trust to borrow from unsecured semi-formal and informal- as well as a combination of different sources relative to banks. This is in line with (Aliber et al., 2015; Allen et al., 2019) which shows that importance of family values and interpersonal or community trust as an important enabler of informally regulated financial activities.

4. Discussion

The findings of this study offer compelling empirical evidence challenging the binary framing of South Africa's financial sector, traditionally split into formal and informal systems. Rather than operating within a rigid dualist framework, the use of financial services among South Africans appears to be fluid and multidimensional-shaped by intersecting factors of income, age, gender, education, race, religiosity, and social trust. This aligns with and extends prior arguments by Zondi (2016), Aliber et al. (2015), and Allen et al. (2019), who emphasized the socioeconomic and cultural embeddedness of informal finance rather than its marginality.

Income gradients emerged as a crucial determinant. As income levels increase, individuals progressively shift from informal and semi-formal credit options toward formal banking services, confirming the hypothesis that informal credit is often a default option rather than a preferred one. This pattern echoes existing literature (Zondi, 2016; Johnson, 2017), suggesting that underground lending is less a cultural choice and more a socioeconomic necessity, particularly among low-income earners. In contrast, savings behavior did not follow a simple upward trajectory; while wealthier individuals tend to use formal institutions, the appeal of savings groups (e.g., stokvels) endures across income brackets-especially when informal and formal tools are blended, hinting at a desire for both social embeddedness and institutional security.

Age further stratifies financial behavior. Older individuals favor formal credit but continue to engage with informal savings mechanisms, possibly due to the social nature and reduced complexity of stokvels. This duality complicates assumptions that financial maturity naturally leads to formalization, pointing instead to a nuanced process of diversification and risk management. Younger individuals, particularly those under 35, display a propensity to borrow from multiple sources, which may reflect financial precarity rather than preference. These dynamics highlight how life-cycle stages mediate the intersection between financial access and choice.

Gender differences are particularly striking. Women are substantially more likely than men to rely on informal and semi-formal mechanisms, both for credit and savings. This resonates with the literature emphasizing how gendered constraints-such as limited property ownership, informal employment, and social capital-restrict women's access to formal financial systems. The popularity of stokvels among women reinforces their role as socio-financial safety nets, offering both economic function and community empowerment. This pattern affirms the relevance of gender-sensitive financial inclusion strategies, a theme underrepresented in mainstream financial discourse.

Educational attainment showed complex effects. While higher education correlates with reduced use of unsecured or family-based credit-consistent with expectations-it unexpectedly increases the likelihood of borrowing from informal money lenders. This may reflect the growing mismatch between educational credentials and formal employment opportunities in South Africa, especially post-2008. It also complicates the assumption that financial literacy or education automatically translate into formal financial usage, suggesting a deeper structural constraint in the labor and financial markets.

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Racial and ethnic identity also emerged as a powerful axis of differentiation. Black South Africans are disproportionately represented among users of informal credit and savings groups, underscoring the enduring legacy of apartheid-era economic exclusion. Although financial liberalization has nominally expanded access, practical barriers-such as low asset ownership, credit scoring biases, and mistrust-persist. The limited engagement of other racial groups with informal financial services highlights the role of historically unequal economic trajectories and systemic privilege.

Religiosity and social trust-often underexplored in financial inclusion studies-offered subtle but important insights. High religiosity appeared to suppress borrowing from interest-bearing informal sources, in line with faith-based teachings against debt (Sipon et al., 2014). Conversely, savings groups seem to thrive in religiously active communities, where interpersonal trust and moral obligations enhance group cohesion. Likewise, low social trust was linked with lower engagement in informal credit-supporting arguments by Allen et al. (2019) that informal finance is highly contingent on perceived community integrity and reciprocity.

Implications of these findings are multifold. Firstly, they urge policymakers to recognize the inadequacy of a rigid dual-market model in explaining financial behaviors. Instead, financial ecosystems in South Africa are layered, negotiated, and interwoven with social, cultural, and economic logics. Secondly, they challenge financial inclusion strategies that focus narrowly on formal access, without attending to why and how people continue to engage with informal tools. Thirdly, they underscore the need for intersectional policy interventions that address gender, race, and class-based disparities in meaningful ways.

5. Conclusions

This study investigated the coexistence and nuanced usage patterns of informally, semi-formally, and formally regulated financial services in South Africa, going beyond the dichotomous lens of financial market dualism. While formal financial inclusion has improved over the years, the continued and widespread use of informal finance-particularly for savings rather than credit-suggests that such services serve not merely as substitutes but as complements that address gaps left by the formal system. The strong preference for stokvels and other group-based savings mechanisms highlights an intentional strategy to build assets, not accumulate debt-emphasizing social embeddedness, accessibility, and trust.

Consistent with prior literature (e.g., Zondi, 2016; Aliber et al., 2015; Nguyen et al., 2015), this study confirms that users of informal and semi-formal finance are often those structurally excluded from the formal sector: low-income earners, women, less-educated individuals, and non-white population groups. However, the findings also complicate this narrative-revealing that even socioeconomically advantaged individuals continue to engage with informal mechanisms due to their flexibility, cooperative nature, and relational advantages. These dynamics call into question the sufficiency of canonical theories like the Stiglitz–Weiss model and McKinnon–Shaw hypothesis, which link informal finance solely to market failure and exclusion. Instead, informal financial practices may also reflect cultural logic, community cohesion, and strategic financial diversification.

The blended and context-sensitive usage patterns identified here suggest that informal finance should not be dismissed or over-regulated. Rather, policies should recognize its developmental potential-particularly in promoting saving behaviors, enhancing social resilience, and supporting financial inclusion from the bottom up. Formal institutions may benefit from integrating elements of informal finance-such as flexibility, group support, and interpersonal trust-into their product design and outreach strategies.

Areas of Future Research

Future research should investigate the evolving interplay between formal and informal finance as digital financial services expand across urban and rural South Africa. Further exploration is also needed into how gender, trust, and religiosity shape long-term financial decision-making.

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Importantly, interdisciplinary research combining financial economics, sociology, and development studies could provide deeper insights into the adaptive logic of informal financial ecosystems.

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Institutional Review Board Statement: The study was conducted in accordance with the Declaration of the University of Fort Hare and approved by the Institutional Ethics Committee of the University of Fort Hare with research ethical clearance number SIM021STSH01, on24 March 2023.

Informed Consent Statement: All participants provided informed consent prior to taking part in the study. The purpose of the research was explained, participation was voluntary, and respondents were assured of confidentiality and anonymity. Consent was obtained verbally and/or in writing, depending on context and literacy levels. This study received ethics approval from the University of Fort Hare Research Ethics Committee (UREC) (Ref: SIM021STSH01). All participants were informed about the purpose and procedures of the study, assured of confidentiality, and provided informed consent prior to participation. The research was conducted in full compliance with the requirements of the University of Fort Hare's Research Ethics Committee.

Data Availability Statement: The data presented in this study are original and were collected for the purpose of the first author's PhD study entitled "The nature and growth of informal finance in selected Sub-Saharan African countries". In line with the privacy agreements established with participants as well as ethical guidelines and institutional protocols, access to the dataset is restricted to protect the confidentiality and anonymity of the study participants.

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