

Assessing the socio-economic and policy drivers that increase financial inclusion of ethnic and gender minorities in South Africa

Evaluación de los impulsores socioeconómicos y políticos que aumentan la inclusión financiera de las minorías étnicas y de género en Sudáfrica

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ABSTRACT: This paper examines the effectiveness of public policy in enhancing financial inclusion in South Africa, paying particular attention to gender and ethnicity. Using a logistic regression model on a decade-long dataset of household surveys, we identify key socio-economic and demographic determinants of financial inclusion. Income, education and age emerge as significant factors, with individuals having a tertiary education 31% more likely to have a bank account than those with a lower education level. Notably, the gender gap has narrowed, with women 3.8% more likely than men to have a bank account. Contrary to previous studies, our findings highlight the strong impact of public policy in improving financial access. However, ethnic disparities persist, as individuals from a Black ethnic background remain significantly less likely to have bank accounts. By bringing to the forefront gender and ethnicity in the discourse on South African financial inclusion, this study offers a novel perspective to inform future policies aimed at equitable financial access.

Keywords: economic growth; financial inclusion; financial services; logistic regression; South Africa (SA)

RESUMEN: Esta contribución examina la eficacia de las políticas públicas para mejorar la inclusión financiera en Sudáfrica, con especial atención al género y el origen étnico. Utilizando un modelo de regresión logística sobre un conjunto de datos de encuestas de hogares de una década de duración, identificamos los principales determinantes socioeconómicos y demográficos de la inclusión financiera. Los ingresos, la educación y la edad surgen como factores significativos, siendo las personas con estudios superiores un 31 % más propensas a tener una cuenta bancaria que las que tienen el nivel educativo más bajo. En particular, la brecha de género se ha reducido, siendo las mujeres un 3,8 % más propensas que los hombres a tener una cuenta bancaria. A diferencia de estudios anteriores, nuestros resultados ponen de relieve el fuerte impacto de las políticas públicas en la mejora del acceso financiero. Sin embargo, persisten las disparidades étnicas, ya que las personas de origen étnico negro siguen teniendo muchas menos probabilidades de tener una cuenta bancaria. Al poner en primer plano el género y el origen étnico en el discurso sobre la inclusión financiera en Sudáfrica, este estudio ofrece una perspectiva novedosa para fundamentar futuras políticas destinadas a un acceso financiero equitativo.

Palabras clave: crecimiento económico; inclusión financiera; servicios financieros, regresión logística; Sudáfrica (SA)

1. INTRODUCTION

Since the 1990s, economic and financial authorities around the world have increasingly recognized the importance of financial inclusion for long-term economic growth (Allen *et al.*, 2016). Early cross-country studies predominantly examined the foundations of financial inclusion and the utilization of financial services in developed economies of the Global North (Allen *et al.*, 2016; Kempson *et al.*, 2004). Over time, however, the focus expanded to understanding barriers to financial access in emerging economies and the Global South.

Existing research broadly highlights individual-level determinants influencing access to retail financial services, with younger and poorer individuals being less likely to utilise formal financial systems (Asuming *et al.*, 2019). Cross-sectional data was the main source of empirical information for the growing evidence of the importance of financial inclusion in fostering long-term growth in developed and developing economies (Allen *et al.*, 2016; Demirgüç-Kunt and Levine, 2008). Nevertheless, the motivation for the present study is the continuing need for empirical research to guide policymakers in identifying priority areas for intervention (Asuming *et al.*, 2019). Research in this article aims to assess whether the primary individual determinants of financial inclusion have evolved over time. Specifically, it investigates the long-term impact of South Africa's Financial Sector Charter and the measures adopted by financial institutions to extend access to retail financial markets for previously unbanked populations. Unlike prior studies conducted in Africa, this research employs longitudinal data spanning a decade to uncover enduring trends in financial inclusion.

Additionally, while numerous studies in Sub-Saharan Africa (SSA) have explored financial inclusion (e.g. Akudugu, 2013; Honohan and King, 2012; Johnson and Nino-Zarazua, 2011; Wentzel *et al.*, 2016; Zins and Weill, 2016), few have examined the role of ethnicity as a determinant. Ethnicity, as a cultural dimension, encompasses a sense of belonging to a distinct group, shaped by shared beliefs and practices (Usunier and Lee, 2005). Culture, defined as a set of shared beliefs or standards, influences individual behaviour (Goodenough, 1971), with individuals' values and actions reflecting the norms of their cultural group (Legohérel *et al.*, 2009). Earlier research in Europe highlighted disparities in financial access among ethnic minorities, suggesting they were less likely to utilize formal financial services (Kempson and Whyley, 1999).

Building on this body of work, this study employs cross-sectional data to identify age, ethnicity, income, and education level as key determinants of financial inclusion in SSA. The findings reveal that income, education level, and age are the most significant factors associated with financial inclusion. Notably, women in the sample were more likely to have bank accounts than men, after controlling for other variables. Additionally, individuals of Black ethnicity were less likely to be banked compared to their White counterparts, underscoring the need for targeted policy interventions to address these disparities.

This study aligns with broader discussions and policy priorities around financial inclusion both in SSA and globally. For instance, as highlighted in *An Analytical Framework for the Integration of Financial Inclusion and Sustainable Finance* (Choles *et al.* 2023), research in this paper emphasises the critical role of financial inclusion in driving long-term economic growth and advancing broader development objectives, including the Sustainable Development Goals (SDGs). Choles *et al.* (2023) also identify income, education, and age as key determinants of financial inclusion, while underscoring the role of financial institutions in expanding access to underserved populations. Highlighting the novelty of our results around ethnicity and gender. Furthermore, as proposed by Zins and Weill (2016), our research highlights the necessity of policy interventions and, as is the case in our research, the importance of robust measurement and reporting mechanisms to track the impact of financial inclusion initiatives. By addressing these themes, our study contributes to the growing body of knowledge on financial inclusion and its integration with sustainable finance, offering insights for policymakers and practitioners alike.

The remainder of this paper is structured as follows: Section 2 presents a review of the relevant literature. Section 3 outlines the data and methodology employed. Section 4 discusses the empirical results, including descriptive statistics. Finally, Section 5 concludes with a discussion of the findings and their potential policy implications.

2. ASCERTAINING THE INDIVIDUAL DETERMINANTS OF FINANCIAL INCLUSION

Financial inclusion broadly refers to the ability of entities and individuals to access financial services through licensed institutions. Studies on financial inclusion initially explored the prevalence of the unbanked population in developed economies, at a country level and, more recently in cross-country comparisons. The consensus from these studies was that financial inclusion can alleviate poverty, reduce income inequality, increase the wealth of the low-income population and accelerate economic growth (Beck *et al.*, 2007; Bruhn and Love, 2014; Honohan, 2008; Levine, 1998).

The extent of financial inclusion across Africa has been a significant area of research, with studies highlighting both the challenges and innovative solutions unique to the region (Honohan and King 2012; Klapper and Singer, 2015; Zins and Weill, 2016). Many SSA countries face the dual challenge of vast geographical landscapes and underdeveloped infrastructure, which make the provision of financial services outside urban centres both logistically difficult and costly. Despite these barriers, SSA economies have pioneered technological innovations to address financial inclusion, particularly through the widespread adoption of mobile phone-based financial services (Rouse *et al.*, 2023; Rouse and Verhoef, 2017). These innovations have proven transformative, enabling millions of previously unbanked individuals to access financial services for the first time. However, the success of digital financial inclusion in driving economic growth in SSA has been shown to depend heavily on the quality of institutions and governance, underscoring the need for robust regulatory frameworks and effective policy implementation (Chinoda and Kapingura, 2024).

At the same time, traditional financial access points, such as bank branches and automated teller machines (ATMs), have often proven inadequate to meet the growing demand for financial services in the face of rapidly expanding populations (David-West *et al.*, 2019, David-West *et al.*, 2022). This highlights the importance of complementary policy measures, such as investments in digital infrastructure, financial literacy programmes, and regulatory reforms that encourage innovation while ensuring consumer protection. Policymakers must also address systemic barriers, including gender disparities and socio-cultural factors, to ensure that financial inclusion initiatives reach the most marginalised populations. By fostering an enabling environment for both technological innovation and institutional development, SSA countries can harness the potential of financial inclusion to drive sustainable economic growth and reduce inequality. This study contributes to this discourse by examining the long-term trends and determinants of financial inclusion, offering insights that can inform targeted policy interventions to expand access to financial services across the region.

Cross-sectional studies have consistently demonstrated that demographic characteristics such as age, income, and gender significantly influence an individual's likelihood of accessing financial services (Asuming *et al.*, 2019; Honohan and King, 2012). In SSA, younger and poorer individuals have been found to be less likely to access formal financial services, a trend that aligns with findings from similarly underdeveloped regions in Asia, where older individuals with higher incomes and better education levels are more likely to be financially included (Asuming *et al.*, 2019; Girón *et al.*, 2022). Using data from the Global Findex Surveys, Zins and Weill (2016) conducted a comparative analysis of 37 African countries, identifying that men, individuals with higher incomes, better education, and older age groups were more likely to be financially included. Similarly, Asuming *et al.* (2019) analysed data from 31 SSA countries and confirmed that socio-demographic factors such as age, gender, and income are significant predictors of financial inclusion. Girón *et al.* (2022) further explored financial inclusion in the least developed countries across Asia and Africa, revealing consistently low levels of financial inclusion in these regions. Collectively, these studies highlight a strong and growing interest in understanding the individual determinants of financial inclusion and the barriers to access, particularly within SSA and other developing regions. This body of evidence underscores the need for targeted policy interventions that address socio-economic disparities and promote inclusive financial systems to ensure broader access to financial services.

A gender perspective is crucial when assessing financial inclusion, as women are often marginalised in society. Empirical studies have yielded mixed results on gender disparities in financial inclusion, with most indicating that women are less likely than men to have access to formal financial services (Dar and Ahmed, 2020; Girón *et al.*, 2022). Three main theoretical explanations have been proposed: firstly, women may lack the financial literacy required to effectively use and select formal financial products (Nanziri, 2016); secondly, gender discrimination

and higher barriers to access disproportionately affect women (Aterido *et al.*, 2013) and thirdly, disparities in education and income levels between genders contribute to unequal financial inclusion (Ghosh and Vinod, 2017). However, research on the gender gap in financial inclusion remains limited, partly due to a lack of sufficient detail within the data (Nanziri, 2016). Our study explores the impact of gender and related factors on financial inclusion, addressing this gap. Additionally, it considers the limited research on the association between ethnicity and financial inclusion in emerging economies (Riach and Rich, 2002). Building on prior work, this paper examines whether ethnicity is linked to financial inclusion, contributing to a broader understanding of the socio-demographic factors that shape access to financial services

3. RESEARCH DESIGN AND ANALYSIS METHODS

3.1 Data sources and variable selection

Our model considered seven explanatory variables to test for the individual determinants of financial inclusion. The first variable was *Income* because it directly affects an individual's ability to access, use, and benefit from financial services, influencing their financial stability, creditworthiness, and economic participation. Understanding income levels helps policymakers design targeted interventions to reduce disparities and promote inclusive financial systems (Allen *et al.*, 2016; Anson *et al.*, 2013; Martínez *et al.*, 2013). The *Income* variable encompassed the average total monthly income before tax and other deductions coded into four categorical levels as follows: those with no monthly income, monthly income up to R1 999 (\$177), monthly income of R2 000 – R5 999 (\$178 – \$351) and monthly income of R6 000 (\$532) and above.

H1. Individuals with a higher income are more likely to be banked

Second, *Education* is vital for understanding financial inclusion as it equips individuals with the knowledge and skills needed to effectively use financial services, enhancing their financial literacy and decision-making. Additionally, higher education levels are often associated with better access to financial products, contributing to reduced economic disparities and promoting inclusive growth (Fungáčová and Weill, 2014; Klapper and Singer, 2015). A categorical variable was coded considering primary school or less, high school completion/matriculation and lastly, tertiary education or technical training and these categories allowed for comparisons to other prior studies.

H2. Individuals with a higher level of education are more likely to be banked

Third, other studies ascertain a relationship between the respondent's *Age* and banking status (Anson *et al.*, 2013; Fungáčová and Weill, 2014; Honohan and King, 2012; Martínez *et al.*, 2013). Age is a significant factor as younger individuals are often less likely to have access to formal financial services compared to older individuals. To allow for comparable results a categorical variable was coded as follows: 16 – 29 years, 30 – 39 years, 40 – 49 years and 50 years and above.

H3. Older individuals are more likely to be banked

Fourth, women, particularly in developing regions, often face socio-cultural, economic, and institutional challenges that limit their participation in formal financial systems. These include lower levels of financial literacy, gender-based discrimination, and disparities in income and education. Some studies have indeed suggested *Gendered* differences to access financial services (Allen *et al.*, 2016; Honohan and King, 2012; Klapper and Singer, 2015). An instrumental variable coded 0 for males and 1 for females was included to test:

H4. Males are more likely to be banked

Fifth, residents of rural *Locations* seem more likely to associate with financial exclusion due to geographical isolation, underdeveloped infrastructure, and limited access to financial service providers (Allen *et al.*, 2016; Klapper and Singer, 2015; Wentzel *et al.*, 2016). Data in our sample recorded residency as living in a rural/ tribal area, in an urban (formal or semi-formal) area or in a small metro area. These responses were coded as 0 for living in an urban area and 1 for a rural area.

H5. Individuals living in an urban area are more likely to be banked

Sixth, family life seems more likely to associate with financial inclusion because households often serve as the primary unit for financial decision-making, resource pooling, and access to financial services, particularly in

contexts where cultural norms and economic interdependence shape financial behaviours (Allen *et al.*, 2016; Klapper and Singer, 2015; Wentzel *et al.*, 2016). Data in our sample recorded the *Marital Status* as single and not living with a partner, single and living with a partner, divorced, widowed, married and living with a spouse and married and not living with a spouse. These were recategorized as 0 for unmarried and 1 for married/living with a partner.

H6. Individuals that are married/living with a partner are more likely to be banked

Seventh, the *Ethnic Background* of an individual has the potential to influence access to financial services due to historical, cultural, and socio-economic factors that shape trust in financial institutions, social networks, and systemic inequalities in resource distribution (Johnson and Nino-Zarazua, 2011). This variable, however, had not yet featured in systematic studies of financial inclusion. Data in our sample identified ethnic background as Black, White, Asian, Indian or Coloured. The responses were coded into the following three categories: Black, White and Other after performing Chi-square tests of significance.

H7. The likelihood of being banked will differ by ethnicity

Empirical support for testing these hypotheses was derived from a pooled dataset spanning ten years, sourced from The FinMark Trust's annual FinScope Household Survey.¹ This survey assessed whether individuals had access to formal financial services, identifying barriers such as high costs, service inefficiencies, information asymmetry, irregular income, limited financial literacy, and high interest rates (Mhando, 2018). The FinScope surveys, conducted through face-to-face interviews, provide nationally representative data using Probability Proportional to Size (PPS) sampling, with individual datasets including sampling weights to account for population size differences (FinMark Trust, 2018). These surveys offer detailed demographic and psychographic insights into financial usage (Kanter and Nagabhushan, 2012), with participants randomly selected annually (Porteous, 2009). Previous studies, such as Honohan and King (2012), have utilized this data to explore factors (including individual, geographical and national characteristics) influencing financial service use in Sub-Saharan Africa.

The dataset available for this study covered the years 2005 to 2014, with an average of 3,898 interviews annually of South African adults aged 16 and older. After excluding missing data, primarily due to unreported income, the final sample comprised 30,135 observations. A structural approach was adopted, excluding sampling weights in univariate and logistic regressions, meaning the results should not be interpreted as national census estimates (Cameron and Trivedi, 2009). This methodological choice ensured robust analysis while acknowledging the limitations in generalising findings to the broader population.

3.2. Research framework and model specification

Using data from the FinScope Surveys for the period 2005 – 2014, a logistic model was employed to ascertain the demographic, economic and geographical factors associated access to formal financial services in South Africa. This model built on a binary dependent variable (*Banking Status*) to identify if the survey participant had a bank account with a licensed financial institution (or 0 otherwise). Logistic model specifications have been used to investigate the individual factors associated with financial inclusion in other studies (de Koker and Jentsch, 2013; Johnson and Nino-Zarazua, 2011; Wentzel *et al.*, 2016). Logistic and probit models are among the most widely used in generalized linear models with binary dependent variables while the results are essentially the same (Cameron and Trivedi, 2009; Hahn and Soyer, 2005). A logistic model specification was selected over the probit model as the logistic model allowed for the interpretation of the coefficients in terms of log-odds.² The datasets encompassed a pool of individual survey years into a cross-section for a ten-year period (2005 – 2014). The model also included instrumental variables for each *t* period and the error term as shown in Equation 1:

$$\text{Banking Status}_{i,t} = \beta_1 \text{Income}_{i,t} + \beta_2 \text{Education}_{i,t} + \beta_3 \text{Age}_{i,t} + \beta_4 \text{Gender}_{i,t} + \beta_5 \text{Location}_i + \beta_6 \text{Marital Status}_{i,t} + \beta_7 \text{Ethnic Background}_{i,t} + \gamma_h \text{Year} * \text{Region}_i + \varepsilon_{i,t} \quad (1)$$

¹ At the time of our study, financial institutions operating in South Africa did not report the number of basic bank accounts to the South African Reserve Bank, the central bank (Hawkins, 2010).

² In unreported results, we also ran a probit regression of the same equation as a robustness check. A comparison of the regressions show that the results support the base-line model.

Equation 1 shows *Banking Status* as the dependent variable coded 1 for having a bank account at a formal financial institution or 0 otherwise. To control for unobserved regional heterogeneity and the related omitted variable bias, the model included a control variable (*Region*) for the nine provinces in South Africa. Specifically, an instrumental variable for *Year* interacted with the province variable to control for time and within region effects. The pooled cross-sectional analysis allowed us to increase the number of observations and to assess the relationship across time (Wooldridge, 2009). To address any concerns on the heteroskedasticity and serial correlation in the error terms, the estimation included heteroskedasticity-robust standard errors, in line with White (1980).

4. LONG-TERM TRENDS IN FINANCIAL INCLUSION

4.1. Overview of descriptive results

The distribution of the dependent variable, *Banking Status*, in the pooled sample indicated that 64.8% of respondents had a bank account, while 35.2% were unbanked. At the start of the sample period in 2005, approximately 50% of the pooled sample were unbanked, but this figure halved to 24% by 2014. Prior to econometric estimates, this already pointed to a substantial improvement in the provision of financial services to the previously unbanked in South Africa. This trend was consistent with data from the Global Findex surveys, which estimated inclusion at 70% of the total South African population in 2014 (Demirguc-Kunt *et al.*, 2015). The trend in our sample showed steady growth in financial inclusion from 2005 until 2008, a notable decline in 2009 due to the global financial crisis, and continued growth thereafter. Table 1 summarises descriptive statistics for the seven independent variables in the pooled sample.

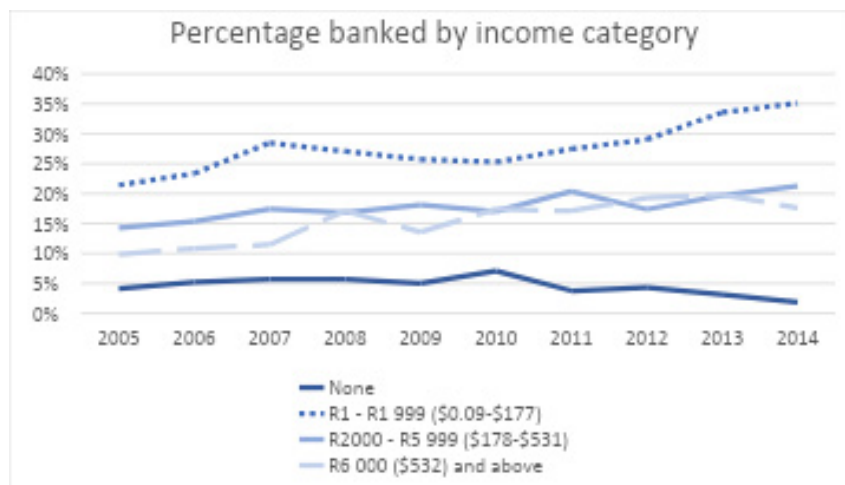
Table 1. Descriptive statistics for pooled sample for years 2005-2014

Measure	Frequency	Percent
<i>Banking status</i>	30135	100
Banked	19 535	64.8
Unbanked	10 600	35.2
<i>Income</i>		
None	5 178	17.2
R1 – R1,999 (\$0.09 – \$177)	14 587	48.4
R2,000 – R5,999 (\$178 – \$531)	5 746	19.1
R6,000 (\$532) and above	4 624	15.3
<i>Education</i>		100
Primary School	5 045	16.7
High School/Matriculation	21 188	70.3
Tertiary Education	3 902	12.9
<i>Age</i>		100
18– 29 Years	10 650	35.3
30– 39 Years	6 799	22.6
40– 49 Years	5 493	18.2
50 Years and above	7 193	23.7
<i>Gender</i>		100
Female	16 840	55.9
Male	13 295	44.1
<i>Location</i>		100
Urban	22 325	74.1
Rural	7 810	25.9
<i>Marital status</i>		100
Unmarried	17 695	58.7
Married/Living with a partner	12 440	41.3
<i>Ethnic Background</i>		100
Black	18 538	61.5
Other	7 430	24.7
White	4 167	13.8

Source: Authors estimates based on FinScope Household Surveys (2005 – 2014)

Data in Table 1 suggests that most individuals in the pooled sample had a high school *Education* (70.3%). Most respondents were young comprising the first *Age* group category of 18- to 29-year-olds (35.3%). In terms of *Gender*, females comprised 55.9% of the pooled sample, with 65.48% being banked, whereas males represented 44.1% of the pooled sample and only 63.98% of males reported having a bank account. Table 1 also records that most individuals in the pooled sample were single as 58.7% stated that they were unmarried compared to 41.3% who said that they were married/living with a partner. The surveys were conducted in both urban and rural areas, with 74.1% residing in urban areas and 25.9% in rural areas. Here note that the World Bank (2011) estimated that in 2011, approximately 63% of the South African population lived in urban areas and the remaining 37% in rural areas. Data in Table 1 shows that most individuals in the pooled sample (48.4%) reported a monthly *Income* in the second category (monthly income up to \$177). Figure 1 further illustrates the interaction between *Income* and *Banking Status*, that is, the trend of those with bank accounts per income group over the period of the study.

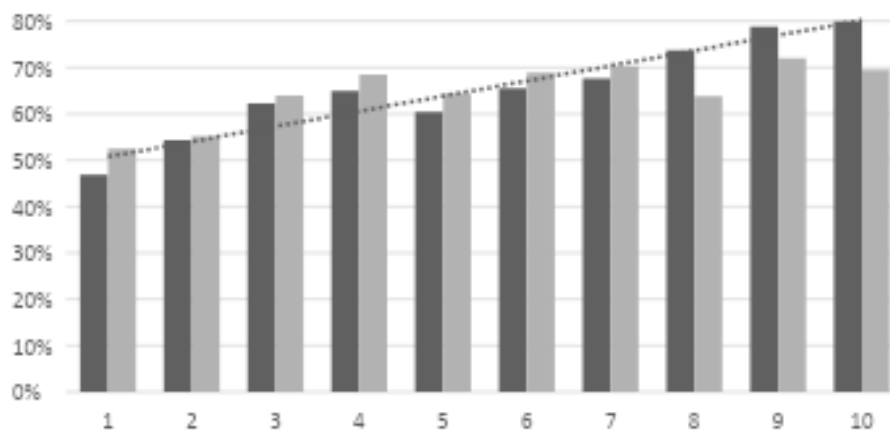
Figure 1. Percentage banked by income category in South African pooled sample (2005 – 2014)



Source: Author estimates based on FinScope Household Surveys (2005 – 2014)

The change in banking status per income group as shown in Figure 1 varied over the period of the study, with all income groups (with exception of the highest income group) showing an upward trend in banking status from 2005 until 2007. Thereafter the trend varied across the categories. The income group earning a monthly income of R1 000 – R1 999 (\$0.09 – \$177) showed a marked increase in the number of banked individuals from 2005 until 2014. Those without income showed an upward trend until 2010 and thereafter showed a decline indicating that these individuals remained excluded from formal financial services. Figure 2 further explored these trends.

Figure 2. Percentage of the banked population by gender in South Africa (2005 – 2014)



Data in Figure 2 suggested that, starting in 2012, the number of females exceeded the number of males who were banked in the pooled sample. Note that both the FinScope Household Surveys and the 2011 national census recorded the response to gender as binary only.

4.2 Main results and discussion

Table 2 presents the regression results on the determinants of financial inclusion using seven indicators. The table reports the log-odds and the marginal effects from the logistic regression. The coefficients represented the log-odds ratios and indicated how the log of the odds of a certain outcome (banked) compared to the omitted base category (unbanked) changed in response to individual characteristics.

Table 2. Results of pooled regression

Variables	Coefficient 2005 – 2014	Log-odds 2005 – 2014	Marginal effects 2005 – 2014
Income			
R1 – R1, 999 (\$0.09-\$177)	1.486*** (0.040)	4.418*** (0.179)	0.302*** (0.007)
R2, 000 – R5, 999 (\$178-\$351)	3.330*** (0.063)	27.942*** (1.752)	0.571*** (0.008)
R6,000 (\$532) and above	4.563*** (0.145)	95.852*** (13.858)	0.639*** (0.008)
Education			
High School/Matriculation	0.809*** (0.042)	2.245*** (0.094)	0.126*** (0.007)
Tertiary education	2.240*** (0.098)	9.391*** (0.921)	0.310*** (0.011)
Age			
30 – 39 years	0.327*** (0.042)	1.387*** (0.059)	0.049*** (0.006)
40 – 49 years	0.315*** (0.048)	1.370*** (0.066)	0.048*** (0.007)
50 years and above	0.548*** (0.047)	1.729*** (0.081)	0.082*** (0.007)
Gender			
Female	0.252*** (0.031)	1.286*** (0.040)	0.038*** (0.005)
Location			
Rural	-0.419*** (0.037)	0.658*** (0.025)	-0.064*** (0.006)
Marital Status			
Married	0.262*** (0.034)	1.299*** (0.044)	0.039*** (0.005)
Ethnic Background			
White	1.131*** (0.075)	3.098*** (0.234)	0.158*** (0.009)
Other ethnicities	-0.001 (0.039)	0.999 (0.039)	-0.000 (0.006)
Constant	-2.816*** (0.146)	0.060*** (0.009)	
Observations	30,135	30,135	30,135
Region FE	YES	YES	YES
Year FE	YES	YES	YES

Sources: Authors estimates based on FinScope Household Surveys (2005 – 2014).

Base categories for categorical variables are as follows: 16 – 29 years, primary school, male, urban, no income, unmarried, Black. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

The results of the logistic regression indicated that all seven variables had a significant positive association with the *Banking Status* of an individual. *Income* was the most significant predictor of the banking status of the individual. The log-odds with respect to earnings categorized in the highest income category suggest that those in the highest income category were 95.9 times more likely to be banked than those with no income, whilst controlling for other factors. As the log-odds do not measure the economic magnitude of the effects, the marginal effects were determined. The marginal effects suggested that being in the highest income category increases the probability of having a bank account by 63.9% compared to those in the lowest income category. Income was the most significantly positively associated with the banking status of the individual and this finding is in line with the expectation of *H1* and evidence documented in prior research (Devlin, 2005; Klapper and Singer, 2015; Wentzel *et al.*, 2016).

Education was the second most significant factor associated with the financial inclusion of an individual in our sample. This was in line with the expectations of *H2*, as individuals with formal education were most likely to have a bank account. Prior studies have also documented a positive association between schooling and the banking status of the individual (Allen *et al.*, 2016; Wentzel *et al.*, 2016). The log-odds indicated that those with a tertiary education were 9.39 times more likely to be banked than those with little or no education were, whilst controlling for other factors. The marginal effects were also determined to quantify the magnitude of the effect of education on the likelihood of having a bank account. The results suggest that those with tertiary education in South Africa were 31% more likely to have a bank account compared to those with little or no education.

The *Age* of the individual was found to be positively associated with financial inclusion. This was in line with expectations of *H3* and previous studies which found that older people are more likely to be banked (Allen *et al.*, 2016; Devlin, 2005; Wentzel *et al.*, 2016). The results of the log-odds ratio indicated that persons 50 years and older were 1.73 times more likely to be banked in our sample than those in the age group of 16 – 29 years. Marginal effects estimates suggested that those aged 50 years and older were 8.2% more likely to have a bank account than those in the 16-29 age category. To further explore the association of *Age* and the *Banking Status* of individuals, Table 3 shows the results of the interaction of the *Age* variable with the individual characteristics in the pooled sample. The dependent variable remained unchanged.

Table 3. Results of pooled regression with age interaction terms

Variables	(1)	Variables	(2)	Variables	(3)	Variables	(4)	Variables	(5)	Variables	(6)
<i>Age</i>		<i>Age</i>		<i>Age</i>		<i>Age</i>		<i>Age</i>		<i>Age</i>	
30 – 39 years	1.392*** (0.128)	30 – 39 years	1.018 (0.138)	30 – 39 years	1.305*** (0.084)	30 – 39 years	1.379*** (0.071)	30 – 39 years	1.499*** (0.077)	30 – 39 years	1.479*** (0.071)
40 – 49 years	1.578*** (0.163)	40 – 49 years	1.405*** (0.176)	40 – 49 years	1.365*** (0.101)	40 – 49 years	1.405*** (0.101)	40 – 49 years	1.452*** (0.092)	40 – 49 years	1.412*** (0.079)
50 years and above	1.659*** (0.183)	50 years and above	1.726*** (0.194)	50 years and above	1.808*** (0.123)	50 years and above	1.891*** (0.101)	50 years and above	1.919*** (0.109)	50 years and above	1.530*** (0.086)
<i>Income</i>		<i>Education</i>		<i>Gender</i>		<i>Location</i>		<i>Marital status</i>		<i>Ethnic background</i>	
R1 – R1, 999 (\$0.09-\$177)	4.495*** (0.246)	High School/Matriculation	2.148*** (0.231)	Female	1.277*** (0.062)	Rural	0.713*** (0.039)	Married	1.686*** (0.121)	Other	1.061 (0.065)
R2, 000 – R5, 999 (\$178-\$351)	31.582*** (3.311)	Tertiary education	9.934*** (1.471)	30-39 Female	1.11 (0.091)	30-39 Rural	1.006 (0.085)	30-39 years Married	0.710*** (0.068)	White	2.556*** (0.278)
R6,000 (\$532) and above	54.397*** (11.887)	30-39 High school	1.449*** (0.206)	40-49 Female	1.012 (0.093)	40-49 Rural	0.913 (0.086)	40-49 years Married	0.748*** (0.065)	30-39 years Other	0.735*** (0.072)
30-39 years and R1-R1, 999	0.966 (0.100)	30-39 Tertiary education	1.05 (0.279)	50 years and older Female	0.934 (0.075)	50 years and older Rural	0.739*** (0.062)	50 years and older Married	0.683*** (0.065)	30-39 years white	0.868 (0.188)
30-39 years and R2000-R5, 999	1.042 (0.173)	40-49 high school/Matriculation	0.958 (0.129)							40-49 years Other	0.802*** (0.084)
30-39 years R6,000 and above	2.352** (0.899)	40-49 Tertiary education	0.817 (0.280)							40-49 years White	1.373 (0.322)
40-49 years and R1-R1, 999	0.827* (0.095)	older than 50 high school/Matriculation	0.973 (0.120)							50 years and older Other	1.168* (0.105)
40-49 years and R2000-R5, 999	0.775 (0.137)	older than 50 tertiary education	0.536* (0.199)							50 years and older White	2.044*** (0.375)
40-49 years R6,000 and above	4.033*** (1.909)										
50 years and older R1-R1, 999	1.088 (0.128)										
50 years and older R2000-R5, 999	0.657** (0.117)										
50 years and older R6,000 and above	1.442										
Observations	30,135		30,135		30,135	Observations	30,135		30,135		30,135
Individual characteristics	Yes		Yes		Yes	Individual characteristics	Yes		Yes		Yes
Region FE	Yes		Yes		Yes	Province FE	Yes		Yes		Yes
Year FE	Yes		Yes		Yes	Year FE	Yes		Yes		Yes
Pseudo R squared	31.1		31.06		31.02	Pseudo R squared	31.05		31.06		31.12

Sources: Authors estimates based on FinScope Household Surveys (2005 – 2014).

Base categories for categorical variables are as follows: 16 – 29 years, primary school, male, urban, no income, unmarried, Black. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Across all columns in Table 3, a positive association between *Age* with *Banking Status* can be observed. In most cases, the coefficient was statistically significant. The overall fit of the models was good, with the pseudo R^2 ranging from 0.311 to 0.312. Columns (1) to (6) describe a positive association with *Age* and specifically that older individuals were more likely to be banked. This is in line with findings of previous studies (Allen *et al.*, 2016; Devlin, 2005). In column (1), those aged 40 – 49 with an *Income* of R6 000 and above were more likely to be banked relative to other categories. In column (2), those in the age group 30 – 39 years with a high school education, and those older than 50 years with a tertiary education are significantly more likely to have a bank account relative to other categories. In column (3) although the individual coefficients were significant and of the expected sign, the interaction terms were not significant. The impact of the individuals' *Age* on their likelihood of having a bank account does not appear to be affected by the *Gender* of the individual. In column (4) those aged 50 years and older living in a rural *Location* were significantly less likely to have a bank account than their urban counterparts.

Estimates in column (5) described a positive association with *Age* and *Marital Status* across all groups. With the inclusion of the interaction term, the results indicated that effect of the age on the likelihood of having a bank account reduced when the individual was married.

The results in column (6) indicated that *Income* and *Ethnicity* were significant in determining the likelihood of having a bank account. Individuals classified in the 'other' category, between the ages of 30 and 49 were less likely to have a bank account relative to their counterparts. However, there was a significantly positive association of White South Africans 50 years and older and the likelihood of having a bank account. These results suggested that individuals in the highest age category, from a white ethnicity, were significantly more likely to have a bank account relative to all their counterparts.

Findings also suggested that there was a significantly positive association between *Banking Status* and *Marital Status*. This was in line with the expectations of *H6* and previous studies that suggested that married individuals are more likely to be banked (Allen *et al.*, 2016; Wentzel *et al.*, 2016).

The residency of respondents in the pooled sample survey also affected financial inclusion. As expected by *H5* and prior studies that suggested a negative relationship between living in a rural *Area* and the *Banking Status* of the individual (Allen *et al.*, 2016; Honohan and King, 2012).

An innovative result in our findings was a significant association between *Ethnicity* and *Banking Status*, whilst controlling for other factors. In line with *H7*, these results indicated that White South Africans were significantly positively associated with having a bank account. Specifically, the findings suggested that White South Africans were 15.8% more likely to be banked than Black South Africans were. The results also indicated that those classified as 'other ethnicities' were not statistically different from individuals of a Black ethnic background. See Table 2.

The debate over whether a gender gap exists in financial inclusion remains unresolved (Naziri, 2016). Our findings, however, revealed a significant *Gender* dimension in explaining financial inclusion, contrasting with earlier studies that found women less likely to be financially included (Allen *et al.*, 2016; Girón *et al.*, 2022; Wentzel *et al.*, 2013). Our results pointed to a positive association between being female and having a bank account, with women 3.8% more likely to be banked than men. This aligns with univariate results showing 65.48% of women were banked compared to 63.98% of men. Over the ten-year study period (2005–2014), targeted interventions and formal financial sector commitments aimed at expanding access for women appear to have had significantly improved their banking status. These findings were consistent with Nanziri (2016). The latter used pooled Fin-Scope data from South Africa for the period 2006–2011 and found no significant difference in welfare benefits between financially included men and women in South Africa, though financially included women enjoyed higher welfare benefits than those excluded, underscoring the importance of policies to enhance women's financial inclusion.

The increase in women's bank account ownership may also reflect broader economic shifts in South Africa during the study period, such as rising male unemployment and a corresponding rise in female-headed households. Studies suggest that higher female labour force participation is associated with greater financial inclusion (Aziz *et al.*, 2022). Additionally, the 2012 launch of the South African Social Security Agency's (SASSA) Mastercard prepaid (N2) debit card played a pivotal role. This initiative enabled electronic transfers of social grants, such as

child support, old age, and disability grants, directly to recipients. As women are often the primary caregivers and grant recipients, many opened bank accounts for the first time to access these funds (SASSA, 2018). The FinMark Trust (2012) credited this system with significantly enhancing women's access to financial services. To further investigate these trends, the pooled survey data was divided into two subsets (2005–2011 and 2012–2014), with separate regressions run for each period, as summarised in Table 4. These findings highlight the importance of targeted policies and economic conditions in shaping financial inclusion outcomes, particularly for women.

Table 4. Results of logistics regression showing behaviour before and after electronics payments in 2012

VARIABLES	2005 - 2011 Log-odds	2005 - 2011 Marginal effects	2012 - 2014 Log-odds	2012 - 2014 Marginal effects
<i>Income</i>				
R1 – R1,999 (\$0.09 – \$177)	4.076*** (0.186)	0.280*** (0.008)	6.329*** (0.560)	0.387*** (0.017)
R2,000 – R5,999 (\$178 – \$351)	31.109*** (2.379)	0.581*** (0.009)	26.845*** (3.188)	0.581*** (0.017)
R6,000 (\$532) and above	73.520*** (11.949)	0.635*** (0.010)	255.795*** (82.618)	0.667*** (0.016)
<i>Education</i>				
High School/Matriculation	2.592*** (0.127)	0.151*** (0.008)	1.378*** (0.123)	0.044*** (0.013)
Tertiary education	11.460*** (1.226)	0.355*** (0.013)	3.431*** (0.827)	0.148*** (0.025)
<i>Age</i>				
30 – 39 years	1.279*** (0.063)	0.038*** (0.008)	1.687*** (0.139)	0.075*** (0.012)
40 – 49 years	1.286*** (0.073)	0.038*** (0.009)	1.510*** (0.141)	0.060*** (0.013)
50 years and above	1.473*** (0.081)	0.059*** (0.008)	2.540*** (0.239)	0.126*** (0.012)
<i>Gender</i>				
Female	1.084** (0.039)	0.012** (0.005)	2.109*** (0.132)	0.104*** (0.009)
<i>Location</i>				
Rural	0.611*** (0.027)	-0.076*** (0.007)	0.775*** (0.057)	-0.034*** (0.010)
<i>Marital Status</i>				
Married	1.365*** (0.054)	0.047*** (0.006)	1.192** (0.084)	0.023** (0.009)
<i>Ethnic Background</i>				
Other ethnicities	1.020 (0.046)	0.003 (0.007)	0.934 (0.075)	-0.009 (0.011)
White	3.482*** (0.302)	0.183*** (0.011)	2.049*** (0.305)	0.087*** (0.016)
Constant	0.063*** (0.010)		0.161*** (0.033)	
Observations	21,648	21,648	8,487	8,487
Region FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Sources: Authors estimates based on FinScope Household Surveys (2005 – 2014).

Each column represents the estimation results of the unweighted pooled logistic regression of equation 1 with region and year fixed effects with the pooled sample split between 2005 – 2011 and 2012 – 2014. Reference categories: 16 – 29 years, primary school or less education, male, no income, unmarried, Black. Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

The marginal effects prior to 2012 regarding *Gender* suggested that females were only 1.2% more likely to have a bank account than males, whilst controlling for other factors (at the 5% significance level). However, after 2012, the association of *Bank Status* with *Gender* was highly significant with females being 10.4% more likely to have a bank account than males, whilst controlling for other factors. Thus, the results suggest that over time, there was a higher likelihood that women would have access to a bank account. The results of this study provide an opportunity for further research into the effects of financial inclusion on gender and on welfare benefits in South Africa.

In terms of *Income*, the policy to pay grants electronically positively impacted those earning between R1 – R1,999 (\$0.09 – \$177) as they were 38.7% more likely to have a bank account than those in the lowest income category compared to prior 2012, when they were 28% more likely to have a bank account than those in the lowest income category. The marginal effects for the middle-income category (R,2000-R5,999) remained the same as prior to 2012, whilst the likelihood of having a bank account for the highest income category strengthened from 63.5% to 66.7%. The results suggested that White South Africans were 18.3% more likely to be banked than Black South Africans prior to 2012. After 2012, however, White South Africans were 8.7% more likely to be banked than Black South Africans, whilst controlling for other factors. Thus, the likelihood of having a bank account for Black South Africans increased over time.

The marginal effects of *Age* in the period prior to 2012 suggested that those 50 years and older were 5.9% more likely to have a bank account than those in the youngest age category. Other age groups were 3.8% more likely to have a bank account than those in the youngest age category, whilst controlling for other factors. After 2012, the marginal effects for *Age* suggested that those age 50 years and older were 12.6% more likely to have a bank account than the youngest age category. Those aged 30 – 39 years were 7.5% more likely and those aged 40 – 49 were 6% more likely to have a bank account than the youngest age category, whilst controlling for other factors. Thus, the effect of *Age* was more pronounced after 2012 and pointed to further government interventions that addressed the needs of the youngest age group (16 – 29 years), who remained the least likely to have a bank account.

The marginal effects of *Education* in the period prior to 2012 suggested that those with tertiary education were 35.5% more likely to have a bank account than those in the lowest education category, and those with some high school education, were 15.1% more likely to have a bank account than those in the lowest education category, whilst controlling for other factors. After 2012, the marginal effects for *Education* suggested that those with tertiary education were only 14.8% more likely to have a bank account than those in the lowest education category, and those with high school education were only 4.4% more likely to have a bank account than those in the lowest education category, whilst controlling for other factors. Thus, the effect of *Education* was less pronounced after 2012 but still pointed to a reduction in the lack of formal education as a barrier to having a bank account.

With respect to the *Location*, individuals living in rural areas prior to 2012 were 7.6% less likely to have a bank account than those residing in urban areas. Subsequently, the marginal effects suggest that those living in rural areas were only 3.4% less likely to have a bank account than those residing in urban areas.

4.3. Robustness checks

The model specification was modified to assess whether the baseline model was robust to changes in the sample specification. The pooled sample was divided into two groups along gender lines, to assess whether the baseline model was robust to changes in sample selection. The primary relationships of interest remained significant with the appropriate sign, thus supporting the baseline model. See Table 5.

Table 5. Results of logistic regression by gender

VARIABLES	Male Log-odds	Male Marginal effects	Female Log-odds	Female Marginal effects
<i>Income</i>				
R1 – R1,999 (\$0.09 – \$177)	1.555*** (0.064)	0.308*** (0.011)	1.444*** (0.054)	0.294*** (0.010)
R2,000 – R5,999 (\$178 – \$351)	3.476*** (0.089)	0.601*** (0.012)	3.205*** (0.091)	0.540*** (0.011)
R6,000 (\$532) and above	4.924*** (0.207)	0.681*** (0.012)	4.140*** (0.204)	0.596*** (0.012)
<i>Education</i>				
High School/Matriculation	0.890*** (0.068)	0.125*** (0.010)	0.764*** (0.054)	0.126*** (0.009)
Tertiary education	2.475*** (0.149)	0.318*** (0.016)	2.114*** (0.130)	0.305*** (0.015)
<i>Age</i>				
30 – 39 years	0.182*** (0.068)	0.025*** (0.009)	0.427*** (0.055)	0.068*** (0.009)
40 – 49 years	0.204** (0.080)	0.028** (0.011)	0.365*** (0.062)	0.058*** (0.010)
50 years and above	0.510*** (0.080)	0.070*** (0.011)	0.511*** (0.060)	0.081*** (0.009)
<i>Location</i>				
Rural	-0.467*** (0.059)	-0.064*** (0.008)	-0.379*** (0.049)	-0.060*** (0.008)
<i>Marital Status</i>				
Married	0.452*** (0.060)	0.062*** (0.008)	0.131*** (0.044)	0.020*** (0.007)
<i>Ethnic Background</i>				
Other ethnicities	-0.127** (0.062)	-0.018** (0.009)	0.098* (0.051)	0.016* (0.008)
White	0.949*** (0.123)	0.126*** (0.015)	1.299*** (0.099)	0.185*** (0.012)
Constant	-2.683*** (0.213)		-2.701*** (0.202)	
Observations	13,295	13,295	16,840	16,840
Region FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Sources: Authors estimates based on FinScope Household Surveys (2005 – 2014)

Each column represents the estimation results of the unweighted pooled logistic regression of equation 1 with region and year fixed effects with the pooled sample split between male and female respondents. Reference categories: 16 – 29 years, primary school or less education, male, no income, unmarried, Black. Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

One variable differed from the baseline model, namely, the relationship between banking status and other ethnicities, which were significant. In the baseline model, coming from a White or Black background had a significant association with banking status; however, the relationship between other ethnicities was not significant. In contrast, in the female group, those from other ethnicities were 1.6% more likely to be banked than Blacks South African were. There was a change in the sign for the male group, with other ethnicities being 1.8% less likely to

be banked than Black South Africans were. These results, whilst supporting the baseline model, suggest that the role of ethnicity also has a gender disparity.

The model was also run with using the sampling design weights. The primary relationships of interest remained significant with the appropriate sign, thus supporting the baseline model. See table 6 below.

Table 6. Results of logistic regression with sampling weights

Variables	Coefficient 2005 - 2014	Log-odds 2005 – 2014	Marginal effects 2005 - 2014
<i>Income</i>			
R1 – R1, 999 (\$0.09-\$177)	1.655*** (0.054)	5.233*** (0.283)	0.330*** (0.009)
R2, 000 – R5, 999 (\$178-\$351)	3.504*** (0.084)	33.248*** (2.781)	0.615*** (0.010)
R6,000 (\$532) and above	4.827*** (0.207)	124.835*** (25.837)	0.693*** (0.011)
<i>Education</i>			
High School/Matriculation	0.783*** (0.057)	2.188*** (0.125)	0.126*** (0.009)
Tertiary education	2.286*** (0.133)	9.836*** (1.305)	0.334*** (0.016)
<i>Age</i>			
30 – 39 years	0.420*** (0.056)	1.522*** (0.086)	0.066*** (0.009)
40 – 49 years	0.258*** (0.064)	1.294*** (0.083)	0.041*** (0.010)
50 years and above	0.406*** (0.065)	1.501*** (0.097)	0.064*** (0.010)
<i>Gender</i>			
Female	0.255*** (0.041)	1.291*** (0.053)	0.040*** (0.006)
<i>Location</i>			
Rural	-0.420*** (0.049)	0.657*** (0.032)	-0.066*** (0.008)
<i>Marital Status</i>			
Married	0.364*** (0.046)	1.439*** (0.066)	0.057*** (0.007)
<i>Ethnic Background</i>			
White	1.142*** (0.113)	3.132*** (0.354)	0.169*** (0.015)
Other ethnicities	-0.052 (0.057)	0.949 (0.054)	-0.008 (0.009)
Constant	-3.013*** (0.165)	0.049*** (0.008)	
Observations	30,135	30,135	30,135
Region FE	YES	YES	YES
Year FE	YES	YES	YES

Sources: Authors estimates based on FinScope Household Surveys (2005 – 2014)

Each column represents the estimation results of the weighted pooled logistic regression of equation 1 with region and year fixed effects. Reference categories: 16 – 29 years, primary school or less education, male, no income, unmarried, Black. Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

The results of the weighted sample had a lower pseudo-r-squared of 0.3067, indicating that the model had lower explanatory power than the baseline model, which had a pseudo-r-squared of 0.3101. The marginal effects of the variables of interest had a higher magnitude than the baseline model. This suggests that the magnitude of the effects of the variables on the banking status of individuals may be higher than those reported in the baseline model. However, the robust-standard errors for several variables were higher than those reported in the baseline model, indicating the results of the baseline estimation were more precise.

A regression was also run with errors clustered on a regional level (for the nine provinces), to control for possible correlation between error terms across individuals within regions. The primary relationships of interest remained significant with the appropriate sign, thus supporting the baseline model. See Table 7.

Table 7. Results of logistic regression with error clustered on a regional basis

Variables	Log-odds	Marginal effects
<i>Income</i>		
R1 – R1,999 (\$0.09 – \$177)	1.486*** (0.110)	0.302*** (0.019)
R2,000 – R5,999 (\$178 – \$351)	3.330*** (0.084)	0.571*** (0.013)
R6,000 (\$532) and above	4.563*** (0.131)	0.639*** (0.014)
<i>Education</i>		
High School/Matriculation	0.809*** (0.057)	0.126*** (0.008)
Tertiary education	2.240*** (0.178)	0.310*** (0.018)
<i>Age</i>		
30 – 39 years	0.327*** (0.049)	0.049*** (0.007)
40 – 49 years	0.315*** (0.017)	0.048*** (0.003)
50 years and above	0.548*** (0.100)	0.082*** (0.014)
<i>Location</i>		
Rural	-0.419*** (0.069)	-0.064*** (0.010)
<i>Marital Status</i>		
Married	0.262*** (0.032)	0.039*** (0.005)
<i>Ethnic Background</i>		
Other ethnicities	-0.001 (0.088)	-0.000 (0.013)
White	1.131*** (0.129)	0.158*** (0.016)
Constant	-2.816*** (0.151)	
Observations	30,135	30,135
Region FE	YES	YES
Year FE	YES	YES

Sources: Authors estimates based on FinScope Household Surveys (2005 – 2014)

Each column represents the estimation results of the unweighted pooled logistic regression of equation 1 with year fixed effects and standard errors clustered at a regional level. Reference categories: 16 – 29 years, primary school or less education, male, no income, unmarried, Black. Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$



5. CONCLUSION

This study examined the determinants of financial inclusion in SSA, with a focus on South Africa, and analyzed how these factors evolved over a ten-year period. Using data from the FinScope Surveys, we assessed the long-term impact of state interventions aimed at expanding access to formal banking services. Our findings revealed that individuals with the lowest incomes were the least likely to be banked, consistent with prior studies identifying high costs as a key barrier to accessing formal financial services. Policy interventions to improve digital infrastructure, reduce banking costs, and leverage mobile technologies could significantly enhance financial inclusion for low-income groups.

Education and age also emerged as significant predictors of financial inclusion. Individuals with tertiary education were most likely to be banked, while those aged 16–29 were less likely to access formal financial services compared to older age groups. This trend mirrors broader patterns across SSA, where younger, lower-income individuals remain excluded from formal financial systems. Targeted government campaigns, particularly financial literacy programmes in rural areas, could help bridge this gap, especially for those with limited formal education.

A unique contribution of this study is its exploration of the association between ethnic background and financial inclusion in South Africa. We found that White South Africans were 15.8% more likely to be banked than Black South Africans, though this disparity decreased over time as more Black individuals opened bank accounts. Despite this progress, targeted policy interventions remain necessary to ensure inclusive finance for all ethnic groups. Future qualitative research could provide deeper insights into the influence of ethnicity on financial inclusion.

Contrary to previous studies in Africa, which either found women less likely to be banked or reported no significant gender differences, our results indicated a positive association between being female and financial inclusion. Over the study period, women became increasingly likely to have bank accounts, reflecting the success of targeted interventions to expand their access to formal financial services. These findings underscore the potential for financial inclusion to enhance welfare benefits and reduce inequality. Policymakers should establish mechanisms to evaluate the impact of financial inclusion on women's welfare and consider replicating South Africa's public-private partnerships and technology-driven approaches in other SSA countries.

While this study provides valuable insights, its focus on a single country limits generalisability. Future research could extend this analysis to other countries and incorporate a broader range of financial services through a financial inclusion index. Additionally, more inclusive gender categories could further enrich the understanding of the gender dimension in financial inclusion. These steps would enhance the robustness and applicability of findings, informing more effective policies to promote inclusive finance across SSA.

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DECLARATION OF COMPETING INTEREST

The authors of this article declare that they have no financial, professional or personal conflicts of interest that could have inappropriately influenced this work.

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AUTHORSHIP CONTRIBUTION STATEMENT

Marybeth Rouse: Conceptualization, Data curation, Formal analysis, Methodology, Writing – original draft.

Bernardo Batiz-Lazo: Conceptualization, Investigation, Project administration, Writing – review & editing.

Santiago Carbo-Valverde: Conceptualization, Methodology, Project administration, Writing – review & editing.

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