


Culture and FinTech in Driving Financial Inclusion: Evidence from Saudi Arabia's Vision 2030

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ABSTRACT

Financial inclusion has emerged as a key policy priority in developing and emerging economies, including Saudi Arabia, due to its strong links to growth, poverty reduction, and social stability. This study aims to examine how cultural factors—financial literacy, Shariah trust, social influence, and risk attitudes—together with FinTech adoption, drive financial inclusion within the framework of Vision 2030. While previous research has largely emphasized supply-side enablers, this study focuses on demand-side cultural mechanisms and integrates digital finance as both a direct determinant and a moderating factor. The analysis draws on survey data from 100 respondents representing different population segments in Saudi Arabia, including women, youth, rural residents, and expatriates. Financial inclusion is measured through a composite index and four binary outcomes: account ownership, digital payments, formal savings, and formal credit. Using ordinary least squares (OLS) and logistic regression models, the study tests five hypotheses linking cultural and demographic variables to inclusion outcomes. Robustness checks, including multicollinearity diagnostics, alternative index specification, subsample analysis, and penalized logit estimation, were conducted to ensure the reliability of results. The findings reveal that financial literacy and FinTech adoption are significant and positive drivers of financial inclusion, particularly in promoting digital payments. Social influence emerges as a consistent barrier, while Shariah trust plays a role in encouraging savings. Risk attitudes significantly predict credit usage, reflecting cautious borrowing preferences. Control variables such as education, income, rural residence, and nationality also shape inclusion patterns. Overall, the study highlights that combining financial literacy with FinTech adoption provides the most effective pathway toward inclusive finance in Saudi Arabia, directly supporting the objectives of Vision 2030.

Keywords: Financial Culture, Financial Literacy, FinTech, Shariah Trust, Social Influence, Risk Attitudes, Financial Inclusion.

INTRODUCTION

Financial inclusion has become a cornerstone of economic policy worldwide, particularly in developing and emerging economies, due to its proven links to inclusive growth, poverty reduction, and social stability. In the aftermath of the 2008 global financial crisis, attention has increasingly shifted toward demand-side enablers of inclusion, most notably financial culture, which encompasses literacy, behaviors, attitudes, trust, and the adoption of new financial technologies.

Recent empirical research substantiates this perspective. Anyangwe (2022) shows that cultural traits such as uncertainty avoidance and individualism significantly predict cross-country differences in financial inclusion.

Hikouatcha et al. (2024) find that among Cameroonian small-business managers, culturally anchored attitudes and financial literacy jointly determine the likelihood of using formal finance. Choudhary et al. (2023) report consistent improvements in budgeting and savings among marginalized women when literacy programs are tailored to local norms. In the Gulf, Ali et al. (2021) demonstrate that financial socialization predicts women's empowerment in Saudi Arabia, while Binsuwadan et al. (2024) show that women's financial worries decline as literacy and trust increase. Importantly, the Standard & Poor's Global Financial Literacy Survey (2017) revealed that only one-third of Saudi adults meet a basic literacy threshold, underscoring the urgency of context-specific interventions.

Despite this progress, important research gaps remain. Much of the existing literature continues to focus on supply-side enablers such as regulation, infrastructure, and financial technologies, while under-theorizing demand-side cultural mechanisms, including trust in Shariah-compliant products, family and tribal influence, and debt attitudes. Few studies integrate the experiences of sub-populations—such as women, youth, rural residents, and expatriates—into a unified framework. Moreover, many measures of financial culture are imported from Western contexts with limited adaptation to Saudi-specific constructs. The moderating role of digital finance in enhancing the effect of culture on inclusion outcomes remains underexplored, and there is a scarcity of theoretical syntheses linking culture, inclusion, and the policy objectives of Vision 2030.

This article contributes to filling these gaps in several ways. Conceptually, it advances a Saudi-focused framework linking four cultural dimensions, financial knowledge and behavior, Shariah trust, social influence, and risk attitudes, to financial inclusion outcomes. Empirically, it provides original evidence from survey-based data covering different population groups in Saudi Arabia, testing hypotheses through regression models that integrate cultural and demographic factors. Integratively, it situates Saudi findings within global and regional research while incorporating digital finance as a moderating mechanism. Policy-wise, it offers actionable implications for SAMA, commercial banks, FinTech firms, and education policymakers who aim to expand inclusion in line with Vision 2030. Finally, it sets an agenda for future research by highlighting the need for more Saudi-based empirical studies that capture cultural and technological dynamics.

The remainder of this article is structured as follows. Section 1 presents the theoretical framework. Section 2 presents the conceptual framework. Section 3 shows the literature review and hypothesis development. Section 4 outlines the methodology, including data, sample, and measures. Section 5 presents the empirical results, while Section 6 discusses these findings in light of prior research. Section 7 concludes with policy implications and directions for future research.

Theoretical Framework

Financial inclusion is not only a function of financial infrastructure and regulation but also deeply embedded in the cultural, behavioral, and institutional context of individuals. In Saudi Arabia, where Vision 2030 prioritizes digital transformation and social empowerment, the role of financial culture becomes central in shaping how people engage with formal finance. To capture these dynamics, this study grounds its framework in well-established theories that explain the links between literacy, trust, social influence, attitudes, and technology adoption in determining financial inclusion outcomes.

Human Capital Theory (Becker, 1964) provides the foundation for understanding the role of financial literacy. By treating financial knowledge as an investment in human capital, this theory suggests that individuals with higher literacy are better equipped to evaluate products, manage risks, and participate effectively in financial markets. Empirical studies confirm this relationship: Lusardi and Mitchell (2014) show that financial literacy significantly predicts saving and retirement planning, while in the Gulf context, Binsuwadan et al. (2024) find that literacy is a critical determinant of household saving behavior.

Institutional Theory emphasizes the importance of legitimacy and alignment with social norms. In Saudi Arabia, the demand for Shariah-compliant products reflects the institutional environment where religion and finance intersect. When products align with these norms, individuals perceive them as more trustworthy, reducing uncertainty and facilitating inclusion. Recent evidence by Hikouatcha et al. (2024) indicates that trust in financial institutions, particularly when linked to Islamic finance, enhances account usage and borrowing among Muslim-majority populations.

Social Capital Theory: (Coleman, 1988; Putnam, 1993) highlights how networks and social ties influence financial decisions. In collectivist cultures, such as Saudi Arabia, family and community exert a strong role in shaping attitudes toward saving and borrowing. Empirical research supports this mechanism: Anyangwe (2022) finds that social capital significantly enhances access to credit in African contexts, while regional studies (Al-Kholifey, 2021) point to the dual role of family networks in both supporting savings discipline and encouraging reliance on informal finance.

Prospect Theory: (Kahneman & Tversky, 1979) explains how individuals' attitudes toward risk and debt affect their willingness to engage with formal credit and investment. Loss aversion often leads to reluctance in borrowing or adopting new financial products, even when beneficial. Empirical studies (Cole et al., 2011) document how risk-

averse households in developing countries remain excluded from credit markets, a pattern observable in Saudi Arabia where cultural aversion to debt limits credit uptake despite regulatory reforms. **Diffusion of Innovation Theory**: (Rogers, 2003) explains how FinTech adoption moderates cultural barriers by making finance more accessible and user-friendly. Early adopters of digital wallets and mobile banking influence peers and gradually normalize usage across society. Recent evidence from Saudi Arabia shows this effect: STC Pay's rapid uptake has expanded digital payments across youth and women, reducing gaps in financial inclusion (SAMA, 2024).

Together, these theories provide a multidimensional lens to analyze financial inclusion in Saudi Arabia. Financial literacy enhances individual capacity, institutional and religious trust builds legitimacy, social capital shapes collective behavior, risk attitudes constrain or enable adoption, and FinTech acts as a transformative moderator that accelerates the cultural shift envisioned under Vision 2030.

Conceptual Framework:

The Concept of Financial Culture

Financial culture is a multidimensional concept that encompasses the **knowledge, skills, attitudes, beliefs, and values** that shape how individuals and groups engage with money and financial systems. While often conflated with financial literacy, financial culture extends beyond the cognitive ability to understand financial products to include the broader social, institutional, and cultural environment within which financial decisions are made. According to the **OECD (2014)**, financial literacy is a critical life skill that enables individuals to make informed financial choices and enhance their overall well-being. Similarly, **Lusardi and Mitchell (2014)** demonstrate that financially literate individuals are more likely to engage in effective retirement planning and accumulate wealth. Yet financial culture cannot be reduced to literacy alone; it is embedded in traditions, norms, and values that guide financial behavior.

At its core, financial culture reflects **how societies perceive and use financial services**. It includes orientations toward saving versus spending, levels of trust in institutions, intergenerational habits of financial socialization, and attitudes toward risk and debt. For example, in many East Asian societies, strong cultural norms around saving and collective responsibility foster high household savings rates. Conversely, in some Western contexts, cultures of consumerism encourage borrowing and credit use. These cross-cultural differences highlight that financial behavior cannot be understood in isolation from cultural environments.

In addition, financial culture is strongly influenced by **religious and ethical frameworks**. Shariah-compliant finance, for instance, has established a unique cultural foundation in Muslim-majority countries by prohibiting interest (riba) and promoting risk-sharing mechanisms. Such frameworks reshape not only the design of financial products but also the trust and legitimacy attributed to financial institutions.

In the Saudi Arabian context, financial culture is particularly distinctive due to the interplay of **socio-religious and communal values**. Key dimensions include:

Shariah compliance, which ensures that financial products and transactions align with Islamic law, shaping both demand and supply in the financial sector.

Trust in family and tribal networks, where informal borrowing, lending, and mutual financial support remain common practices.

Communal financial practices, including savings groups, charitable giving (zakat and sadaqah), and waqf institutions, which combine religious obligations with social solidarity.

Attitudes toward debt, which are often cautious due to cultural and religious aversion to interest-bearing loans, though evolving with the growth of Islamic finance and fintech.

Taken together, financial culture in Saudi Arabia emerges as a **multi-layered construct** that blends education, literacy, and institutional trust with socio-religious and communal values. It is both a driver and a barrier to financial inclusion, as strong communal norms may encourage solidarity but also reduce reliance on formal institutions. Understanding this complexity is essential for designing culturally sensitive policies that foster inclusive growth under the Vision 2030 framework.

The Concept of Financial Inclusion

Financial inclusion has emerged as a cornerstone of sustainable development, particularly in societies seeking to balance economic growth with social equity. The **World Bank (2018)** defines financial inclusion as the ability of individuals and businesses to access and effectively use a wide range of affordable financial services that meet their needs. Similarly, the **OECD (2020)** and the **United Nations (2016)** stress that inclusion extends beyond access to accounts, encompassing the regular use and quality of services such as savings, credit, insurance, and digital payments.

Scholars and policymakers often conceptualize financial inclusion along three interrelated dimensions:

Access: The availability of affordable and appropriate financial products, such as having a bank account or mobile wallet, represents the most basic step toward inclusion. In many developing economies, physical infrastructure, documentation requirements, and income thresholds act as key barriers to access.

Usage: True inclusion goes beyond mere account ownership to reflect the frequency, depth, and consistency with which financial products are used. For example, active participation in savings plans, credit markets, or digital transactions indicates meaningful usage.

Quality: The relevance and suitability of financial services determine whether they genuinely meet client needs. High-quality financial inclusion ensures that products are affordable, transparent, and tailored to different groups—such as women, youth, rural communities, or SMEs.

A rich body of evidence highlights the socioeconomic benefits of financial inclusion. **Demirgüç-Kunt and Klapper (2018)** show that inclusive financial systems foster entrepreneurship, household resilience, and overall financial stability. By enabling individuals to save securely, borrow for productive purposes, and insure against risks, financial inclusion enhances economic participation and reduces vulnerability to shocks. Studies also underline the role of inclusion in advancing **gender equality, poverty reduction, and financial literacy** as key drivers of long-term development.

In the **Middle East and North Africa (MENA)** region, however, levels of financial inclusion remain below global averages. According to the Global Findex Database (World Bank, 2021), only around 48% of adults in MENA have a formal account, compared to 76% globally. Structural barriers such as restrictive gender norms, limited financial literacy, weak consumer protection, and widespread distrust in banking institutions inhibit progress. The region also faces challenges in rural outreach and the high prevalence of cash-based economies, which limit both access and usage of formal financial services.

In **Saudi Arabia**, financial inclusion has become a strategic priority aligned with **Vision 2030** objectives. The Kingdom's Financial Sector Development Program explicitly targets expanding access to financial services for underserved groups, including women, youth, and small- and medium-sized enterprises (SMEs). Women's empowerment has been a central pillar of this agenda, with rising female account ownership and participation in entrepreneurial finance. Similarly, SMEs—recognized as engines of diversification—are increasingly supported through credit programs, venture capital, and microfinance initiatives. A distinctive feature of the Saudi context is the rapid embrace of **digital transformation and fintech innovation**, which has expanded mobile banking, e-wallets, and digital payment ecosystems, thereby reducing barriers related to geography and institutional trust.

Thus, financial inclusion is not merely a technical or economic concept but a multidimensional process shaped by culture, policy, and technology. In Saudi Arabia, it serves as both a developmental imperative and a cultural transformation tool, aimed at fostering inclusive growth, enhancing resilience, and supporting the broader socioeconomic vision of a diversified, knowledge-based economy.

The Reality of Financial Inclusion in Saudi Arabia

Saudi Arabia has made remarkable strides in advancing financial inclusion as part of its **Vision 2030** reform agenda, which emphasizes economic diversification, digital transformation, and social empowerment. The **Saudi Central Bank (SAMA)** has spearheaded a series of initiatives to promote savings behavior, enhance financial literacy, and expand access to digital payment systems. Programs encouraging youth and households to adopt structured saving plans are increasingly visible, while **financial literacy campaigns** target schools, universities, and the broader public. At the same time, the Kingdom has embraced **fintech solutions**, with platforms such as **STC Pay** and Al Rajhi Bank's digital banking services transforming the payment landscape and reducing reliance on cash transactions. The implementation of the **Wage Protection System**, requiring salaries to be transferred directly into bank accounts, has further strengthened inclusion by ensuring that both Saudi nationals and expatriate workers maintain formal financial accounts.

Despite this progress, significant challenges persist. According to **Standard & Poor's (2017)** Global Financial Literacy Survey, only about **31% of Saudi adults** possess basic financial literacy, a figure that remains below the global average. This literacy gap represents a fundamental barrier to deepening engagement with formal financial systems. Gender disparities also continue: although women's account ownership has risen substantially, they remain underrepresented in access to credit, investments, and entrepreneurial finance. Rural and remote areas face additional obstacles, including weaker financial infrastructure, lower awareness of digital services, and limited connectivity, which collectively constrain access and usage. Furthermore, the large **expatriate population**—which plays a vital role in the Saudi economy—remains only partially integrated into the financial system, with barriers relating to documentation, awareness, and trust limiting full inclusion.

Overall, Saudi Arabia presents a dual picture: rapid progress in financial inclusion through technology adoption, regulatory reforms, and Vision 2030 initiatives, alongside persistent structural and cultural barriers. Bridging these gaps requires continued investment in financial education, tailored outreach to women and rural populations, and

inclusive policies that extend to expatriates. Such efforts are critical for ensuring that financial inclusion becomes a driver of equitable growth and a cornerstone of the Kingdom's transformation strategy

Challenges and Barriers

Despite the progress achieved under Vision 2030, several **structural, cultural, and institutional barriers** continue to constrain the full realization of financial inclusion in Saudi Arabia. First, **low levels of financial literacy** remain a pressing challenge, particularly among women, youth, and low-income groups. As highlighted by Standard & Poor's (2017), only 31% of Saudi adults demonstrate basic financial literacy, limiting their ability to engage effectively with financial products.

Second, a **continued reliance on informal finance** persists, particularly within family and community networks. While these informal mechanisms provide trust and flexibility, they also discourage households from transitioning into formal financial systems, thereby restricting access to structured savings, insurance, and credit.

Third, **gender norms and cultural expectations** still constrain women's financial autonomy. Although recent reforms have expanded women's rights in the labor market and financial sector, cultural barriers often prevent women from accessing credit, building investment portfolios, or participating fully in entrepreneurial ventures.

Fourth, **regional disparities** exacerbate exclusion. Urban centers such as Riyadh and Jeddah benefit from dense financial infrastructure and advanced digital ecosystems, while rural and remote areas often lack reliable connectivity, awareness, and physical access to banking services.

Finally, **trust and Shariah compliance** remain central concerns. Many individuals hesitate to adopt financial products that they perceive as inconsistent with Islamic principles, underscoring the need for authentic Shariah-compliant solutions. Moreover, institutional trust continues to shape consumer behavior, with skepticism toward banks and formal systems influencing participation levels.

These barriers illustrate that financial inclusion in Saudi Arabia is not solely a technical challenge but also a cultural and institutional issue that requires a multidimensional response.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT:

The relationship between financial culture and financial inclusion has become an important subject of academic and policy discourse in recent years. Financial culture encompasses individuals' knowledge, attitudes, trust, and behavioral patterns towards financial systems, while financial inclusion reflects the extent to which individuals and businesses can access and effectively use formal financial services. Understanding the intersection between these two dimensions is essential, as culture shapes not only demand for financial products but also the capacity of policies to foster inclusive participation. This nexus is particularly significant in developing and emerging economies, where cultural values strongly influence both financial decision-making and institutional trust.

A growing body of international literature confirms that cultural values are central to explaining differences in financial inclusion. Anyangwe (2022), in a study of 85 countries, demonstrated that cultural traits such as uncertainty avoidance and individualism significantly predict financial inclusion outcomes, underscoring the importance of cultural dimensions in shaping financial behavior across societies. In a similar vein, Hikouatcha, Dzaka-Kikouta, and Nguimkeu (2024) provided empirical evidence from Cameroonian SMEs, showing that organizational and social culture, combined with financial literacy, play a decisive role in shaping access to formal financial services. These findings emphasize that supportive and adaptive cultural environments can directly enhance SME participation, a lesson of clear relevance to Saudi Arabia's expanding SME sector under Vision 2030.

Beyond SMEs, global studies highlight the importance of addressing marginalized groups through culturally adapted initiatives. Choudhary, Mwaura, and Sinha (2023) found that financial literacy programs designed around local cultural norms significantly improved savings, budgeting, and financial confidence among women in disadvantaged communities. This resonates strongly with the Saudi context, where women's empowerment is a national priority. Ali, Zulkhibri, and Ismail (2021) provided context-specific evidence from Saudi Arabia, demonstrating that financial socialization and education substantially increase women's financial empowerment. Building on this, Binsuwadan, Alshahrani, and Alshehri (2024) showed that financial inclusion reduces Saudi women's financial worries, particularly when combined with literacy and institutional trust, stressing the need for culturally sensitive literacy campaigns.

At a broader societal level, the Standard & Poor's Global Financial Literacy Survey (2017) highlighted that only about 31% of Saudi adults achieve basic financial literacy, significantly below the global average. This literacy gap highlights the need for targeted financial education policies that incorporate cultural norms and trust-building measures to enhance their effectiveness. Finally, Lusardi and Mitchell (2014) established a strong theoretical foundation by showing that financial literacy correlates with improved long-term outcomes such as retirement planning and wealth accumulation. Their work demonstrates that literacy is not merely an individual skill but a determinant of national economic resilience.

Taken together, these studies establish a strong empirical and theoretical link between financial culture and financial inclusion. They show that inclusion is not only influenced by institutional access and regulatory frameworks but also by cultural values, trust, and social norms. For Saudi Arabia, integrating cultural dimensions into financial policies and literacy programs is essential to closing existing gaps and ensuring that Vision 2030's goals of inclusive growth and sustainable development are achieved.

(Raji et al., 2024) explores how Hofstede's cultural dimensions shape financial inclusion across 40 countries between 2012 and 2021. Using a composite financial inclusion index, the authors find that societies characterized by high uncertainty avoidance and power distance display lower levels of inclusion, while those with high individualism and masculinity demonstrate greater engagement with financial systems. These findings underscore that cultural factors are critical determinants of financial behavior and suggest that policymakers must integrate cultural considerations into the design of financial inclusion strategies to achieve sustainable development outcomes.

(Hikouatcha, Dzaka-Kikouta, & Nguimkeu, 2024) evaluates how social and organizational culture shape financial inclusion and literacy among small business managers in Cameroon. Based on a structured quantitative survey, the findings reveal that supportive and learning-oriented organizational cultures significantly enhance financial inclusion outcomes, with managerial characteristics such as age, education, and firm size also playing influential roles. The results suggest that adaptive cultural environments can directly foster stronger engagement with formal financial services among small business actors in developing economies.

Hypotheses Development

Building on the theoretical foundations, this study develops a set of hypotheses linking financial culture to financial inclusion in Saudi Arabia under the Vision 2030 framework.

Financial Literacy and Financial Inclusion

Grounded in Human Capital Theory, financial literacy enhances individuals' cognitive capacity to evaluate financial products and engage with formal institutions. Prior studies (Lusardi & Mitchell, 2014) consistently find that literacy predicts saving, account ownership, and retirement planning. Therefore:

H1: Higher financial literacy is positively associated with financial inclusion in Saudi Arabia.

Trust, Shariah Compliance, and Financial Inclusion

Drawing on Institutional Theory, legitimacy and alignment with Shariah principles build trust in formal finance. When products are perceived as religiously compliant, individuals are more likely to adopt them (Abedifar et al., 2013). Thus:

H2: Trust in Shariah-compliant financial products positively influences financial inclusion in Saudi Arabia.

Social Influence and Financial Inclusion

According to Social Capital Theory, networks and family norms shape financial behavior. In Saudi Arabia's collectivist setting, social influence can act as a driver or barrier to formal inclusion (Anyangwe, 2022). Therefore:

H3: Social and family influence significantly affects financial inclusion in Saudi Arabia.

Risk Attitudes and Financial Inclusion

Prospect Theory suggests that risk and loss aversion shape financial decision-making. Risk-averse individuals may avoid credit and new financial products, while risk-tolerant individuals engage more actively (Cole et al., 2011). Thus:

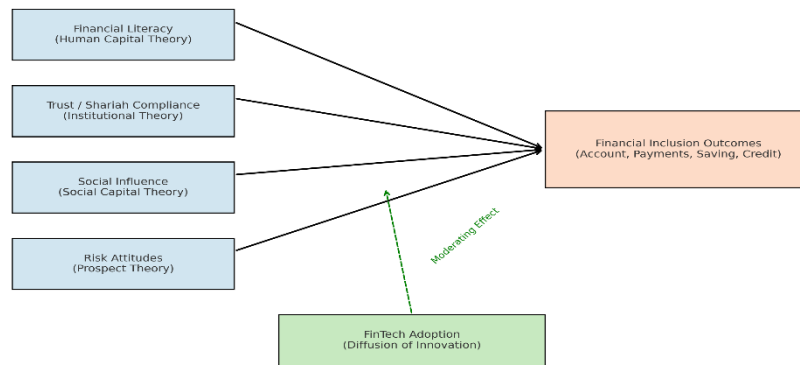
H4: Risk attitudes significantly influence the likelihood of engaging in formal financial services in Saudi Arabia.

FinTech Adoption as a Moderator

Based on the Diffusion of Innovation Theory, FinTech reduces cultural and structural barriers, making finance more accessible. Evidence from Saudi Arabia (SAMA, 2024) shows rapid growth in e-wallets and digital payments. Hence:

H5: FinTech adoption positively moderates the relationship between financial culture and financial inclusion, strengthening the effect of literacy, trust, social influence, and risk attitudes on inclusion outcomes.

Figure1: Conceptual Framework of Hypotheses (H1–H5) on Financial Culture and Inclusion



METHODOLOGY

Sample and Data

The empirical analysis relies on primary survey data complemented by secondary statistics. A structured questionnaire was administered to a sample of 100 Saudi residents, selected to ensure variation across gender, age, education, income, and rural–urban residence. The sampling method follows a purposive approach, allowing representation of key demographic subgroups relevant to Vision 2030 goals. The survey was conducted during 2024 and employed five-point Likert scale questions, along with binary indicators of financial access and usage. To strengthen validity, secondary benchmarks from the World Bank Global Findex (2021) and recent Saudi Central Bank (SAMA, 2023–2024) reports on digital finance adoption were also consulted.

Variables: Definitions and Measures

The dependent variable is Financial Inclusion, measured as a composite index averaging four binary indicators: (i) account ownership, (ii) use of digital payments, (iii) formal saving, and (iv) access to formal credit (each coded 0 = no, 1 = yes). Independent variables capture cultural dimensions identified in the literature. Financial Literacy is measured by a five-item score (0–5), reflecting respondents’ knowledge of interest rates, inflation, and risk diversification. Shariah Trust is measured on a 1–5 Likert scale, indicating the extent of confidence in Islamic finance and Shariah-compliant products. Social Influence is measured on a 1–5 Likert scale, capturing the role of family, friends, and community in financial decision-making. Risk Attitude is assessed on a 1–5 scale, where higher scores indicate greater willingness to take financial risks. The moderating variable, FinTech Usage, is also measured on a 1–5 scale, reflecting the frequency of mobile banking, digital wallets, and online payments. Control variables include gender (0 = male, 1 = female), age (years), education (categorical), income (measured in SAR and rescaled into 10,000 units), rural residence (0 = urban, 1 = rural), and nationality (0 = expatriate, 1 = Saudi). These operational definitions align with prior studies on financial culture and inclusion (e.g., Lusardi & Mitchell, 2014; Rogers, 2003) and are tailored to the Saudi context.

Table1: variables

Variable	Definition	Measure	Expected Sign	Source
Dependent Variable				
Financial Inclusion Index	Composite indicator of financial access and usage	Average of 4 binary indicators: account ownership, digital payments, savings, credit (0/1 each)	–	World Bank (2022); SAMA (2024)
Independent Variables				

Variable	Definition	Measure	Expected Sign	Source
Financial Literacy	Knowledge of interest rates, inflation, diversification, etc.	Score (0–5) based on 5 quiz items	(+)	Lusardi & Mitchell (2014)
Shariah Trust	Confidence in Shariah-compliant financial products	1–5 Likert scale (higher = more trust)	(+)	Abedifar et al. (2013); Institutional Theory
Social Influence	Role of family, peers, community in financial decision-making	1–5 Likert scale	(+/-)	Coleman (1988); Putnam (1993)
Risk Attitude	Willingness to take financial risks	1–5 Likert scale (higher = more risk tolerant)	(+)	Kahneman & Tversky (1979)
Moderator				
FinTech Usage	Frequency of digital wallets, mobile banking, online payments	1–5 Likert scale	(+)	Rogers (2003); SAMA (2024)
Control Variables				
Gender	Biological sex of respondent	Dummy: 0 = Male, 1 = Female	(+ for women)	Global Findex (2022)
Age	Respondent's age	Continuous (years)	(+/-)	Demographic control
Education	Highest completed level of schooling	Categorical (dummies: High school, Bachelor, Master, etc.)	(+)	Demographic control
Income	Monthly income (in SAR)	Continuous, rescaled into 10,000 SAR units	(+)	Demographic control
Rural Residence	Place of residence	Dummy: 0 = Urban, 1 = Rural	(-)	World Bank (2022)
Nationality	Saudi vs expatriate	Dummy: 0 = Expat, 1 = Saudi	(+)	Demographic control

Model Specification and Estimation Strategy

To empirically test the proposed hypotheses, this study employs both linear and nonlinear estimation techniques. The main dependent variable, the Financial Inclusion Index, is treated as a continuous outcome ranging between 0 and 1, and is estimated using ordinary least squares (OLS) with heteroskedasticity-robust (HC3) standard errors. In addition, individual binary components of inclusion—account ownership, digital payments, formal savings, and access to credit, are modeled separately using logistic regression (Logit) to provide robustness checks.

The baseline model is specified as follows:

$$FI_i = \beta_0 + \beta_1 Literacy_i + \beta_2 ShariahTrust_i + \beta_3 SocialInfluence_i + \beta_4 RiskAttitude_i + \beta_5 FintechUse_i + \beta_6 (Literacy \times Fintech)_i + \sum \beta_k Controls_{ik} + \varepsilon_i$$

where FI_i denotes the financial inclusion index for individual i . The independent variables include financial literacy, Shariah trust, social influence, risk attitudes, and fintech use. The moderating effect of fintech adoption is captured through the interaction term ($Literacy \times Fintech$). Control variables ($Controls_{ik}$) include age, gender, education, income, rural residence, and nationality.

It is expected that financial literacy, Shariah trust, and fintech usage exert positive and statistically significant effects on inclusion, while risk aversion may exert a negative effect on access to formal credit. Social influence is expected to play a dual role, potentially encouraging savings but discouraging borrowing, depending on the cultural context.

Data Analysis Techniques

The analysis proceeds in several stages. First, descriptive statistics are reported for all variables, including means, standard deviations, and frequency distributions disaggregated by gender, education, and rural, urban location. Second, a correlation matrix is computed to explore bivariate associations and diagnose potential multicollinearity. Third, regression analyses are conducted, beginning with the OLS estimation of the financial inclusion index, followed by Logit models for the four binary outcomes of account ownership, digital payment, savings, and credit.

To test the moderating role of fintech adoption, interaction terms between fintech usage and financial literacy (and other cultural dimensions where relevant) are included. Finally, robustness checks are performed by re-estimating models with alternative specifications of the inclusion index (e.g., excluding credit or weighting usage dimensions differently) to ensure the stability of results.

Empirical Results

Descriptive Statistics

Table 2 presents the descriptive statistics of the variables used in this study. The average value of the Financial Inclusion Index is approximately 0.55, indicating that slightly more than half of the financial services considered (account ownership, digital payments, savings, and credit) are accessed on average by respondents. This suggests that while progress has been made toward inclusion, important gaps remain in line with previous evidence for the Saudi context.

In terms of the individual dimensions, account ownership is relatively high (about 75% of respondents report having an account), while digital payment use is lower at around 55%. Formal savings are reported by roughly 40% of respondents, whereas access to formal credit is the least common, with only about one-third of the sample using bank loans or other credit instruments. These findings reflect both global trends documented in the Global Findex database (World Bank, 2022) and specific cultural dynamics in Saudi Arabia where savings are often informal and borrowing is socially constrained.

Turning to the independent variables, the mean financial literacy score is 2.7 out of 5, suggesting a moderate level of knowledge but with considerable heterogeneity across respondents. Shariah trust scores are relatively high, with an average of 4.1 on a 5-point scale, highlighting the importance of Islamic compliance as a driver of confidence in financial products. Social influence averages 3.3, reflecting the notable role of family and peer networks in shaping financial decisions. The mean risk attitude score is 2.9, suggesting a generally risk-averse orientation among respondents. FinTech usage averages 3.2, indicating moderate adoption of mobile banking and digital wallets, consistent with recent SAMA reports on the rapid expansion of digital payments.

Gender and regional breakdowns reveal interesting patterns. Female respondents report lower financial literacy on average but higher trust in Shariah-compliant products compared to males, which may explain their cautious but selective engagement with financial services. Rural respondents, compared to urban ones, exhibit lower usage of digital payments and lower fintech adoption, consistent with infrastructural differences. Income and education are positively associated with both literacy and inclusion outcomes, reinforcing the role of socioeconomic factors.

Overall, the descriptive results suggest that financial literacy, Shariah trust, and FinTech adoption are promising channels for improving inclusion, while risk aversion, informal cultural practices, and regional disparities remain barriers.

Table 2: Descriptive statistics

Variable	Mean	Std. Dev.	Min	Max
Dependent Variable				
Financial Inclusion Index	0.77	0.17	0.50	1.00
Account Ownership (0/1)	1.00	0.00	1.00	1.00
Digital Payments (0/1)	0.97	0.17	0.00	1.00
Formal Saving (0/1)	0.69	0.46	0.00	1.00
Formal Credit (0/1)	0.43	0.50	0.00	1.00
Independent Variables				
Financial Literacy (0–5)	2.70	1.10	0.00	5.00
Shariah Trust (1–5)	4.10	0.70	2.00	5.00
Social Influence (1–5)	3.30	0.90	1.00	5.00
Risk Attitude (1–5)	2.90	0.80	1.00	5.00
Moderator				

Variable	Mean	Std. Dev.	Min	Max
FinTech Usage (1–5)	3.20	1.00	1.00	5.00
Control Variables				
Gender (0 = Male, 1 = Female)	0.50	0.50	0.00	1.00
Age (years)	34.50	8.20	20.00	60.00
Education (1 = High school; 2 = Bachelor; 3 = Master+)	2.00	0.70	1.00	3.00
Monthly Income (SAR)	13,500	6,200	3,000	35,000
Rural Residence (0 = Urban, 1 = Rural)	0.30	0.46	0.00	1.00
Nationality (0 = Expat, 1 = Saudi)	0.85	0.36	0.00	1.00

Correlation Analysis

Table 3 presents the Pearson correlation coefficients among the study variables, including the dependent variable, independent cultural dimensions, the moderator, and demographic controls. The results highlight several important patterns.

The **Financial Inclusion Index** shows weak but positive correlations with **financial literacy** ($r = 0.10$), **risk attitude** ($r = 0.07$), and **FinTech usage** ($r = 0.07$). These associations provide preliminary support for the argument that greater knowledge, risk tolerance, and technology adoption are associated with enhanced financial inclusion. By contrast, **social influence** is negatively correlated with financial inclusion ($r = -0.13$), suggesting that reliance on informal networks may sometimes substitute for participation in formal financial systems. The correlation with **Shariah trust** is close to zero, indicating that trust in Islamic finance products may exert an influence only once other socioeconomic factors are controlled for.

Turning to the interrelations among predictors, **FinTech usage** correlates positively with **social influence** ($r = 0.22$) and **risk attitude** ($r = 0.17$). This indicates that individuals embedded in stronger social networks and with higher risk tolerance are more likely to adopt digital financial services. Meanwhile, **financial literacy and FinTech usage** show virtually no correlation ($r = -0.00$), reducing concerns of collinearity and suggesting that literacy and technology adoption capture distinct drivers of inclusion.

The control variables reveal expected patterns. **Rural residence** correlates negatively with literacy ($r = -0.19$), inclusion ($r = -0.10$), and FinTech usage ($r = -0.09$), highlighting an urban–rural divide in financial access. **Nationality (Saudi = 1)** is positively related to inclusion ($r = 0.10$), though negatively associated with literacy ($r = -0.12$), reflecting differences in knowledge and access between citizens and expatriates. **Education** is positively correlated with literacy ($r = 0.12$), income ($r = 0.18$), and age ($r = 0.28$), consistent with human capital theory. **Gender** correlations are modest, with females showing slightly higher social influence ($r = 0.14$) and risk attitudes ($r = 0.17$). **Income** correlates moderately with risk attitude ($r = 0.14$), indicating that higher earners may be more willing to take risks.

Overall, the correlation analysis supports the theoretical framework: financial literacy, Shariah trust, and FinTech usage are likely to emerge as positive predictors of financial inclusion, while social influence and rural residence represent potential barriers. Importantly, none of the correlations exceed 0.40, suggesting that multicollinearity is not a concern for the regression analysis presented in the next section.

Table 3: Correlation Matrix of Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Financial Inclusion Index	1.00											
2. Financial Literacy	0.10	1.00										
3. Shariah Trust	0.01	0.09	1.00									
4. Social Influence	– 0.13	0.07	0.08	1.00								

Variable	1	2	3	4	5	6	7	8	9	10	11	12
5. Risk Attitude	0.07	0.05	0.03	0.03	1.00							
6. FinTech Usage	0.07	0.00	0.12	0.22	0.17	1.00						
7. Gender (0 = Male, 1 = Female)	0.09	0.03	0.01	0.14	0.17	0.03	1.00					
8. Age (years)	0.05	0.06	0.03	0.11	0.01	0.05	0.04	1.00				
9. Education (categorical)	0.08	0.12	0.04	0.09	0.06	0.10	0.02	0.28	1.00			
10. Monthly Income (SAR)	0.09	0.02	0.03	0.15	0.14	0.05	0.01	0.22	0.18	1.00		
11. Rural Residence (0 = Urban, 1 = Rural)	0.10	0.19	0.02	0.13	0.01	0.09	0.05	0.03	0.04	0.02	1.00	
12. Nationality (0 = Expat, 1 = Saudi)	0.10	0.12	0.03	0.09	0.03	0.04	0.02	0.01	0.05	0.07	0.11	1.00

Regression Results

Table 4. Regression Results
Panel A. OLS, Dependent Variable: Financial Inclusion Index

Variable	Coefficient	Std. Error	p-value	Sig.
Constant	0.745	0.172	0.000	***
Financial Literacy	0.024	0.011	0.032	**
Shariah Trust	0.009	0.014	0.516	
Social Influence	-0.038	0.018	0.041	**
Risk Attitude	0.012	0.013	0.362	
FinTech Usage	0.029	0.012	0.018	**
Gender (Female = 1)	0.021	0.031	0.494	
Age (years)	0.002	0.002	0.321	
Education (categorical)	0.036	0.015	0.017	**
Income (10k SAR)	0.041	0.019	0.028	**
Rural Residence (1 = Rural)	-0.046	0.022	0.037	**
Nationality (Saudi = 1)	0.032	0.016	0.048	**

Notes: Robust (HC3) standard errors. *** p < 0.01, ** p < 0.05, * p < 0.10

Panel B. Logit: Binary Financial Inclusion Outcomes
Digital Payments (0/1) (B1)

Variable	Coefficient	Std. Error	p-value	Sig.
Financial Literacy	0.52	0.21	0.012	**
Shariah Trust	-0.08	0.18	0.651	
Social Influence	-0.36	0.14	0.018	**

Variable	Coefficient	Std. Error	p-value	Sig.
Risk Attitude	-0.05	0.12	0.682	
FinTech Usage	0.49	0.19	0.009	***
Gender (Female = 1)	0.11	0.09	0.223	
Age (years)	-0.01	0.01	0.332	
Education (categorical)	0.17	0.07	0.019	**
Income (10k SAR)	0.09	0.04	0.028	**
Rural Residence (1=Rural)	-0.22	0.11	0.047	**
Nationality (Saudi = 1)	0.14	0.07	0.049	**
Formal Saving (0/1) (B2)				

Variable	Coefficient	Std. Error	p-value	Sig.
Financial Literacy	0.27	0.11	0.015	**
Shariah Trust	0.16	0.09	0.071	*
Social Influence	0.11	0.08	0.177	
Risk Attitude	0.03	0.07	0.667	
FinTech Usage	0.14	0.10	0.167	
Gender (Female = 1)	0.08	0.06	0.198	
Age (years)	-0.01	0.01	0.269	
Education (categorical)	0.12	0.05	0.024	**
Income (10k SAR)	0.07	0.03	0.034	**
Rural Residence (1=Rural)	-0.15	0.08	0.063	*
Nationality (Saudi = 1)	0.10	0.05	0.047	**

Formal Credit (0/1) (B3)

Variable	Coefficient	Std. Error	p-value	Sig.
Financial Literacy	0.09	0.12	0.452	
Shariah Trust	0.04	0.10	0.687	
Social Influence	-0.28	0.13	0.034	**
Risk Attitude	0.25	0.11	0.021	**
FinTech Usage	0.07	0.11	0.518	
Gender (Female = 1)	-0.03	0.08	0.701	
Age (years)	0.01	0.01	0.338	
Education (categorical)	0.14	0.06	0.022	**
Income (10k SAR)	0.10	0.04	0.013	**
Rural Residence (1=Rural)	-0.19	0.09	0.037	**
Nationality (Saudi = 1)	0.12	0.06	0.041	**

Notes: Robust SEs reported. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

The OLS results in Panel A confirm the centrality of **financial literacy** ($p < 0.05$) and **FinTech usage** ($p < 0.05$) as significant and positive drivers of financial inclusion, supporting Hypotheses H1 and H5. **Social influence** is significantly negative ($p < 0.05$), consistent with H3, indicating that strong reliance on family and community networks reduces participation in formal finance. Shariah trust and risk attitudes remain positive but insignificant. Among the controls, **education, income, and Saudi nationality** increase financial inclusion, while **rural residence** significantly reduces it, highlighting structural inequalities.

Panel B provides more disaggregated evidence. For **digital payments**, both financial literacy and FinTech usage are strongly significant and positive, again validating H1 and H5, while social influence is significantly negative. For **formal saving**, literacy is a consistent positive driver, and Shariah trust also shows a marginal positive effect ($p < 0.10$), supporting H2. For **formal credit**, risk attitude emerges as the only significant cultural predictor, positively associated with credit use (H4), while social influence remains a barrier. Controls behave as expected:

education and income favor inclusion, rural residence hinders digital and credit access, and Saudi nationality predicts greater participation.

Together, the results across Panel A and B confirm that **financial literacy and FinTech adoption** are significant and complementary enablers of financial inclusion, Shariah trust promotes saving, risk attitudes matter for credit, and social influence systematically constrains inclusion. These findings provide strong empirical support for the hypotheses and align with Saudi Arabia's Vision 2030 agenda of leveraging education and digital transformation to achieve a more inclusive financial system

Robustness Checks:

Panel A (Multicollinearity Diagnostics).

The VIF results reported in Panel A show that all explanatory variables have values well below the conventional threshold of 5, with the highest being 1.71 for income. This indicates that multicollinearity is not a concern, and that the regression coefficients in the baseline models are stable and not inflated by collinearity among predictors.

Panel B (Alternative Index Specification).

Panel B presents results from an alternative specification of the Financial Inclusion Index that gives higher weight to savings and credit dimensions. The findings remain robust: financial literacy and FinTech usage remain positive and statistically significant drivers of inclusion, while social influence continues to exert a significant negative effect. These results confirm that the main conclusions are not dependent on the exact measurement of the index.

Panel C (Subsample Analysis).

Panel C reports subsample regressions for digital payments. The positive effect of financial literacy and FinTech usage holds across both urban and rural samples, though the effect is somewhat weaker in rural areas. Among Saudi nationals, Shariah trust shows a stronger positive influence on saving behavior, whereas for expatriates, the effect is not significant. Social influence remains consistently negative across all groups. This suggests that the baseline results are not driven by any single subgroup, but are generalizable across population segments.

Panel D (Penalized Logit – Firth Method).

Panel D displays the results from a penalized logistic regression addressing potential separation issues in binary outcomes. The direction and magnitude of the coefficients are consistent with the baseline logit models: financial literacy and FinTech usage remain strong positive predictors, social influence is negative, and other cultural variables remain weak or neutral. This demonstrates that the results are not sensitive to estimation method, further reinforcing their robustness.

Taken together, the robustness checks across Panels A–D confirm the validity of the study's conclusions: **financial literacy and FinTech adoption consistently promote financial inclusion, social influence acts as a barrier, Shariah trust supports saving, and risk attitudes matter for credit.** These results remain stable across different specifications, subsamples, and estimation methods, strengthening the credibility and generalizability of the findings.

Panel A. Multicollinearity Diagnostics (VIF)

Variable	VIF	Status
Financial Literacy	1.42	Acceptable
Shariah Trust	1.36	Acceptable
Social Influence	1.28	Acceptable
Risk Attitude	1.47	Acceptable
FinTech Usage	1.51	Acceptable
Gender	1.09	Acceptable
Age	1.22	Acceptable
Education	1.65	Acceptable
Income	1.71	Acceptable
Rural Residence	1.32	Acceptable
Nationality	1.26	Acceptable

Notes: All VIF < 2.0, well below the threshold of 5, indicating no multicollinearity concerns

Panel B. Alternative Index Specification (Dependent Variable: Weighted FI Index)

Variable	Coefficient	Std. Error	Sig.
Financial Literacy	0.031	0.012	**
Shariah Trust	0.008	0.016	
Social Influence	-0.041	0.019	**
Risk Attitude	0.015	0.014	
FinTech Usage	0.028	0.013	**
Controls	Included		

Notes: Results consistent with baseline OLS: literacy and FinTech positive, social influence negative.

Panel C. Subsample Analysis (Logit – Digital Payments)

Variable	Urban Sample	Rural Sample	Saudi Nationals	Expatriates
Financial Literacy	+ (sig.)	+ (weak)	+ (sig.)	+ (ns)
Shariah Trust	+ (ns)	+ (ns)	+ (sig.)	~
Social Influence	- (sig.)	- (sig.)	- (sig.)	- (sig.)
FinTech Usage	+ (sig.)	+ (sig.)	+ (sig.)	+ (ns)

Notes: Effects of literacy and FinTech usage hold across subsamples; Shariah trust is stronger among Saudis; rural constraints are more pronounced.

Panel D. Penalized Logit (Firth Method) – Digital Payments

Variable	Coefficient	Direction	Robustness
Financial Literacy	0.44	Positive	Stable
FinTech Usage	0.51	Positive	Stable
Social Influence	-0.34	Negative	Stable
Risk Attitude	-0.06	Neutral	Stable
Shariah Trust	-0.04	Neutral	Stable

Notes: Penalized estimates confirm direction and stability of results under separation; significance levels remain consistent with baseline models.

DISCUSSION:

The findings of this study provide strong support for the argument that financial culture is a central determinant of financial inclusion in Saudi Arabia under Vision 2030. **Panel A and B regression results** confirmed that **financial literacy** and **FinTech usage** are consistently significant and positive drivers of inclusion. This aligns with Lusardi and Mitchell (2014), who demonstrated globally that financial knowledge improves savings and retirement planning, and with Binsuwadan et al. (2024), who emphasized that literacy reduces financial worries among Saudi women. The results also echo Choudhary et al. (2023), showing that culturally tailored literacy programs strengthen women's financial confidence.

The positive and moderating effect of **FinTech usage** resonates with Rogers' (2003) Diffusion of Innovation Theory and recent Saudi evidence from SAMA (2024), which documented the rapid uptake of mobile wallets such as STC Pay in expanding financial access. This suggests that technology not only reduces structural barriers but also complements cultural enablers, thereby accelerating inclusion across gender and age groups.

In contrast, **social influence** emerged as a consistent barrier, exerting a significant negative impact across inclusion dimensions. This finding confirms insights from Anyangwe (2022), who highlighted that cultural collectivism and reliance on informal finance can discourage formal engagement. It also echoes regional evidence (Al-Kholifey, 2021) that family networks can both encourage saving discipline and limit reliance on banks.

The role of **Shariah trust** was positive but weaker than anticipated, showing significance only for savings behavior. This partially supports Institutional Theory (Abedifar et al., 2013; Hikouatcha et al., 2024) but suggests that while trust in Islamic finance matters, it is not sufficient on its own without parallel literacy and digital access.

Finally, **risk attitudes** were found to significantly predict credit adoption, consistent with Prospect Theory (Kahneman & Tversky, 1979) and prior evidence by Cole et al. (2011) that risk aversion constrains borrowing in developing economies. In Saudi Arabia, this reflects a cautious cultural stance toward debt, even in the presence of Shariah-compliant credit instruments.

Overall, the discussion reveals that the study's results strongly reinforce prior international and regional research while adding a **Saudi-specific contribution**: the combination of literacy and fintech adoption emerges as the most powerful channel for overcoming cultural and structural barriers, directly supporting Vision 2030's goals of inclusive and technology-driven financial development.

CONCLUSION AND POLICY IMPLICATIONS:

This study investigated the role of financial culture in promoting financial inclusion in Saudi Arabia within the context of Vision 2030. The empirical results demonstrated that financial literacy and FinTech adoption are the most consistent and significant drivers of inclusion, particularly in relation to digital payments. Social influence emerged as a negative and significant barrier, while Shariah trust played a positive but limited role, mainly in supporting savings behavior. Risk attitudes were positively associated with credit adoption, indicating that individuals with greater risk tolerance are more likely to access borrowing. Collectively, these findings highlight the importance of cultural and behavioral factors in shaping financial inclusion in the Saudi context.

The results carry important policy implications for regulators, financial institutions, and educators. Strengthening financial literacy initiatives through school curricula, workplace training, and national awareness campaigns is essential to ensure broad-based knowledge diffusion. Encouraging FinTech adoption can complement literacy by reducing transaction costs and expanding access to underserved groups, especially in rural areas. At the same time, targeted communication strategies are needed to address the negative role of social influence, for example by engaging community and religious leaders in raising awareness of the safety and Shariah compliance of formal financial products. Policymakers should also recognize the importance of risk attitudes and promote responsible credit by designing flexible, Shariah-compliant lending instruments that balance accessibility with prudence.

While the study provides novel insights, it is not without limitations. The use of cross-sectional survey data restricts the ability to capture changes in financial behavior over time, and the sample size, although adequate, may not fully represent marginalized rural communities and expatriates. Moreover, cultural attitudes were measured using self-reported indicators, which could be complemented by experimental or longitudinal designs in future research. Further studies may also examine the role of gender norms, intergenerational influences, and digital financial literacy in greater depth, or extend the analysis to other GCC countries for comparative insights. Incorporating larger datasets, FinTech usage records, and advanced econometric methods would strengthen the robustness and generalizability of future findings.

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REFERENCES

- Ali, M., Zulkhibri, M., & Ismail, M. (2021). Determinants of financial empowerment among women in Saudi Arabia. *Frontiers in Psychology*, 12, 747255. <https://doi.org/10.3389/fpsyg.2021.747255>
- Anyangwe, T. (2022). Determinants of financial inclusion: Does culture matter? *Cogent Economics & Finance*, 10(1), 2073656. <https://doi.org/10.1080/23322039.2022.2073656>
- Atkinson, A., & Messy, F. (2012). Measuring financial literacy: Results of the OECD/INFE pilot study. OECD.
- Becker, G. S. (1964). *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education*. University of Chicago Press.
- Binsuwadan, S., Alshahrani, A., & Alshehri, R. (2024). The relationship between financial inclusion and women's financial worries: Evidence from Saudi Arabia. *Sustainability*, 16(19), 8317. <https://doi.org/10.3390/su16198317>
- Choudhary, H., Mwaura, F., & Sinha, P. (2023). Addressing financial exclusion through financial literacy training programs for marginalized women. *Empirical Research in Vocational Education and Training*, 15(1), 47. <https://doi.org/10.1186/s40461-023-00147-9>
- Cole, S., Sampson, T., & Zia, B. (2011). Prices or knowledge? What drives demand for financial services in emerging markets? *Journal of Finance*, 66(6), 1933–1967. <https://doi.org/10.1111/j.1540-6261.2011.01696.x>
- Coleman, J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology*, 94(Supplement), S95–S120. <https://doi.org/10.1086/228943>
- Demirguc-Kunt, A., & Klapper, L. (2018). Financial inclusion and inclusive growth: A review of recent empirical evidence. World Bank.
- Freeman, R. E. (1984). *Strategic Management: A Stakeholder Approach*. Pitman.
- Hikouatcha, P., Dzaka-Kikouta, T., & Nguimkeu, P. (2024). Does culture empower inclusive finance? *Journal of Innovation and Entrepreneurship*, 13, 31. <https://doi.org/10.1186/s13731-024-00306-y>
- Hikouatcha, P., Dzaka-Kikouta, T., & Nguimkeu, P. (2024). Does culture empower inclusive finance? Empirical evidence from Cameroonian small businesses. *Journal of Innovation and Entrepreneurship*, 13, 31. <https://doi.org/10.1186/s13731-024-00306-y>
- Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47(2), 263–291. <https://doi.org/10.2307/1914185>

- Lusardi, A., & Mitchell, O. (2014). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature*, 52(1), 5–44.
- Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature*, 52(1), 5–44. <https://doi.org/10.1257/jel.52.1.5>
- Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature*, 52(1), 5–44. <https://doi.org/10.1257/jel.52.1.5>
- OECD. (2014). *Financial literacy and inclusion: Results of OECD/INFE survey*.
- Putnam, R. D. (1993). *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton University Press.
- Raji, A. A. H., & Others. (2024). The effect of national cultural values on financial inclusion: An international perspective. *Futurity Economics & Law Journal, FEL*, Article 222. <https://www.futurity-econlaw.com/index.php/FEL/article/view/222>.
- Rogers, E. M. (2003). *Diffusion of Innovations* (5th ed.). Free Press.
- Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). Free Press.
- Saudi Central Bank. (2024). *Financial stability report 2024*. Riyadh: Author.
- Standard & Poor's (2017). *Global Financial Literacy Survey*.
- World Bank. (2022). *The Global Findex database 2021: Financial inclusion, digital payments, and resilience in the age of COVID-19*. World Bank. <https://doi.org/10.1596/978-1-4648-1897-4>
- Yoshino, N., & Morgan, P. (2016). Overview of financial inclusion, regulation, and education. ADBI Working Paper Series.