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## Research Article

# The Impact of Financial Services Access on Household Entrepreneurship in Ethiopia

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**KEYWORDS:** Financial inclusion; Entrepreneurship; Interest-free banking; Digital finance; Ethiopia; Logistic regression

### Abstract

*This paper analyzes the influence of financial accessibility on entrepreneurship in small business ownership in Ethiopia, using data from the World Bank's Ethiopia Socioeconomic Survey of 2018-2019. The analysis seeks to find out whether different financial services, including using ATM cards, online banking, mobile banking, and agent banking influence household business ownership. The methods used in this study include descriptive statistics, as well as binary logistic regression analysis. The analysis of results reveals that urban location, and proximity to financial institutions have a significant positive association with entrepreneurship, whereas interest-free banking has a significant negative association. Variables, including other measures of financial access, such as ATMs, mobile, online, and agents, have insignificant positive relationships. The results imply that financial inclusion does not essentially influence entrepreneurship but depends upon the functional form of financial services, either as a facilitator or as a barrier to entrepreneurship in different contexts. From this study, it is clear that for Ethiopia to grow in terms of entrepreneurship, a combination of infrastructure development in financial sectors, as well as improvement in financial literacy, and an overhaul of interest-free banking to accommodate small to micro-enterprises, is necessary.*

## 1 Introduction

Increasingly, the concept of entrepreneurship is becoming a driving factor in economic expansion, job creation, and innovation in emerging countries. In countries such as Ethiopia, where a substantial section of the working population is considered to be underemployed or involved in the informal sector as a means of livelihood, small business start-ups act as a foundation stone of sustained economic and social development. Nonetheless, business start-ups and business sustainability are impeded by several challenges. Among them is limited or inadequate access to suitable financial services. An understanding of how differing mechanisms in financial services impact business start-up is thus of profound value.

Evidence from previous studies emphasizes finance as a stimulant in entrepreneurship. Research trends analysing financial inclusiveness and entrepreneurship have provided

evidence that increasing credit, savings, and payment facilities to all segments of society will have a positive effect on entrepreneurship (Asongu & Odhiambo, 2020; Elouaourti & Ibourk, 2024). Currently, digital technology has transformed how entrepreneurs use finance provided by financial institutions using the internet, mobile, and agent networks. In Sub-Saharan countries, initiatives such as mobile banking and agency banking have increased financial inclusiveness in society, but their effect on entrepreneurship is a subject of discussion (Demirgüç-Kunt et al., 2022). In Ethiopia, increasing initiatives designed by the Ethiopian Government to make the current finance system more inclusive have increased opportunities for entrepreneurship.

Despite increased focus on financial inclusion, studies that examine the impact of alternative channels of accessing financial services, such as ATMs, online banking, mobile banking, agent banking, and interest-free banking in Ethiopia for entrepreneurship formation remain limited. Currently, studies have overwhelmingly highlighted microfinance institutions and financial literacy within Ethiopian research confines (Meressa, 2023; Mossie, 2022). Nonetheless, this study considers that such current research approaches neglect alternative channels that influence entrepreneurship activities. In essence, current studies have also considered accessing financial services as one factor without considering or distinguishing between channels such as ATMs or online banking systems.

This paper will bridge that gap by analysing how the usage of financial services is related to business start-ups in small firms in Ethiopia based on a country-level data set of households surveyed in the World Bank's Socio-Economic Survey. In particular, based upon theories of Financial Inclusion and Pecking Order Theory, it will analyse how different types of financial services affect people's decisions to start new business enterprises. By employing descriptive statistics and binary logistic regression analysis, it will measure how significant each type of service is compared to others.

## 2 Literature Review and Hypotheses Development

### 2.1 Theoretical Background

Finance and entrepreneurship are interconnected themes in the economics of development. According to the Financial Inclusion Theory, increasing access to financial services of formal regulated institutions empowers entrepreneurs and businesses in a company to pursue investment opportunities, build capital, and mitigate risks (Sarma & Pais, 2011). Access to all possible types of financial infrastructure, including savings, loans, insurance, and payment services, of course, alleviates liquidity constraints and facilitates greater participation in entrepreneurship. Similarly, according to the Pecking Order Theory, because of greater intrinsic reliability, entrepreneurs will tap internal capital sources. Nevertheless, when their sources become inadequate, they will pursue external sources of finance (Myers & Majluf, 1984).

In emerging economies, one of the challenges that hinders entrepreneurship is financial exclusion (Asongu & Odhiambo, 2020). New approaches in finance, including mobile banking, agency banking, and interest-free banking, have emerged as an alternative to existing finance systems. Savings and credit programs are now widely accessed through such approaches, especially by females, youth, and rural dwellers (Demirgüç-Kunt et al., 2022). This aspect of integrating such programs into the entrepreneurship environment enables inclusive economic growth by allowing families to turn their savings into productive projects (Elouaourti & Ibourk, 2024).

## 2.2 Empirical Evidence on Financial Services and Entrepreneurship

Empirical studies have repeatedly verified that accessibility of finance is one of the most influential determinants of entrepreneurship. To exemplify, [Beck et al. \(2008\)](#) ascertained that financial development encourages business formation in 74 countries, whereas recently, accessibility of finance, or more precisely, accessibility as regards finance, has been stressed as an empowered tool for entrepreneurs ([Ayyagari et al., 2021](#)).

In the African context, it has been made clear that financial inclusion serves as a mediating factor between contextual considerations and entrepreneurial willingness, as [Elouaourti and Ibourk \(2024\)](#) explain. Also, the application of specialized financial services, including gender-sensitive products, is essential, as indicated by [Akram and Sanyal \(2022\)](#), as they can boost women's involvement as entrepreneurs, as observed in Ethiopia. Financial education and technology can determine financial inclusion success, as stressed by [Wiquar et al. \(2022\)](#), especially during economic shocks, as experienced during the pandemic of COVID-19.

Although these studies recognize the importance of inclusive finance, most of them use financial access as a single composite indicator that overlooks the heterogeneous effects of specific financial service types such as ATM, mobile, online, interest-free, and agent banking. The present study tries to fill this gap by investigating the specific contribution of each of these services to entrepreneurial start-ups in Ethiopia.

## 2.3 Financial Services and Start-up Formation in Emerging Economies

Financial services relate to entrepreneurship through several means. Efficiency and outreach of financial systems can be significantly improved through digital and structural financial systems, especially within Sub-Saharan Africa ([Donou-Adonsou, 2025](#)). Financial services also promote financial inclusion, which fosters access to start-up capital, and access to capital is an essential element of starting a business. Online or mobile banking helps small businesses conduct low-cost transactions, market their products, and record their financial transactions. Agent banking helps extend formal banking services to rural and distant locations, thereby bridging distances and improving small business liquidity. Islamic or interest-free banking provides financially sustainable, religion-compliant financial choices, which increase accessibility to people who were previously barred ([Ahmad et al., 2023](#)). All these have a resultant effect on one's ability and willingness to become an entrepreneur.

However, conclusive empirical studies have been minimal, especially within Ethiopia. Although it has been indicated that financial literacy has a positive effect on small businesses, as indicated by [Meressa \(2023\)](#), little research has been carried out on differentiated financial services and their contribution towards influencing new business creation choices.

## 2.4 Conceptual Framework

Based on theories and evidence that have been reviewed, this study proposes that having access to financial services increases the chances of entrepreneurs by removing liquidity problems through reducing the costs of transactions and boosting financial capability. Figure 2.1 shows the conceptual framework that connects the influence of having access to financial services (ATM, online, mobile, through an agent, and without any interest charges on banking facilities) on entrepreneurs' venture creation, and its moderators that include age, gender, residence, and proximity to financial institutions.

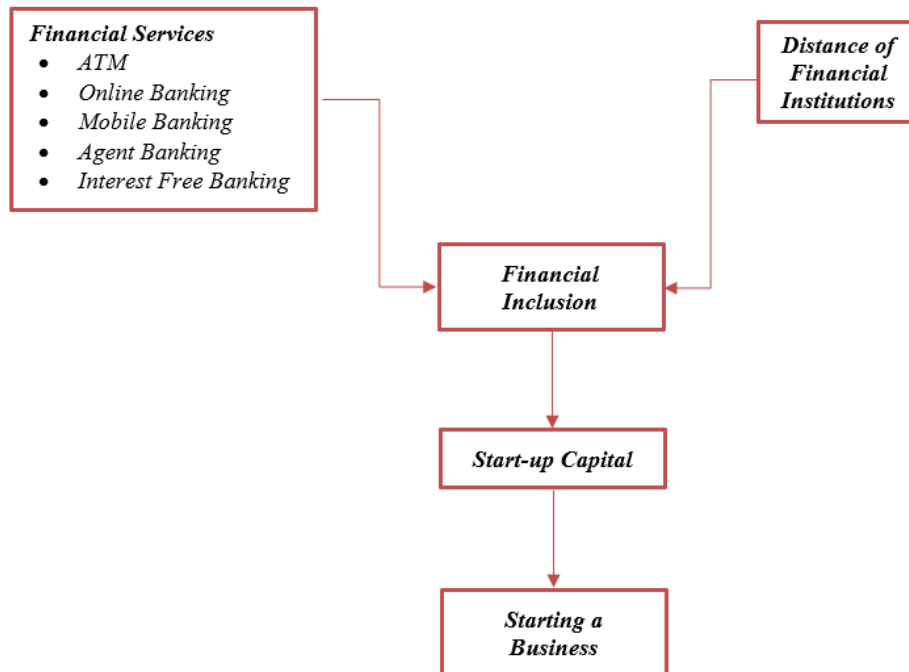


Figure 1: conceptual framework of the study

## 2.5 Hypotheses Development

Informed by the above theoretical and empirical discussions, this paper formulates seven hypotheses that assess the linkages among access to financial services, spatial attributes, and household entrepreneurship in Ethiopia. The hypotheses are based on sound theoretical foundations, as well as existing empirical data from both Sub-Saharan Africa and other comparable developing contexts.

Table 1: Hypotheses of the Study

No.	Hypothesis	Expected Relationship
H1	Urban households are more likely to start a business than rural households.	Positive
H2	The use of ATM services positively affects the decision to start a business among households.	Positive
H3	Use of online banking positively influences the likelihood of starting a business.	Positive
H4	Mobile banking usage positively affects entrepreneurial start-up decisions.	Positive
H5	Access to agent banking services increases the probability of starting a business.	Positive
H6	Participation in interest-free banking positively influences business start-ups.	Positive
H7	Greater distance from a financial institution reduces the likelihood of starting a business.	Negative

### 2.5.1 H1: Urban households are more likely to start a business than rural households

A spatial-institutional view also provides a powerful theory for the variation of entrepreneurship across urban and rural areas. Cities have several structural advantages that lower the barriers to starting a business. First, urban markets are denser, they have larger market bases that make it easier for entrepreneurs to reach economies of scale, and they simply reduce the risk of demand shortages (Naudé et al., 2008). Second, urban areas offer better access to formal institutions, including financial services, regulatory agencies,

business development services, and a legal system that can help to register a business, enforce contracts, and obtain credit (Gebreeyesus & lizuka, 2012).

In their study on the rural non-farm enterprises in six African countries, including Ethiopia, Naudé et al. (2008) noted that rural businesses tend to be small and seasonal and have a bias towards subsistence and not growth due to market limitations and weak institutional support in rural settings. Such trends suggest that entrepreneurship in rural areas is largely necessitated by need and risk diversification. Gebreeyesus and lizuka (2012) analyzed the institutional setting facing entrepreneurs in Ethiopia. The above findings conform to general knowledge about the significant role that agglomeration economies, which include markets, institutions, and networks, play in increasing the success of entrepreneurship in developing nations.

### *2.5.2 H2: The use of ATM services positively affects the decision to start a business among households*

Automated teller machines (ATMs) are a fundamental element of contemporary financial infrastructure, significantly affecting transaction costs and liquidity management for aspiring enterprises. From a transaction cost perspective, ATMs substantially reduce the time and monetary costs associated with accessing cash, making deposits, and checking account balances by removing dependence on bank branches with limited operating hours (Schaner, 2017). From the standpoint of financial inclusion theory, ATMs expand the functional reach of formal banking systems by enabling households in areas with sparse branch coverage to maintain bank accounts and accumulate savings that can be mobilized for productive investment (Asongu & Odhiambo, 2020).

### *2.5.3 H3: Use of online banking positively influences the likelihood of starting a business*

The online (internet) banking channel is a growing digital platform through which entrepreneurs are able to minimize time lag and transportation costs, thus removing the obstacles that hinder the process of creating a business. Within transaction cost economics theory, online banking allows entrepreneurs to observe whether suppliers are paid, make transactions, check account balance, and even maintain multiple accounts online in an effective way, reducing the reliance on physical bank branches and minimizing opportunity costs (Agbeve et al., 2025).

Nevertheless, there are useful insights provided within other streams of literature in this regard. In terms of adopting fintech services in Sub-Saharan Africa, studies show that entrepreneurs may be able to benefit from such technologies for their business operations provided that sufficient digital literacy and infrastructures are present (Asongu & Odhiambo, 2020). As such, in their research, the authors found that the penetration level of mobile money was positively associated with innovation effects on firm creation and development in Sub-Saharan countries.

### *2.5.4 H4: Mobile banking usage positively affects entrepreneurial start-up decisions*

From a theoretical perspective, mobile financial services lower several constraints on entrepreneurship simultaneously. By enabling payments, transfers, and balance inquiries via mobile phones, they sharply reduce transaction and travel costs while minimizing reliance on cash-based transactions (Asongu & Odhiambo, 2020). These platforms also

enhance working capital management through real-time transaction records and rapid payment capabilities—features that are especially valuable for small firms operating with narrow margins. Demirgüç-Kunt et al. (2022) documented that the rapid expansion of mobile money in Africa and its association with greater financial inclusion among youth, women, and rural populations—groups with substantial but traditionally untapped entrepreneurial potential. Regarding the Ethiopian financial landscape, the introduction and rapid expansion of services such as Telebirr and M PESA suggest a growing role for mobile banking in supporting household entrepreneurship. Although the 2018–2019 data capture mobile banking at an early stage of diffusion (8.1 percent usage), both theoretical mechanisms and regional evidence point to a positive relationship between mobile financial services and entrepreneurial start-up decisions as adoption and digital capabilities deepen.

### *2.5.5 H5: Access to agent banking services increases the probability of starting a business*

According to Mashizha et al. (2024) and Asongu and Odhiambo (2020), agent banking attempts to address some principal obstacles to financial inclusion by solving the problem of spatial mismatch between the financial services and the potential customer base through transaction cost theory. Specifically, by limiting time and travel expenses associated with visiting financial institutions, agent banking creates more incentives for people to use formal banks, especially in the rural and peri-urban areas of Ethiopia, where there are fewer branches. As a result, entrepreneurs gain the ability to handle their cash flow management, make payments to suppliers, and collect revenues, thus improving their chances to accumulate their startup capital. Aside from cost reduction, it may be assumed that, as local agents, the staff members of these institutions become more reliable individuals and, therefore, ease any psychological barriers to using the services provided. Moreover, as the literature on financial inclusion states, these institutions are highly effective in offering financial services without expensive infrastructure.

This argument is proven empirically in Sub-Saharan Africa. Namely, Mashizha et al. (2024) state that SMEs use agent banking to compensate for the sparse banking network to obtain better transaction management. The same trend appears in mobile money agents operating in Kenya, according to which financial inclusion rates and entrepreneurship rates grow along with agent concentration. In relation to Ethiopia, it can be stated that although only 1.6% of the population uses agent banking as of 2018-2019, the government aims to increase access.

### *2.5.6 H6: Participation in interest-free banking positively influences business start-ups*

Interest-free (Islamic) banking provides an alternate financial system rooted in Sharia rules prohibiting interest but allowing for profit-sharing, collateral-based financing, and risk-sharing. In theory, interest-free banking could stimulate entrepreneurship through a number of means. First, it broadens access to financial services by including populations who stay away from mainstream banking because of their faith or ethics, thus raising the share of households that have access to financial services (Imam & Kpodar, 2016). Second, since interest-free loans are tied to financial instruments like Mudaraba (profit-sharing), Musharaka (partnership), and Murabaha (cost-plus financing) and involve risk-sharing, interest-free banks should lower moral hazards and adverse selection issues common to regular lending systems (Imam & Kpodar, 2016). Third, since interest-free financial instruments are collateralized, this would allow entrepreneurs who own valuable assets but cannot provide traditional types of collateral to obtain financing

more easily. Finally, interest-free banking, being associated with ethical and participative approaches to financing, could lower psychological barriers that may prevent believers from looking for outside funding because they would prefer to use informal financial services or self-finance. According to financial inclusion theory, interest-free financial services provided in accordance with certain culture or religion could broaden access and use among excluded individuals (Abor et al., 2018).

### *2.5.7 H7: Greater distance from a financial institution reduces the likelihood of starting a business*

Transaction cost theory is the primary theoretical framework for analyzing the relationship between physical distance and financial institutions. In particular, physical distance increases the time, financial, and opportunity costs of accessing financial services, including opening an account, depositing and withdrawing money, requesting loans, and seeking financial advice (Naudé et al., 2008). The high costs are especially detrimental to potential entrepreneurs since they undertake many financial transactions while having limited time for household and business-related work. Furthermore, increased physical distance increases the cost of information acquisition and monitoring processes, thus making it harder for financial institutions to evaluate the creditworthiness of customers and for entrepreneurs to build trust with loan officers, resulting in restricted access to business credit. The spatial-institutional theory also holds that the proximity of financial institutions is often correlated with the proximity of other market institutions and infrastructure, causing additional challenges for people living far from such facilities (Gebreyesus & Iizuka, 2012; Naudé et al., 2008). Physical distance can also constrain the amount of knowledge on the market, business connections, and examples of entrepreneurship, making it less likely for individuals to have sufficient skills and interest to start a new venture. Financial inclusion theory claims that physical access continues to be a crucial factor in accessing financial services, despite technological advances in finance, since many services, such as loans and business consultations, require face-to-face interaction (Asongu & Odhiambo, 2020).

## **3 Methodology**

### **3.1 Research Design**

In this study, a quantitative cross-sectional research design is employed to investigate the potential relationship between access to financial services and the propensity for enterprise formation in Ethiopia. Additionally, a secondary dataset is used that is provided by the World Bank, allowing for representative data on demographics and behaviour of households, as well as their entrepreneurial and financial habits, providing an apt framework, as it enables one to quantitatively determine some of the impacts of specified financial services on enterprise formation.

### **3.2 Data Source and Sampling**

This research applies data collected through the Ethiopia Socioeconomic Survey conducted by the World Bank in partnership with the Central Statistical Agency (CSA). The survey, conducted in 2018-2019, provides data on a total of 6,770 sampled households, including rural and urban areas of all study regions in Ethiopia. To be more descriptive,

this survey applied a stratified sampling procedure that is quite representative of a national, regional, and urban/rural stratification of Ethiopia. Additionally, after purifying this data by eliminating responses that lacked completion or had inconsistencies, this research applied a total of 6,770 observations from the final cleaned dataset. In addition, the dataset is appropriate for this research because it encompasses a large number of variables regarding household information, financial accessibility, and enterprise operations.

### 3.3 Variables and Measurement

#### 3.3.1 Dependent Variable

**Entrepreneurship (BUS\_START):** A binary variable coded 1 if the household reported starting a new business during the reference period and 0 otherwise.

The present paper follows a specific conceptualization of the concept of entrepreneurship, which is defined as the creation of new ventures. Although the importance of the concept of entrepreneurship is widely recognized, considering it as a complex concept that embraces the creation of opportunity, value, and innovation, the creation of new ventures is one of the more concrete aspects of the concept, especially in the context of the economies of developing countries, where the creation of formal enterprises is considered crucial for the development of the economy (Ratten, 2023).

#### 3.3.2 Independent Variables

The main explanatory variables measure access to various financial services, each represented as binary indicators, are listed in the table below:

Table 2: Variables of the Study

Variable	Description	Expected Sign
ATM	1 = Household uses automated teller machines; 0 = otherwise	+
Online Banking (OB)	1 = Uses online banking services; 0 = otherwise	+
Mobile Banking (MB)	1 = Uses mobile banking or mobile money services; 0 = otherwise	+
Agent Banking (AB)	1 = Uses agent or correspondent banking services; 0 = otherwise	+
Interest-Free Banking (IFB)	1 = Uses Islamic or interest-free banking services; 0 = otherwise	+
Distance to Financial Institution (DIST)	Distance (in kilometers) to the nearest financial institution	-

#### 3.3.3 Control Variables

To isolate the effects of financial services, several control variables were incorporated:

- Gender (1 = male, 0 = female)
- Age (years)
- Education (years of formal schooling)
- Household size (number of members)
- Residence (1 = urban, 0 = rural)
- Household income (annual total income in Ethiopian Birr)

### 3.4 Model Specification

Given the binary nature of the dependent variable, the study uses a binary logistic regression model to estimate the probability that a household starts a business as a function of its access to financial services and other control factors. The model is expressed as:

$$\text{logit}(P_i) = \ln\left(\frac{P_i}{1 - P_i}\right) = \beta_0 + \beta_1 ATM_i + \beta_2 OB_i + \beta_3 MB_i + \beta_4 AB_i + \beta_5 IFB_i + \beta_6 DIST_i + \gamma X_i + \varepsilon_i \quad (1)$$

Where:

- $P_i$  = Probability that household  $i$  starts a business,
- $X_i$  = Vector of control variables,
- $\varepsilon_i$  = Random error term.

The coefficients ( $\beta$ ) represent the change in the log-odds of business start-up for a one-unit change in the explanatory variable. Odds ratios are reported for interpretability.

### 3.5 Data Analysis Procedures

Data analysis was conducted with the help of the SPSS software package version 27, with the inclusion of descriptive statistics, followed by cross-tabulations and chi-squared tests to observe the early relationships between variables of financial access for entrepreneurs. The hypothesis testing was conducted with binary logistic regression, with the inclusion of Hosmer and Lemeshow Goodness-of-Fit Test, Nagelkerke's Pseudo  $R^2$ , Classification Accuracy, as well as Variance Inflation Factor tests to assess multicollinearity among the variables involved, with all VIFs ranging below 2.5, suggesting the absence of serious multicollinearity problems. The analysis uses the 1%, 5%, or 10% significance levels.

## 4 Results of the Study

### 4.1 Descriptive Analysis Results

Table 3 above summarizes the main variables of the study, derived from 6,770 households. From the table, it is evident that approximately 11.2 percent of Ethiopian households operated a non-agricultural enterprise, while only 4.2 percent used online banking. Mobile banking and interest-free banking usage stood at 8.1 percent and 8.0 percent, respectively, whereas agent banking was the least utilized service (1.6 percent). These patterns highlight substantial disparities in the adoption of financial innovations across households.

Table 4 presents the bivariate correlations between household entrepreneurship and the other financial service indicators. The findings indicate that a significant relationship exists between entrepreneurship and most indicators for accessing finance, except online banking. The proportion of households involved in business activities remained higher among those making use of ATM, 29.4% compared to non-users, 20.1%. The result is

Table 3: Descriptive Statistics of Key Variables ( $N = 6,744$ )

No.	Variable	Description	Category	Frequency	Percent
1	Entrepreneurship	Household owns a non-agricultural business	Yes	758	11.2
			No	5,986	88.8
2	ATM/ Debit Card Use	Household used ATM or debit card in the past 12 months	Yes	1,428	21.2
			No	5,316	78.8
3	Online Banking Use	Household used online banking services	Yes	284	4.2
			No	6,460	95.8
4	Mobile Banking Use	Household used mobile banking or mobile money	Yes	545	8.1
			No	6,199	91.9
5	Agent Banking Use	Household used agent/correspondent banking	Yes	106	1.6
			No	6,638	98.4
6	Interest-Free Banking Use	Household used Islamic or interest-free banking services	Yes	541	8.0
			No	6,203	92.0

Source: Author's computation from the 2018–2019 Ethiopia Socioeconomic Survey (World Bank).

Table 4: Crosstabulation of Entrepreneurship and Financial Access Variables ( $N = 6,744$ )

No.	Financial Service	% of HH owning a business (users)	% of HH owning a business (non-users)	Pearson $\chi^2$	p-value	Sig.
1.	ATM Card	29.4%	20.1%	34.78	0.000	***
2.	Online Banking	5.3%	4.1%	2.41	0.121	n.s.
3.	Mobile Banking	11.1%	7.7%	10.35	0.001	**
4.	Agent Banking	2.5%	1.5%	4.82	0.028	*
5.	Interest-Free Banking	13.9%	7.3%	39.34	0.000	***

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ ;

Author's computation from the 2018–2019 Ethiopia Socioeconomic Survey (World Bank).

significant as indicated by the value of the chi-square statistic,  $\chi^2 = 34.78$ ,  $p < 0.01$ , suggesting that having easy access to banking services promotes management of savings, as well as trade, required for starting a business. Similarly, mobile banking account holders were also significantly more likely to have a business than those without accounts, 11.1% compared to 7.7% respectively,  $\chi^2 = 10.35$ ,  $p < 0.01$ . This result also supports the point that mobile-operated finance services help start a small-scale business, as long as the service provides a convenient means of making payments. Agent banking showed a positive, though weaker, relationship ( $\chi^2 = 4.82$ , significance  $p < 0.05$ ), suggesting the positive effects of proximity finance on accessibility. The importance of culturally tolerant, religion-considerate financial services appears underscored in interest-free banking, as it showed the strongest relationship result ( $\chi^2 = 39.34$ , significance  $p < 0.01$ ), as it significantly showed a near doubling propensity of owning a business amidst those families utilizing said services, from 13.9% to 7.3%. On the other hand, online banking had no significant relationship ( $\chi^2 = 2.41$ ,  $p = 0.121$ ), which depicts the fact that online banking in Ethiopia is in its rudimentary stages.

In Conclusion, based on the crosstab results, it appears as though accessibility in the form of mechanisms, such as agent banking and interest-free banking, as opposed to

technology-driven mechanisms, has a much more important role to play in encouraging entrepreneurship. All these findings agree with the views of Elouaourti and Ibourk (2024) and Akram and Sanyal (2022), on the fact that the success of financial inclusion does not only rely on technology, but on inclusiveness as well as cultural adaptation.

## 4.2 Inferential Results

The binary logistic regression analysis was used to explore how access to various financial services and residence are related to the propensity to own or establish a non-agricultural enterprise in Ethiopia. The dependent variable was business ownership by households (1 = owns or has started a business, 0 = not owning or having started a business). In contrast, the independent variables were represented by ATM/debit card use, online banking use, mobile banking use, agent banking use, interest-free banking use, distance to the nearest financial institution, and residence (urban or rural).

### 4.2.1 Model Fit and Diagnostics

The Omnibus test results of the analysis show that the model is significant with  $\chi^2 = 208.97$ ,  $df = 7$ , and  $p < 0.001$ . This implies that it is significant to include all variables because it jointly increases the model compared with the null model. The Nagelkerke  $R^2 = 0.061$  implies that this model can jointly explain about 6.1% of business ownership variance. Despite this relatively low value for pseudo-R-squared, it is acceptable for a big dataset with socioeconomic variables.

The Hosmer and Lemeshow test showed that  $\chi^2 = 13.89$  ( $p = 0.085$ ), which is good because  $p > 0.05$ . The model's classification accuracy is 88.8%, which is correct because it predicted nearly nine out of ten household outcomes.

### 4.2.2 Interpretation of Results

Table 5: Results of Binary Logistic Regression Analysis

Variables	B	Sig.	Exp(B)	Interpretation
ATM Card	-0.043	0.681	0.958	No significant effect on business ownership.
Online Banking	0.293	0.207	1.340	Positive but not statistically significant.
Mobile Banking	0.038	0.823	1.038	No meaningful relationship detected.
Agent Banking	-0.170	0.585	0.843	Not significant; low usage may limit effect.
Interest-Free Banking	-0.512	0.000	0.599	Significant negative association ( $p < 0.01$ ).
Distance to Financial Institution	-0.002	0.040	0.998	Significant ( $p < 0.05$ ); longer distances reduce business ownership.
Residence (Urban = 1)	1.049	0.000	2.856	Strong positive effect; urban households are nearly 2.9× more likely to start a business.

Source: Author's computation from the 2018–2019 Ethiopia Socioeconomic Survey (World Bank).

The data analysis in Table 5 shows that living in an urban area or being close to financial institutions increases one's chances of owning a business in Ethiopia. Households living in an urban area are 2.86 times more inclined to establish or possess a non-agricultural enterprise compared to rural households ( $p < 0.01$ ). Also, the small but significant negative effect confirms that financial proximity continues to serve as an important determinant.

In contrast to expectations, interest-free (Islamic) banking had a statistically significant but negative coefficient ( $\text{Exp}(B) = 0.599$ ,  $p < 0.01$ ), which suggests that those who use these services are less likely to own a non-agricultural business enterprise. This result could illustrate a selection issue wherein those who are budgetarily risk-averse prefer interest-free savings but are less involved with other business ventures. It could also demonstrate that Islamic banks in Ethiopia are not yet fully involved with financial services that are focused on business, but are more involved with savings.

The other variables that make up financial access—mobile money services, online services, and agents—were not statistically significant. It can thus be observed that access to digital or transactional financial services does not necessarily lead to increased participation in entrepreneurship. Low financial literacy, poor business credit integration, or being in the infancy stage of a digital finance environment might hamper these.

Regarding use of ATM services, the crosstabulation analysis revealed a positive correlation between variable it and the dependent variable. However, the binary logistic regression revealed that use of ATM services was not statistically significant to the dependent variable after controlling for other variables. This shows that the initial bivariate relationship may have been influenced by other variables or by the collective contribution of the predictors. This justification works for Interest-Free Banking, which has significant negative association the dependent variable.

## 5 Discussions and Implications

### 5.1 Overview of Key Findings

The findings offer an insight into the effect that various types of financial inclusion may have on small business entrepreneurship in Ethiopia. They also show that urban residence and financial institutions' proximity are key predictors with regard to household businesses' ownership; however, Islamic banking is significant with a negative coefficient. However, the outcome has shown that digital banking services such as internet banking, mobile banking, and agent banking are significant with positive coefficients that are statistically insignificant.

### 5.2 Comparison with Previous Studies

The results are in line with the existing evidence that highlights financial inclusion promotes entrepreneurial activities and that the availability of credit and saving services is sufficient (Ayyagari et al., 2021; Beck et al., 2008). But the insignificant impact of digital financial services, such as mobile and internet banking, is supported by those studies that argue that technology cannot lead to financial inclusion without the intervention of financial literacy (Elouaourti & Ibourk, 2024).

The negative impact of interest-free banking on entrepreneurship fails to conform to some hypotheses but confirms that of Akram and Sanyal (2022), who found that Islamic banking in Ethiopia has been unexplored and mainly focuses on savings. This might be the reason that people utilizing such banking are less involved in entrepreneurial activities. The positive but insignificant impact of mobile and agent banking facilities is supported by Wiquar et al. (2022), who concluded that, though there has been growth in financial literacy and digital banking. Financial inclusion during the COVID-19 era in India was still impeded by the level of usage.

### 5.3 Theoretical Implications

This research yielded important contributions to the burgeoning literature on financial inclusion and entrepreneurship, particularly as they relate to low-income countries, by articulating two crucial insights emerging out of theoretical frameworks.

Firstly, proximity-based accessibility or distance and urban versus rural residence, continues to play a paramount role in driving the results associated with financial inclusion, even amidst digitization progress. This confirms the spatial-institutional theory that suggests proximity to financial institutions is vital to fully engage with entrepreneurial activities.

Second, the results show that the contextual and cultural factors represented by the structure of interest-free banks can have a mediator effect between financial inclusion and entrepreneurship. The implications are that financial inclusion, as a homogeneous concept, should not be universally applied but require adaptation according to the particular context.

### 5.4 Policy and Practical Implications

Some key policy implications are as follows:

- **Enhance physical and agent-based financial infrastructure** - the strong role of proximity and the limited role of technology suggest that Ethiopia should continue to focus on agent banking and micro-branches as a part of its strategy toward financial inclusion.
- **Enhance financial literacy with a business perspective** - the limited impact of ATM, online, and mobile banking capabilities on entrepreneurship suggests a lack of competence among users to fully integrate technology into their entrepreneurial activities. The entrepreneurial potential of financial access can be enhanced by specialized financial education initiatives focused on budgeting, credit, and account management technology.
- **Develop and diversify interest-free financial services** - The negative implication of interest-free banking hints at the necessity to re-engineer the delivery of Islamic banking services related to funding small-scale as well as micro-enterprises, as opposed to saving deposits. Such customized schemes could draw ethically conscious entrepreneurs into the purview of Sharia-compliant banking services.
- **Utilize linkages between urban and rural households** - the urban household advantage in entrepreneurship highlights the significance of infrastructure, market access, and network economies. Financial integration initiatives between rural and urban areas, including shared service platforms or lending schemes, may help eliminate this gap.

## 6 Conclusion and Recommendations

### 6.1 Conclusion

The purpose of this paper is to investigate the relationship between financial access and small business entrepreneurship, focusing on Ethiopia, using data from the 2018-2019 Ethiopia Socioeconomic Survey of the World Bank. While financial access is improving, its potential as a driver for entrepreneurship remains mixed and different across types and

geography. Among the factors that most strongly predict entrepreneurship, irrespective of either urban or rural settings, were residence in an urban area and distance to financial institutions.

Interestingly, interest-free or interest-free banking presented a strong negative correlation with entrepreneurship, implying that, as of now, approaches adopted by Islamic banking institutions in Ethiopia are perhaps not fully developed to favor entrepreneurship. Other financial options, including ATM, internet, mobile, and agent banking, presented a statistically insignificant positive relationship with entrepreneurship, possibly due to a lack of utilization depth, illiteracy, and limited infrastructure, respectively.

The results show that financial inclusion by itself is not a guarantee for entrepreneurship. The effectiveness of this strategy is tied to the applicable context, availability, and pertinence to the economic reality faced by entrepreneurs.

Although the analysis relies on the 2018-2019 Ethiopia Socioeconomic Survey data, it is critical to note that there have been major changes in the country's financial environment. The most notable changes are the accelerated expansion of mobile money services, particularly the growth of Telebirr services; the emergence of new market players, such as Safaricom Ethiopia and its product M-PESA; the expansion of agent banking; the introduction of the Ethiopian Instant Payment System; the development of Digital ID; and the robustness of the policy environment, as captured by the Second National Financial Inclusion Strategy. In comparison to the 2018–2019 timeframe, these advancements are probably going to have increased the role of digital financial services like the Internet, agent banking, and mobile banking in small business operations. In this respect, although the analysis provides useful insights into the country's financial inclusion landscape, the current financial system is likely to produce stronger positive correlations between financial services and household entrepreneurship. It is recommended that future studies, which rely on more recent data, be conducted to capture these major developments.

## 6.2 Recommendations

Based on the results, the following are proposed policies and practical recommendations:

- **Enhance the coverage and operational effectiveness of financial infrastructure** - an increase in the number of rural banks, agents, and mobile agents may alleviate location disparities, hence promoting entrepreneurship in areas with little banking service coverage. The strategy may focus on targeting the rural population by establishing cooperatives or making use of microfinance agents.
- **Financial literacy lessons should be incorporated with entrepreneurship courses** - public institutions, NGOs, and financial service providers should offer training that facilitates a link between financial literacy and enterprise development, including savings, investments, risk, and the use of digital finance.
- **Improving the interest-free banking system to facilitate enterprise funding** - reform Islamic banking to support enterprise finance - the interest-free banking services offered should advance to a level that involves providing financing tools related to Murabaha, Mudaraba, or Ijara, which are suitable for small and micro-enterprises. Such an approach will help harmonize religious financing with entrepreneurial development.
- **Create an inclusive digital finance ecosystem** - E-platforms should be complemented by investment in infrastructure and illiteracy campaigns so that technology becomes a facilitator, rather than just an emblem, of inclusion.

- **Foster interorganizational engagement** - there is a need for collaboration between the National Bank of Ethiopia, the Ministry of Innovation and Technology, and other private financial institutions to support those initiatives that bring innovation, literacy, and financial entrepreneurship as a result of technology growth.

## 7 Limitations and Directions for Future Research

The research is constrained by its dependency solely on a series of secondary, cross-sectional datasets, making a clear cause-and-effect chain impossible to establish. The inclusion of dummy variables to capture financial service availability could further mask the degree or quality of utilization involved either. Moving into the future, longitudinal or hybrid study approaches will allow the behavioural patterns, or even a difference based on varying levels of financial literacy, to be ascertained, establishing a two-way link between digitized financial services and enterprise development. Adding gender dynamics and geographic subsets could further enhance insights into inclusion-entrepreneurial linkages.

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### Data Availability

Data can be made available on the behavior of the request

### Declaration of interests' statement

The author declare no competing interests.

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