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Determinants of financial inclusion in gulf cooperation council countries

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Abstract

The primary purpose of this study is to investigate the determinants of financial inclusion in the Gulf Cooperation Council (GCC) countries. For this study, we used the Global Findex Database 2017. Since the study variables are binary, we used the Probit method to estimate the results. Our findings show that the number of people who reported having a formal financial institution account increased by 16 percent between 2011 and 2017. At the same time, formal saving and formal borrowing were low in GCC countries compared to the average of high-income countries' average. We also found that financial inclusion is higher for males, older people, more educated people, and higher-income people, while women and younger people are less likely to be financially included in GCC countries. Therefore, FI efforts in GCC should focus on the young and women population as they are most likely to be excluded from the formal financial system. Therefore, tailored products and services that meet the needs of these groups should be designed and promoted to improve FI among them so that their access to and use of financial services are enhanced.

1. Introduction

Financial inclusion is defined as the "process of ensuring that individuals, especially poor people have access to basic financial services in the formal financial sector" (Allen, Demirguc-Kunt, Klapper, & Martinez Peria, 2016). Financial inclusion starts with having a formal account at a bank or any other financial service provider to receive and make payments and save money (Demirguc-Kunt, Klapper, & Singer, 2017), and it also involves accessing credit and insurance (Demirgüç-Kunt, Klapper, Ansar, & Jagati, 2017).

Researchers, lawmakers, regulators, and other financial stakeholders have been deeply interested in and concerned about financial inclusion. It has emerged to be a critical issue for policymakers worldwide, as evidenced by central banks and the World Bank. Financial inclusion is one of the quality dimensions of financial growth that affects a country's economic situation by providing households access to financial goods and services. Empirical studies have shown that levels of financial inclusion (FI) and economic growth have a positive relationship (Kim, Yu, & Hassan, 2018), and improving financial inclusion can also boost growth (Demirguc-Kunt & Levine, 2009). Many developing countries and research institutions have prioritized financial inclusion, and there was a renewed push for it following the 2008 Global Financial Crisis.

Access to financial services is a powerful tool for promoting economic growth, as it enables poor people and other disadvantaged groups to save, access credit, and invest in productive activities. Without access to financial services, individuals are likely to face funding problems in their entrepreneurship ventures. Access to basic financial

services is an essential tool to escape poverty, and those who are financially excluded find it challenging to improve their standard of living (Demirguc-Kunt, Klapper, Singer, Ansar, & Hess, 2018).

Having access to a formal account is a primary step towards financial inclusion. The percentage of adults having a valid account has increased worldwide from 51 percent in 2011 to 69 percent in 2017. Although financial inclusion has improved substantially, this increase is uneven. While in a few economies, account ownership has surged, elsewhere it has been slower, with disparities among males and females and the wealthy and poor. In developed countries account ownership is universal thus all the unbanked are in the developing countries (Demirguc-Kunt et al., 2018).

Saudi Arabia, Bahrain, Kuwait, Oman, Qatar, and the United Arab Emirates formed the Gulf Cooperation Council (GCC) in 1981 as a regional political and economic alliance. The GCC promotes economic, security, cultural, and social cooperation among the six-member states and holds an annual summit to discuss cooperation and regional issues. The GCC countries have approximately half of the world's oil reserves. GCC nations' combined GDP and population are around $3.464 trillion and 54 million, respectively. Countries with similar income levels and economic fundamentals are more financially inclusive than the GCC countries. As per Mialou and Amidzic (2017), GCC countries are on average less financially inclusive than the Advanced Economies (AE). Access to financial institutions indicators shows that on economic fundamentals, the GCC is lagging behind its peers. According to the financial access index, GCC has a less inclusive financial sector than countries with comparable per capita income and economic fundamentals (IMF, 2018a).

Furthermore, though in GCC countries, the commercial branch per 100,000 adults is comparable to Emerging Markets but remains lower than the Advanced Economies (IMF, 2018a). There is a considerable gender gap of 16 percent between males and females. As of 2017, 86 percent of males had a formal account, while only 70 percent of females had a formal account globally. GCC countries like Bahrain, Kuwait, and the United Arab Emirates are more gender-inclusive than Saudi Arabia. The gender gaps are also visible in access to financial services such as credit cards and loans. The high exclusion of the younger generation (15-24-year-olds) is another concern; only 63 percent of youths hold an account. Informal borrowings are more prevalent in GCC; 26 percent of adults borrowed informally as compared to only 16 percent from the formal sector. SMEs are also excluded from formal loans as they availed only 4.5 percent of total loans. Advancement in financial inclusion by a percent, leads to an increase of 0.09 percent in growth. Thus, income in GCC countries can increase annually by 0.3 to 0.7 percent if they achieve financial inclusion to comparable levels of AEs. Also, apart from increasing the overall growth, increased financial inclusion in the GCC countries will also support inclusive growth and narrow the gender gap (IMF, 2018a).

The Arab Monetary Fund's (AMF) Financial Inclusion Task Force (FITF) was established in 2012 with the aim to identify ways to improve financial inclusion in the Arab world. To improve financial inclusion in GCC countries it has undertaken several initiatives such as promoting digital financial inclusion for young people and women; encouraging the use of the latest technologies for inclusion and boosting digital financial literacy. Although financial inclusion has increased in the Gulf Cooperation Council (GCC) countries, there are still gaps in some key areas. In particular, SMEs, women, and youth tend to have limited access to capital. The disparities may be due to social norms, low levels of female labour market participation and private sector engagement, and the high youth unemployment rate (IMF, 2018a). Greater financial inclusion supports growth and will also help in reducing income inequality in GCC countries (IMF, 2018b). The primary purpose of this study is to analyse the determinants of financial inclusion in the GCC countries. We also attempt to investigate the determinants of saving and borrowing behaviour in the GCC countries. An understanding of the determinant of financial inclusion will help identify the groups which are most likely to be excluded. The results of this study would be useful for policymakers and researchers to frame policies to target the financial inclusion excluded groups.

In this research, the financial inclusion measures such as account ownership, savings, credit, ownership, and use of cards are studied using individual characteristics such as gender, age group, education, and employment as the explanatory variables. The financial inclusion of GCC is compared with high-income countries and this study also uses some extra variables such as savings, borrowings, and the ownership and use of cards. The Probit model is used to estimate the determinants of financial inclusion. This study found that financial inclusion is higher for males, older, more educated, and higher-income persons. Also, we find that within the GCC, there are variations in financial inclusion. The empirical literature on the determinants of financial inclusion in the GCC is unavailable and this study will fulfill this gap. This paper is structured as follows. Section 2 presents the literature review and the stylized facts about financial inclusion; Section 3 represents the data sources and methodology; Section 4 presents results and discussion, and Section 5 concludes this paper.

2. Literature Review

There are numerous worldwide, regional, and country-specific studies on the determinant of financial inclusion. The Global Findex database (Findex hereafter) is mainly used to analyse financial inclusion, but some researchers have also used other datasets. Demirguc-Kunt and Klapper (2012a) used surveys of 150,000 adults in 148 countries. They used a comprehensive list of financial inclusion indicators such as an account with a formal financial institution, savings and borrowing through the formal and informal system, credit/debit cards, mortgages, and insurance. Their global financial inclusion study is done every three years, and the data for the 2017 global index is used in this study. Allen et al. (2016) studied financial inclusion through a sample of 124,000 individuals spread across 123 countries using the Demirguc-Kunt and Klapper (2012a) and found that poor, rural, female, and young

individuals are most likely to be excluded. Moreover, increased ownership and accounts use lead to lower account costs and more accessibility to financial intermediaries. Policy measures such as exemption from account opening charges can lower the barriers. Demirguc-Kunt and Klapper (2013) investigated financial inclusion in 148 countries using (Demirguc-Kunt & Klapper, 2012a). They found that income substantially influences financial inclusion and that gender disparities in some countries result from legal discrimination against women. Eldomiaty, Hammam, and El Bakry (2020) studied the impact of world governance indicators (WGIs) as proxies for the effects of governmental, institutional arrangements on financial inclusion and financial indicators. The indicators included borrowings and savings at a financial institution, credit card, and debit card ownership. Using Demirguc-Kunt and Klapper (2012a); Demirgüç-Kunt, Klapper, Singer, and van Oudheusden (2015); Demirguc-Kunt et al. (2018), the results showed that the control of corruption, government effectiveness, political stability, and accountability are the significant factors for financial inclusion. Beck, Demirguc-Kunt, and Martinez Peria (2007) used indicators such as the number of branches, ATMs, number of loan and deposit accounts, and the average loan and deposit sizes to measure financial inclusion. These indicators seem to be complete, but they yield the correct information if and only if they are used together. The study of Honohan (2008) measured financial penetration in 160 countries using the population/households that had a bank account as an indicator. However, as per Sarma (2008), a single indicator means nothing and can sometimes even be incorrect. Apart from holding accounts, FI should also consider the barriers faced. Barriers to financial inclusion may be due to the distance between bank branches and the cost of transactions (Diniz, Birochi, & Pozzebon, 2012); psychological, religious, and other personal barriers (Collard, Kempson, & Whyley, 2001; Kempson, 2006). Thus, measuring only one aspect of financial inclusion may not be sufficient as it ignores other important factors such as cost and usage frequency (Sarma, 2015).

Several region-specific studies have also been carried out using Findex. In Africa, financial inclusion was studied by Demirguc-Kunt and Klapper (2012b). The results showed that informal methods are primarily used to save and borrow. The determinants of financial inclusion in Central and West Africa were also studied by Soumare, Tchana Tchana, and Kengne (2016). They found that individual characteristics such as age, gender, education, employment status, household size, income, location, marital status, and degree of trust in financial institutions influence financial inclusion. Zins and Weill (2016) also investigated the determinants of financial inclusion based on 37 African countries. They used Probit estimation and found that gender, age, and educational levels are essential financial inclusion determinants. Lyons and Kass-Hanna (2021) used the 2014 Findex and macroeconomic indicators to study financial inclusion in the MENA region. Their findings show that poor persons are more likely to be financially excluded and financial literacy results in more savings and lesser borrowings. Shaikh, Ismail, Mohd Shafiai, Ismail, and Shahimi (2016) also found that poor persons are financially excluded in Islamic countries. A comparative study of financial inclusion in countries following Islamic and conventional finance systems was done by Baber (2019) using ten countries from the Global Islamic Finance Report and World Bank. The findings showed that in countries with Islamic finance, women are financially more empowered, and also, there is more inclusiveness.

In country-based studies, financial inclusion in Brazil, Russia, India, China, and South Africa (BRICS) was studied by Fungacova and Weill (2015). They found that the Chinese hold the highest percentage of formal accounts among the BRICS countries, and thus, financial inclusion is higher in China. Davutyan and Ozturkkal (2016) surveyed 2067 Turkish households to investigate factors affecting saving and borrowing behaviour. They used Probit analysis to show that income, education, marital status, and location affect saving and borrowing decisions. The determinants of financial inclusion in Bangladesh were studied by Uddin, Chowdhury, and Islam (2017). For the period 2005–2014, they analysed both supply-side and demand-side determinants of financial inclusion. They found that the supply-side determinants included banks' size, efficiency, and interest rates, while the demand-side determinants were literacy rate and age dependency ratio. Several researchers found that gender is a critical determinant of accessing formal finance in India. As per Ghosh and Vinod (2017), households headed by females are 8% less likely to access formal finance and 6% more likely to access informal finance. Apart from gender (Kaur & Kapuria, 2020) found that education, earnings, consumption, land size, irrigated area, bank penetration, and social caste are essential determinants in financial inclusion. Dar and Ahmed (2021) also studied the determinants of financial inclusion and informal financial activities in India. They used the data related to account ownership, use of accounts for saving and borrowing, ownership, and card usage from Findex 2017. Their study found that gender, age, education, and income significantly impact the various measures of financial inclusion. Furthermore, these factors significantly impact both informal saving and borrowing.

Several scholars have researched the relationship between financial inclusion and economic growth in the nations that make up the Organization of Islamic Cooperation (OIC) and the MENA area. In the Organization of Islamic Cooperation, Kim et al. (2018) investigated the connection between financial inclusion and economic expansion. They discovered that financial inclusion had a favorable impact on economic growth. Neaime and Gaysset (2018) studied financial inclusion in the MENA region. They showed that financial inclusion increases financial stability and decreases income inequality, while population size and inflation escalate income inequality. Also, despite a significant increase in profitability and efficiency, MENA's well-developed banking system still needs to reach the population's underprivileged segments. Emara and El Said (2021) empirically investigated the link between financial inclusion and economic expansion in several MENA nations. They employed several financial inclusion indicators for consumers and businesses in their research using data from 1965 to 2016, including access to credit, bank accounts, ATMs, bank loans for investments, and working capital. The findings

demonstrate the beneficial effects of financial inclusion on GDP and per capita growth, but oversight and regulation are necessary.

Across the globe, the relationship between financial inclusion and economic growth has been investigated by numerous researchers. Sarma (2008), using data from 54 countries, found a significant positive relationship between financial inclusion and the Human Development Index. Researchers Aghion, Boustan, Hoxby, and Vandenbussche (2009) state that financial inclusion leads to more savings and economic growth as more funds are available for investment. In another study, Mandira Sarma and Pais (2011) concluded that financial inclusion diminishes the dominance of informal financial institutions and leads to lesser exploitation and reduced cost of capital. Moreover, financial inclusion increases the availability and dispersion of funds, enabling more firms to avail credit and contribute to economic growth (Ghosh & Vinod, 2017; Gwalani & Parkhi, 2014). Nizam, Karim, Rahman, and Sarmidi (2020a) used a cross-sectional threshold regression technique to study the effect of financial inclusion on economic growth. Their study of 63 countries showed a positive relation with economic growth. Ajide (2020) studied the bearing of financial inclusion on corruption in 13 African countries. The study conducted on the data from 2005 to 2016 found that achieving a threshold level of financial inclusion helps control corruption. In Malaysia, the Philippines, and Vietnam, the effect of access to formal credit on manufacturing firms' growth was studied by Nizam, Karim, Sarmidi, and Rahman (2020b). They found a non-monotonic impact of financial inclusion on the firm's growth, i.e., it is significantly positive below a threshold point, but beyond a certain point, it becomes negative.

Despite the ever-growing importance of the GCC as a significantly growing economic group, surprisingly, no studies have yet been conducted to compare financial inclusion within the GCC. Moreover, many studies have used crude proxies, such as ownership of accounts, to measure financial inclusion. However, this research focuses on a broader set of proxies, such as saving and loan-taking motivation, to study the determinants of financial inclusion. This study is the first of its kind to use Findex data to analyse financial inclusion in the GCC. There remains to date a great need to investigate the determinants of financial inclusion in the GCC due to its specific demography, culture, ethos, and influential tribal system. A constant endeavour is being made to ensure 100% financial inclusion, as most member countries have emphasized the digitalization of the economic setup, specifically the banking sector.

2.1. Recent Trends in Account Ownership and use of Formal Accounts in GCC Countries

There has been statistically significant growth in only two of the five financial inclusion indicators over the period (Appendix 1). In GCC, ownership of formal accounts increased significantly from 64 percent in 2011 to 77 percent in 2014 to 80 percent in 2017. The use of accounts for savings and accounts for borrowings showed a slight increase from 2011 to 2017. Individuals who own a debit card increased from 61 percent in 2011 to 71 percent in 2014 and 77 percent in 2017. While the number of people who own credit, cards fell by three percentage points, from 31 to 28 percent. At the same time, high-income countries have shown a consistent increase in all the five FI indicators for 2011, 2014, and 2017. Also, all the five indicators of FI in the high-income countries are higher than the corresponding ones in the GCC. Therefore, we can state that the FI in GCC lags behind the high-income countries.

2.2. Recent Trends in Saving and Borrowing Behaviours in Gulf Cooperation Council (GCC) Countries

Appendix 2 shows recent trends in saving and borrowing behavior in GCC countries. People save for various reasons, such as retirement, education, health care emergencies, purchase of a house or land. At the same time, they borrow money for business and medical purposes. In 2014, 18 percent of individuals reported having saved for business or farm purposes, which decreased to 15 percent in 2017. From 2014 to 2017, the rate of saving for old age remained constant at 19%. As far as borrowing behaviors are concerned, Findex 2017 identifies three main reasons. These include borrowing for business or farm, medical purposes, and purchasing homes or land. In 2014, 7 percent of respondents had borrowed for business purposes, 11 percent for medical purposes, and 18 percent for home or land purposes. Borrowed for business purposes increased by 11 percentage points in 2017, while borrowing for medical purposes decreased, and borrowing for purchasing homes or land remained unchanged.

3. Data Sources and Methodology

3.1. Data Sources

Data from the most recent Global Financial Inclusion Index survey by the World Bank were used for analyzing financial inclusion in four Gulf Cooperation Council (GCC) nations. This study examined 4,072 observations, with sample sizes 1060, 1000, 1009, and 1003 for Bahrain, Kuwait, Saudi Arabia, and the United Arab Emirates respectively. Oman and Qatar were excluded because the statistics were not available. The data collection methodology followed Demirguc-Kunt et al. (2018). The study analysed various financial inclusion indicators, such as formal accounts, formal saving, formal credit, ownership of debit and credit cards, saving for business or farm purposes, saving for old age, borrowing for business or farm purposes, borrowing for medical purposes, and borrowing to purchase home or land. In addition, individual-level characteristics, such as age, gender, educational attainment, income groups, and employment were also examined.

3.2. Empirical Method

Several researchers have used Probit methods to investigate the determinants of financial inclusion because of the binary nature of the dependent variable (see (Allen et al., 2016; Asuming, Osei-Agyei, & Mohammed, 2019; Dar & Ahmed, 2021; Fungacova & Weill, 2015)). Following the literature, we used the Probit model to estimate the determinants of financial inclusion in this study. We analysed seven financial inclusion indicators: formal account, formal saving, formal credit, ownership and use of debit cards, and ownership and credit card usage. Additionally, we also estimated the saving and borrowing behaviors. For each outcome, we used the following regression equation to estimate the determinants.

$$FI = \propto + \beta_1 Gender + \beta_2 Age + \beta_3 Incomequintiles + \beta_4 Education + \beta_5 Employment + \epsilon \quad (1)$$

3.2.1. Dependent Variables

The financial inclusion analysed in this study were formal account, formal saving, formal credit, ownership, use of the debit card, and ownership and credit card use. The survey questions used to construct the dependent variables are listed in Table 2. The dependent variable takes the value as one if the respondent answers yes, and zero otherwise. Since all the variables are dichotomous, we used the Probit model to estimate a total of twelve equations.

3.2.2. Independent Variables

The explanatory variables in this study are individual characteristics, including gender, age group, education attainment, and employment status. The gender variable is a dummy that takes a value of 1 for females and 0 for males. Age is measured in years. Educational attainment is divided into three categories: primary education, secondary education, and tertiary education with primary education as the reference category. Following previous literature, (see (Allen et al., 2016; Asuming et al., 2019; Dar & Ahmed, 2021; Fungacova & Weill, 2015; Zins & Weill, 2016)), we expect financial inclusion to be higher for higher-income respondents. Income quintiles are also divided into five groups that deal with the background of the individuals. We used four dummy variables (poorest 20%, second 20%, third 20%, fourth 20%) and omitted the wealthiest 20% income quintiles. Following previous literature, we expect that access to and use of financial services relates positively to the respondent's income level. (see (Allen et al., 2016; Asuming et al., 2019; Dar & Ahmed, 2021; Fungacova & Weill, 2015; Zins & Weill, 2016)). Employment indicates 1 if the person is in the workforce and 0 otherwise. Therefore, we expect employment to be positively related to financial inclusion indicators. Their descriptive statistics for these variables are shown in Table 1.

4. Result and Discussion

4.1. Determinants of Financial Inclusion Indicators in Gulf Cooperation Council GCC Countries

Tables 3–14 demonstrate the Probit Model's determinants of financial inclusion. The findings for the factors that determine formal accounts at financial institutions based on unique characteristics are shown in Table 3. Bahrain and Saudi Arabia demonstrate that women are an important factor in formal accounts. Compared to men, women are less likely to have an account at a formal financial institution, while Kuwait, the United Arab Emirates (UAE), and the Gulf Cooperation Council (GCC) countries show no significant results. In Bahrain, Saudi Arabia, and Gulf Cooperation Council (GCC) nations, age is positively and significantly related to ownership of official accounts, while squared age is adversely significant. We discovered that account ownership increases with aging but then decreases as people get older.

Formal accounts show an increase in income, as evidenced by the significant relationship between the poorest 20% and second poorest 20% quintiles and formal accounts in all the GCC countries. The third income quintiles are also significant determinants of formal accounts in Kuwait, Saudi Arabia, and other Gulf Cooperation Council (GCC) countries. Likewise, the coefficients get significantly higher as we move to the higher income quintiles in GCC countries. The likelihood of having an account at a formal financial institution increases with the level of education. Adults who have finished secondary and tertiary education are more likely to have an account. This finding is consistent with earlier studies that show individuals with higher education are more likely to have accounts as compared to those with lower education. In addition, employment is significantly related to ownership of formal accounts in all GCC countries. It means employed individuals are more likely to have an account at formal financial institutions. These results are consistent with previous findings (Allen et al., 2016; Asuming et al., 2019; Dar & Ahmed, 2021; Fungacova & Weill, 2015; Zins & Weill, 2016).

Table 1. Descriptive statistics of the independent variables used in the estimation.

Independent variables	Definition	Bahrain		Kuwait		Saudi Arabia		UAE		GCC	
		Obs.	Mean	Obs.	Mean	Obs.	Mean	Obs.	Mean	Obs.	Mean
Female	Dummy variable equal to one if the individual is a woman, zero otherwise	1,060	0.37	1,000	0.31	1,009	0.36	1,003	0.26	4,072	0.32
Age	Age in numbers	1,060	36.6	1,000	37.98	1,009	32.61	1,003	38.99	4,072	36.29
Income -Poorest 20%	Dummy variable equal to one if income is in the first quintile, zero otherwise	1,060	0.16	1,000	0.16	1,009	0.18	1,003	0.18	4,072	0.17
Income -Second 20%	Dummy variable equal to one if income is in the second quintile, zero otherwise	1,060	0.19	1,000	0.19	1,009	0.18	1,003	0.18	4,072	0.19
Income -Third 20%	Dummy variable equal to one if income is in the third quintile, zero otherwise	1,060	0.20	1,000	0.19	1,009	0.18	1,003	0.20	4,072	0.19
Income -Fourth 20%	Dummy variable equal to one if income is in the fourth quintile, zero otherwise	1,060	0.21	1,000	0.22	1,009	0.22	1,003	0.21	4,072	0.21
Income- Richest 20%	Dummy variable equal to one if income is in the fifth quintile, zero otherwise	1,060	0.24	1,000	0.24	1,009	0.24	1,003	0.22	4,072	0.24
Primary education	Dummy variable equal to one if the individual has completed primary school or less, zero otherwise	1,055	0.05	1,000	0.03	1,009	0.08	990	0.03	4,054	0.05
Secondary education	Dummy variable equal to one if the individual has completed secondary education, zero otherwise	1,055	0.53	1,000	0.53	1,009	0.55	990	0.35	4,054	0.49
Tertiary education	Dummy variable equal to one of the individuals has completed tertiary education or more, zero otherwise	1,055	0.41	1,000	0.44	1,009	0.37	990	0.62	4,054	0.46
In workforce	Dummy variable equal to one if the individual in the workforce, zero otherwise	1,060	0.79	1,000	0.82	1,009	0.78	1,003	0.88	4,072	0.82
Out of workforce	Dummy variable equal to one if the individual out of the workforce, zero otherwise	1,060	0.21	1,000	0.18	1,009	0.22	1,003	0.12	4,072	0.18

Source: World bank global findex database.

Table 2. Descriptive static of dependent variables used in the estimation.

Dependent variables	Bahrain		Kuwait		Saudi		UAE		GCC	
	Obs.	Mean	Obs.	Mean	Obs.	Mean	Obs.	Mean	Obs.	Mean
Formal accounts	1060	0.88	1000	0.84	1009	0.74	1003	0.89	4072	0.84
Formal savings	918	0.39	836	0.36	746	0.22	892	0.33	3392	0.33
Formal credits	921	0.25	839	0.21	745	0.17	892	0.22	3397	0.22
Has a debit card	924	0.98	838	0.98	749	0.92	896	0.95	3407	0.96
Used debit card in the past year	875	0.79	800	0.78	657	0.78	815	0.80	3147	0.79
Has a credit card	922	0.40	836	0.34	746	0.25	894	0.55	3398	0.39
Used credit card in the past year	369	0.86	277	0.92	187	0.84	482	0.89	1315	0.88
For farm or business	1057	0.19	997	0.12	1008	0.20	985	0.18	4047	0.17
For old age	1056	0.20	997	0.16	1005	0.12	998	0.26	4056	0.19
For medical purpose	1058	0.09	999	0.03	1009	0.11	999	0.11	4065	0.08
For farm or business purpose	1057	0.06	997	0.05	1008	0.07	998	0.04	4060	0.059
To purchase home or land	1057	0.33	999	0.15	1006	0.17	996	0.20	4058	0.22

Source: World bank global findex database.

Table 3. Determinants of formal accounts in gulf cooperation council (GCC) countries.

Variables	(Bahrain)	(Kuwait)	(Saudi)	(UAE)	(All GCC)
Female	-0.03*	-0.01	-0.10***	-0.01	-0.01
	(0.02)	(0.02)	(0.02)	(0.03)	(0.01)
Age	0.00***	0.00	0.03***	-0.00	0.00***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Age²	-0.00***	-0.00	-0.00***	0.00	-0.00***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Income – Poorest 20%	-0.08**	-0.22***	-0.20***	-0.07*	-0.19***
	(0.03)	(0.03)	(0.04)	(0.04)	(0.02)
Income – Second poorest 20%	-0.08***	-0.16***	-0.16***	-0.11***	-0.15***
	(0.02)	(0.03)	(0.03)	(0.04)	(0.02)
Income – Third poorest 20%	-0.02	-0.16***	-0.12***	-0.06	-0.12***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)
Income – Fourth poorest 20%	-0.02	-0.05	-0.04	-0.02	-0.04**
	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)
Secondary education	0.04	0.27***	0.06	0.12	0.11***
	(0.03)	(0.05)	(0.04)	(0.10)	(0.03)
Tertiary education	0.14***	0.34***	0.12**	0.19*	0.08**
	(0.04)	(0.05)	(0.05)	(0.10)	(0.03)
In the workforce	0.08***	0.09***	0.15***	0.10**	0.09***
	(0.02)	(0.03)	(0.02)	(0.05)	(0.02)
Observations	1,055	1,000	1,009	990	4,054
Pseudo R^2	0.12	0.16	0.17	0.03	0.03
Log likelihood	-345	-370	-472	-508	-247

Note: On top of the columns are the dependent variables. The first column shows the independent variables. The estimated coefficients are the marginal effects, and numbers in parentheses indicate the standard errors. ***, **, * denote the significance level at 1%, 5% and 10% levels respectively.

Table 4 shows the predictors of having saved with a formal financial institution in the past 12 months. The results reveal that females are negatively related to formal saving in Bahrain, Saudi, UAE, and other Gulf Cooperation Council (GCC), indicating that they are less likely to have saved in the past year than males. Age and squared age are not statistically significant predictors of formal saving in any of the countries. All the income quintiles are significantly associated with formal savings in Bahrain, the UAE, and other GCC countries, with coefficients increasing significantly as income quintiles rise in GCC countries. The probability of formal savings at formal financial institutions also increases with the level of education, as adults who completed secondary and tertiary education are more likely to save formally. Employment is positively associated with formal savings in Kuwait, while other countries show an insignificant relationship.

Table 4. Determinants of formal saving in gulf cooperation council (GCC) countries.

Variables	(Bahrain)	(Kuwait)	(Saudi)	(UAE)	(All GCC)
Female	-0.06*	0.00	-0.08**	-0.04	-0.03*
	(0.03)	(0.03)	(0.03)	(0.03)	(0.01)
Age	-0.00	0.00	-0.00	-0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Age²	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Income – Poorest 20%	-0.23***	-0.18***	-0.05	-0.23***	-0.17***
	(0.05)	(0.05)	(0.04)	(0.05)	(0.02)
Income – Second poorest 20%	-0.08*	-0.09*	-0.09**	-0.15***	-0.10***
	(0.04)	(0.05)	(0.04)	(0.04)	(0.02)
Income – Third poorest 20%	-0.18***	-0.06	-0.03	-0.14***	-0.10***
	(0.04)	(0.04)	(0.04)	(0.04)	(0.02)
Income – Fourth poorest 20%	-0.12***	-0.05	-0.04	-0.08**	-0.07***
	(0.04)	(0.04)	(0.04)	(0.04)	(0.02)
Secondary education	0.21**	-0.02	0.10	0.30*	0.16***
	(0.09)	(0.16)	(0.08)	(0.15)	(0.05)
Tertiary education	0.33***	0.09	0.20**	0.47***	0.28***
	(0.09)	(0.16)	(0.08)	(0.15)	(0.05)
In the workforce	-0.06	0.16***	0.02	0.03	0.02
	(0.04)	(0.05)	(0.04)	(0.06)	(0.02)
Observations	918	836	746	882	3,382
Pseudo R^2	0.04	0.04	0.03	0.06	0.03
Log likelihood	-584	-520	-377	-527	-2061

Note: On top of the columns are the dependent variables. The first column shows the independent variables. The estimated coefficients are the marginal effects, and numbers in parentheses indicate the standard errors. ***, **, * denote the significance level at 1%, 5% and 10% levels respectively.

Table 5. Determinants of formal credit in gulf cooperation council (GCC) countries.

Variables	(Bahrain)	(Kuwait)	(Saudi)	(UAE)	(All GCC)
Female	-0.10***	0.03	-0.10***	-0.00	-0.04**
	(0.03)	(0.03)	(0.03)	(0.03)	(0.01)
Age	0.01**	0.00	0.01**	0.00	0.00***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Age^2	-0.00**	-0.00	-0.00**	-0.00	-0.00**
	(0.00)	(0.00	(0.00)	(0.00)	(0.00)
Income – Poorest 20%	-0.01	-0.19***	-0.01	-0.12**	-0.07***
	(0.04)	(0.05)	(0.04)	(0.04)	(0.02)
Income – Second poorest 20%	-0.03	-0.12***	-0.06	-0.07*	-0.07***
	(0.04)	(0.04)	(0.04)	(0.04)	(0.02)
Income – Third poorest 20%	0.03	-0.02	-0.03	-0.01	-0.00
	(0.04)	(0.04)	(0.04)	(0.04)	(0.02)
Income – Fourth poorest 20%	0.00	-0.03	-0.00	-0.00	-0.00
	(0.04)	(0.03)	(0.03)	(0.04)	(0.01)
Secondary education	-0.08	1.15***	-0.08	0.01	-0.03
	(0.06)	(0.07)	(0.06)	(0.09)	(0.04)
Tertiary education	-0.06	1.14***	-0.03	0.02	-0.02
	(0.06)	(0.08)	(0.06)	(0.09)	(0.04)
In the workforce	0.09**	0.21***	0.19***	0.15**	0.15***
	(0.04)	(0.04)	(0.05)	(0.06)	(0.02)
Observations	921	839	745	882	3,387
Pseudo R^2	0.03	0.05	0.06	0.01	0.02
Log likelihood	-501	-408	-321	-457	-172

Note: On top of the columns are the dependent variables. The first column shows the independent variables. The estimated coefficients are the marginal effects, and the numbers in parentheses indicate the standard errors. ***, **, * denote the significance level at 1%, 5% and 10% levels respectively.

Table 5 shows the result of formal credit obtained from financial institutions in the past 12 months. Our findings for Bahrain and Saudi Arabia show that females are significant determinants of formal accounts, which is consistent with previous studies (Allen et al., 2016; Asuming et al., 2019; Dar & Ahmed, 2021; Fungacova & Weill, 2015; Zins & Weill, 2016). Females are less likely to have an account at formal financial institutions than males, while no significant results were found for Kuwait, United Arab Emirates (UAE), and other Gulf Cooperation Council (GCC) countries. Age is positively and significantly associated with formal credit, while squared age is negatively significant in Bahrain, Saudi Arabia, and other Gulf Cooperation Council (GCC) countries. our results suggest that borrowing from financial institutions increases with age and decreases as people become older. Formal credit also increases with income, as income in the second poorest 20% is significantly related to formal credit in all Gulf Cooperation Council (GCC) countries.

Similarly, education is positively related to formal credit in Kuwait. Employment is significantly and positively associated with formal credit in all the Gulf Cooperation Council (GCC) countries. In short, we can say that in the Gulf Cooperation Council (GCC) countries, employed individuals are more likely to borrow money from formal financial institutions in the past 12 months.

Table 6 displays the results of ownership of the debit card in the Gulf Cooperation Council (GCC) countries. The results indicate that females are significantly associated with ownership of the debit card in Bahrain, while none of the other countries show significant results. This means the probability of having a debit card is higher in Bahrain as compared to other countries. Age is significantly and positively related to having a debit card, except for Bahrain, while squared age has a negative and significant effect on owning a debit card in UAE and Gulf Cooperation Council (GCC) countries. Most of the income groups are insignificantly associated with debit cards. Secondary and tertiary education are significantly related to ownership of the debit card in Kuwait, the UAE, and all Gulf Cooperation Council (GCC) countries. We find that the probability of having a debit card increases with an increase in education level. This finding is consistent with earlier studies (Dar & Ahmed, 2021). Similarly, employment shows a significant relation with debit cards except for Kuwait and Saud Arabia.

Table 7 shows the debit card usage in the past 12 months in Gulf Cooperation Council (GCC) countries. The results indicate that females are insignificantly associated with the use of a debit card, except for Saudi Arabia. Age also shows insignificant results, except in Saudi and the UAE, where the probability of using debit cards is higher than in other countries. Most of the income quintiles significantly explain the use of debit cards, with coefficients that get significantly higher as we move to the higher income quintiles in Gulf Cooperation Council (GCC) countries. Education and employment are significantly associated with the use of debit cards in Kuwait, the UAE, and all Gulf Cooperation Council (GCC) countries. The probability of using debit cards increases with education and employment. Although all the Gulf Cooperation Council (GCC) countries are high-income countries, some countries still show lower use of debit card in the past year.

Table 6. Determinant's ownership of debit card.

Variables	(Bahrain)	(Kuwait)	(Saudi)	(UAE)	(All GCC)
Female	-0.01*	-0.00	-0.03	-0.00	-0.01
	(0.01)	(0.00)	(0.02)	(0.01)	(0.00)
Age	0.00	0.00*	0.00*	0.00**	0.00***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Age^2	0.00	-0.00	-0.00	-0.00**	-0.00***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Income – Poorest 20%	-0.03*	-0.01	-0.07**	-0.05**	-0.04***
	(0.01)	(0.01)	(0.02)	(0.02)	(0.01)
Income – Second poorest 20%	-0.03*	-0.01	0.04	-0.03	-0.01*
	(0.01)	(0.01)	(0.03)	(0.02)	(0.01)
Income – Third poorest 20%	-0.00	0.01	0.00	0.00	0.00
	(0.01)	(0.02)	(0.03)	(0.02)	(0.01)
Income – Fourth poorest 20%	-0.01	-0.00	-0.00	-0.03	-0.01
	(0.01)	(0.01)	(0.02)	(0.02)	(0.01)
Secondary education	0.00	0.05**	0.01	-0.40***	0.01
	(0.02)	(0.02)	(0.03)	(0.05)	(0.01)
Tertiary education	0.01	0.07**	0.06	-0.37***	0.03**
	(0.02)	(0.02)	(0.04)	(0.05)	(0.01)
In the workforce	0.03***	-0.00	0.01	0.04**	0.02**
	(0.01)	(0.01)	(0.02)	(0.02)	(0.00)
Observations	924	838	749	886	3,397
Pseudo R^2	0.13	0.09	0.10	0.08	0.07
Log likelihood	-93.0	-78.6	-178	-165	-551

Note: On top of the columns are the dependent variables. The first column shows the independent variables. The estimated coefficients are the marginal effects, and numbers in parentheses indicate the standard errors. ***, **, * denote the significance level at 1%, 5% and 10% levels respectively.

Table 7. Determinants of use of the debit card in the past year.

Variables	(Bahrain)	(Kuwait)	(Saudi)	(UAE)	(All GCC)
Female	-0.00	-0.02	-0.07**	-0.00	-0.02
	(0.03)	(0.03)	(0.03)	(0.03)	(0.01)
Age	-0.00	-0.00	0.01*	-0.00**	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Age^2	-0.00	0.00	-0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Income – Poorest 20%	-0.16***	-0.14***	-0.18***	-0.04	-0.13***
	(0.04)	(0.04)	(0.05)	(0.04)	(0.02)
Income – Second poorest 20%	-0.07*	-0.06	-0.09**	-0.00	-0.05***
	(0.04)	(0.04)	(0.04)	(0.04)	(0.02)
Income – Third poorest 20%	-0.09**	-0.02	-0.09*	0.02	-0.04**
	(0.03)	(0.04)	(0.04)	(0.04)	(0.02)
Income – Fourth poorest 20%	0.01	-0.02	-0.10**	-0.04	-0.03
	(0.04)	(0.04)	(0.04)	(0.04)	(0.02)
Secondary education	-0.00	0.34**	0.11*	-0.01	0.06*
	(0.06)	(0.14)	(0.06)	(0.08)	(0.03)
Tertiary education	0.13**	0.40***	0.19***	0.07	0.16***
	(0.06)	(0.14)	(0.06)	(0.08)	(0.03)
In the workforce	0.05	0.07	0.10**	0.12**	0.08***
	(0.03)	(0.04)	(0.04)	(0.05)	(0.02)
Observations	875	800	657	815	3,147
Pseudo R^2	0.07	0.03	0.08	0.03	0.04
Log likelihood	-425	-405	-317	-388	-156

Note: On top of the columns are the dependent variables. The first column shows the independent variables. The estimated coefficients are the marginal effects, and numbers in parentheses indicate the standard errors. ***, **, * denote the significance level at 1%, 5% and 10% levels respectively.

Table 8 presents the results of having a credit card in the Gulf Cooperation Council (GCC) countries. The results show that being female is negatively related to ownership of credit cards in Bahrain, Saudi, and Gulf Cooperation Council (GCC) countries. The probability of having a credit card is lower among women as compared to men. Age is positively significant, while squared age is negatively significant to credit card ownership in the UAE and Gulf Cooperation Council (GCC) countries. Credit card use increases with age and

decreases when people become too old. All income quintiles are significantly associated with ownership of credit cards in Kuwait, UAE, and Gulf Cooperation Council (GCC) countries, while the first two income quintiles significantly explain credit cards in Bahrain and Saudi Arabia. With an increase in income levels, the probability of having credit cards also increases. Both secondary and tertiary education are significantly related to ownership of credit cards in Gulf Cooperation Council (GCC) countries. Educated individuals are more likely to have credit cards. Similarly, employment shows significant results, except in Bahrain and Saudi Arabia. We find that individuals who have been employed are more likely to have a credit card.

Table 8. Determinants ownership of credit card.

Variables	(Bahrain)	(Kuwait)	(Saudi)	(UAE)	(All GCC)
Female	-0.14***	-0.04	-0.13***	-0.05	-0.09***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.01)
Age	0.00	0.00	0.00	0.02***	0.00***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Age^2	-0.00	-0.00	-0.00	-0.00***	-0.00*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Income – Poorest 20%	-0.20***	-0.22***	-0.11**	-0.35***	-0.20***
	(0.05)	(0.05)	(0.05)	(0.04)	(0.02)
Income – Second poorest 20%	-0.06	-0.18***	-0.08*	-0.20***	-0.11***
	(0.04)	(0.04)	(0.04)	(0.04)	(0.02)
Income – Third poorest 20%	-0.06	-0.13***	-0.06	-0.14***	-0.07***
	(0.04)	(0.04)	(0.04)	(0.04)	(0.02)
Income – Fourth poorest 20%	-0.05	-0.06	-0.03	-0.09**	-0.05**
	(0.04)	(0.04)	(0.04)	(0.04)	(0.02)
Secondary education	0.22**	1.46***	0.09	0.17	0.18***
	(0.09)	(0.06)	(0.08)	(0.10)	(0.05)
Tertiary education	0.39***	1.57***	0.21**	0.31***	0.34***
	(0.08)	(0.06)	(0.08)	(0.10)	(0.05)
In the workforce	-0.02	0.09*	0.07	0.14**	0.06**
	(0.04)	(0.05)	(0.05)	(0.06)	(0.02)
Observations	922	836	746	884	3,388
Pseudo R^2	0.06	0.05	0.06	0.11	0.07
Log likelihood	-579	-504	-393	-539	-210

Note: On top of the columns are the dependent variables. The first column shows the independent variables. The estimated coefficients are the marginal effects, and numbers in parentheses indicate the standard errors. ***, **, * denote the significance level at 1%, 5% and 10% levels respectively.

Table 9. Determinants of credit card use in the past year.

Variables	(Bahrain)	(Kuwait)	(Saudi)	(UAE)	(All GCC)
Female	-0.04	0.07*	-0.17***	-0.06*	-0.03*
	(0.04)	(0.04)	(0.05)	(0.03)	(0.02)
Age	0.00	0.02***	0.03*	0.00	0.00**
	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)
Age^2	-0.00	-0.00***	-0.00**	-0.00	-0.00**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Income – Poorest 20%	-0.01	-0.07	0.17	0.00	0.00
	(0.06)	(0.05)	(0.14)	(0.04)	(0.03)
Income – Second poorest 20%	-0.05	0.06	0.06	0.03	0.00
	(0.05)	(0.06)	(0.07)	(0.04)	(0.02)
Income – Third poorest 20%	-0.06	-0.01	-0.04	0.07*	-0.00
	(0.05)	(0.04)	(0.07)	(0.04)	(0.02)
Income – Fourth poorest 20%	0.02	-0.05	0.02	0.01	0.00
	(0.05)	(0.03)	(0.06)	(0.03)	(0.02)
Secondary education	0.07	-0.01	0.02	0.00	0.05
	(0.11)	(0.03)	(0.16)	(0.10)	(0.06)
Tertiary education	0.13	----	0.09	0.10	0.11*
	(0.11)		(0.11)	(0.10)	(0.06)
In the workforce	0.01	-0.03	-0.00	0.04	0.02
	(0.05)	(0.04)	(0.08)	(0.05)	(0.02)
Observations	369	277	187	482	1,315
Pseudo R^2	0.04	0.10	0.10	0.05	0.02
Log likelihood	-145	-68.8	-73.3	-157	-469

Note: On top of the columns are the dependent variables. The first column shows the independent variables. The estimated coefficients are the marginal effects, and numbers in parentheses indicate the standard errors. ***, **, * denote the significance level at 1%, 5% and 10% levels respectively.

Table 9 presents the results of the use of credit cards in the past 12 months in GCC countries. The results indicate that being a woman is positively and significantly associated with credit card use in Kuwait, but negatively and significantly in Saudi, the UAE, and other Gulf Cooperation Council (GCC) countries. Thus, we find that women are more likely to use a credit card in Kuwait in the past 12 months. In addition, age is positively significant, and squared age is negatively associated with credit card use except in Bahrain and the UAE. While income levels, education, and employment show insignificant results in most of the Gulf Cooperation Council (GCC) countries, indicating that credit cards use is low in these countries.

Table 10. Determinants of saving for business or farm purposes.

Variables	(Bahrain)	(Kuwait)	(Saudi)	(UAE)	(All GCC)
Female	-0.04	-0.09***	-0.07***	-0.07**	-0.06***
	(0.02)	(0.02)	(0.02)	(0.03)	(0.01)
Age	-0.00	-0.00	-0.01**	-0.00	-0.00**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Age^2	0.00	0.00	0.00**	0.00	0.00**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Income – Poorest 20%	-0.11***	-0.09***	-0.10**	-0.14***	-0.11***
	(0.04)	(0.03)	(0.03)	(0.03)	(0.01)
Income – Second poorest 20%	-0.03	-0.00	-0.11***	-0.09**	-0.06***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.01)
Income – Third poorest 20%	-0.06*	-0.05	-0.04	-0.10***	-0.06***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.01)
Income – Fourth poorest 20%	-0.03	-0.02	-0.02	-0.07**	-0.04**
	(0.03)	(0.02)	(0.03)	(0.03)	(0.01)
Secondary education	0.28***	0.76***	0.09	0.05	0.12***
	(0.10)	(0.05)	(0.06)	(0.08)	(0.04)
Tertiary education	0.35***	0.78***	0.18***	0.07	0.17***
	(0.10)	(0.05)	(0.06)	(0.08)	(0.04)
In the workforce	0.05	0.08**	0.10***	0.03	0.06***
	(0.03)	(0.03)	(0.03)	(0.04)	(0.01)
Observations	1,052	997	1,008	985	4,042
Pseudo R^2	0.04	0.05	0.07	0.03	0.04
Log likelihood	-490	-350	-465	-447	-178

Note: On top of the columns are the dependent variables. The first column shows the independent variables. The estimated coefficients are the marginal effects, and numbers in parentheses indicate the standard errors. ***, **, * denote the significance level at 1%, 5% and 10% levels respectively.

Table 11. Determinants of saving for old age.

Variables	(Bahrain)	(Kuwait)	(Saudi)	(UAE)	(All GCC)
Female	-0.07***	-0.05*	-0.01	-0.02	-0.04***
	(0.02)	(0.02)	(0.02)	(0.03)	(0.01)
Age	0.00	-0.00	-0.00	0.01***	0.00***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Age^2	-0.00	0.00	0.00	-0.00***	-0.00*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Income – Poorest 20%	-0.03	-0.11***	0.00	-0.06	-0.04**
	(0.03)	(0.03)	(0.03)	(0.04)	(0.01)
Income – Second poorest 20%	-0.02	-0.01	-0.03	-0.06	-0.03*
	(0.03)	(0.03)	(0.03)	(0.04)	(0.01)
Income – Third poorest 20%	-0.08**	-0.05	-0.00	-0.10***	-0.05***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.01)
Income – Fourth poorest 20%	-0.06*	-0.02	0.00	-0.14***	-0.05***
	(0.03)	(0.03)	(0.02)	(0.03)	(0.01)
Secondary education	0.17**	0.11	0.04	-0.01	0.07**
	(0.06)	(0.08)	(0.04)	(0.08)	(0.03)
Tertiary education	0.22***	0.17**	0.09**	0.13*	0.15***
	(0.07)	(0.08)	(0.04)	(0.07)	(0.03)
In the workforce	0.06*	0.14***	0.02	0.10**	0.07***
	(0.03)	(0.04)	(0.02)	(0.05)	(0.01)
Observations	1,051	997	1,005	986	4,039
Pseudo R^2	0.05	0.07	0.05	0.06	0.05
Log likelihood	-499	-401	-352	-528	-182

Note: On top of the columns are the dependent variables. The first column shows the independent variables. The estimated coefficients are the marginal effects, and numbers in parentheses indicate the standard errors. ***, **, * denote the significance level at 1%, 5% and 10% levels respectively.

4.2. Saving Behaviours

The study further investigated the saving behaviors in Gulf Cooperation Council (GCC) countries. We define savings as "Savings for old age" and "Saving for business purposes or farm purposes." The results are shown in Table 10 and Table 11. Being female decreases the probability of saving for business or farm purposes in all the Gulf Cooperation Council (GCC) countries except Bahrain. Additionally, it decreases the probability of saving for old age in Bahrain, Kuwait, and the Gulf Cooperation Council (GCC) countries. The probability of saving increases with age, but it decreases when people become older. This is observed for business or farm purposes in Saudi and the GCC countries, while it is seen for old age in UAE and GCC countries. All the income quintiles are significantly associated with saving for business or farm purposes in UAE and GCC countries. The poorest income quintile is associated with lesser savings for business or farm purposes in all GCC countries.

Similarly, the wealthiest individuals are significantly more likely to save for old age in Bahrain, the UAE, and across the GCC. The probability of saving for both purposes increases as people's income increases. Education and employment are also significantly associated with saving for business or farm purposes in all the GCC countries, except the UAE, while the probability of saving for old age is significant in all the GCC countries. This means that educated and employed individuals are more likely to save money for both reasons. Overall, we find that men, as well as those who are more affluent, educated, and employed, are more likely to save money for business purposes and old age in these countries.

4.3. Loan Taking Motivation

We define borrowing as: "Borrowing for business purposes," "Borrowing for medical purposes," and "to purchase a home or land." The results are shown in Tables 12, 13, and 14. The results indicate that being female is significantly associated with borrowing for business or farm purposes in Saudi and GCC countries, indicating that females are less likely to borrow money for these purposes.

Age and squared age are insignificantly related to borrowing for business or farm purposes except for the UAE. Most of the income levels show insignificant results. However, both secondary and tertiary education show significant results for business purposes only for Bahrain and Kuwait. Similarly, employment shows a significant positive relation with borrowing for business or farm purposes in all the countries except the UAE.

Table 12. Determinants of borrowing for business or farm purpose.

Variables	(Bahrain)	(Kuwait)	(Saudi)	(UAE)	(All GCC)
Female	-0.03	-0.01	-0.04**	-0.01	-0.02***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)
Age	0.00	0.00	0.00	0.00*	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Age^2	-0.00	-0.00	-0.00	-0.00*	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Income – Poorest 20%	-0.01	-0.05**	-0.01	0.02	-0.01
	(0.02)	(0.02)	(0.02)	(0.02)	(0.01)
Income – Second poorest 20%	0.02	-0.04**	-0.04	0.02	-0.01
	(0.02)	(0.02)	(0.02)	(0.02)	(0.01)
Income – Third poorest 20%	0.00	-0.02	-0.04	0.02	-0.01
	(0.00)	(0.02)	(0.02)	(0.02)	(0.01)
Income – Fourth poorest 20%	0.00	-0.02	-0.01	0.00	-0.01
	(0.02)	(0.01)	(0.02)	(0.02)	(0.01)
Secondary education	0.49***	0.38***	-0.00	0.01	0.02
	(0.05)	(0.04)	(0.03)	(0.04)	(0.02)
Tertiary education	0.51***	0.38***	-0.00	0.01	0.03
	(0.05)	(0.04)	(0.03)	(0.04)	(0.02)
In the workforce	0.06**	0.04*	0.05**	0.02	0.04***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.01)
Observations	1,052	997	1,008	985	4,042
Pseudo R^2	0.06	0.04	0.05	0.02	0.02
Log likelihood	-238	-192	-252	-177	-887

Note: On top of the columns are the dependent variables. The first column shows the independent variables. The estimated coefficients are the marginal effects, and numbers in parentheses indicate the standard errors. ***, **, * denote the significance level at 1%, 5% and 10% levels respectively.

The results presented in Table 13 indicate that females are more likely to borrow money for medical purposes in Kuwait. Age shows a positive significance, and age squared shows a negative significance associated with borrowing for medical purposes in Bahrain and Saudi Arabia. Most of the income quintiles show a positive significance with borrowing for medical purposes, except the UAE and GCC countries. Secondary education shows no significant results, while tertiary education is significantly associated with borrowing for medical purposes in Saudi Arabia and GCC countries. Employment shows a positive and significant relation with

borrowing for medical purposes in all the GCC countries, except Kuwait. Therefore, we can conclude that employed individuals are more likely to borrow money to maintain their health in GCC countries.

Table 13. Determinants of borrowing for medical purpose.

Variables	(Bahrain)	(Kuwait)	(Saudi)	(UAE)	(All GCC)
Female	0.00	0.02*	0.02	-0.01	0.01
	(0.02)	(0.01)	(0.02)	(0.02)	(0.01)
Age	0.01**	-0.00	0.01**	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Age^2	-0.00**	0.00	-0.00**	-0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Income – Poorest 20%	0.03	-0.00	0.03	0.07**	0.03***
	(0.02)	(0.02)	(0.03)	(0.03)	(0.01)
Income – Second poorest 20%	0.02	-0.01	0.03	0.10***	0.03***
	(0.02)	(0.01)	(0.03)	(0.03)	(0.01)
Income – Third poorest 20%	0.04	-0.00	0.03	0.02	0.02*
	(0.02)	(0.01)	(0.03)	(0.03)	(0.01)
Income – Fourth poorest 20%	0.00	0.02	-0.00	0.06**	0.02
	(0.02)	(0.01)	(0.03)	(0.03)	(0.01)
Secondary education	-0.01	-0.01	-0.04	-0.04	-0.03
	(0.04)	(0.03)	(0.03)	(0.05)	(0.02)
Tertiary education	-0.02	-0.01	-0.07*	-0.07	-0.04**
	(0.04)	(0.03)	(0.04)	(0.05)	(0.02)
In the workforce	0.06**	0.00	0.10***	0.14***	0.07***
	(0.02)	(0.01)	(0.03)	(0.04)	(0.01)
Observations	1,053	999	1,009	986	4,047
Pseudo R^2	0.03	0.02	0.04	0.04	0.02
Log likelihood	-315	-140	-336	-319	-116

Note: On top of the columns are the dependent variables. The first column shows the independent variables. The estimated coefficients are the marginal effects, and numbers in parentheses indicate the standard errors. ***, **, * denote the significance level at 1%, 5% and 10% levels respectively.

Table 14. Determinants of borrowing to purchase home or land.

Variables	(Bahrain)	(Kuwait)	(Saudi)	(UAE)	(All GCC)
Female	-0.10***	0.01	-0.13***	-0.00	-0.05***
	(0.03)	(0.02)	(0.02)	(0.03)	(0.01)
Age	0.01***	0.00	0.03***	0.01**	0.01***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Age^2	-0.00**	-0.00	-0.00***	-0.00**	-0.00***
	(-0.00)	(-0.00)	(-0.00)	(-0.00)	(-0.00)
Income – Poorest 20%	-0.07	-0.06*	-0.10***	-0.23***	-0.11***
	(0.04)	(0.03)	(0.03)	(0.04)	(0.02)
Income – Second poorest 20%	-0.02	-0.08**	-0.10***	-0.13***	-0.08***
	(0.04)	(0.03)	(0.03)	(0.03)	(0.01)
Income – Third poorest 20%	0.00	0.00	-0.04	-0.04	-0.01
	(0.04)	(0.03)	(0.03)	(0.03)	(0.01)
Income – Fourth poorest 20%	-0.00	0.00	-0.02	-0.04	-0.01
	(0.04)	(0.03)	(0.03)	(0.03)	(0.01)
Secondary education	-0.07	0.87***	0.02	0.00	-0.00
	(0.06)	(0.05)	(0.04)	(0.07)	(0.03)
Tertiary education	-0.05	0.95***	0.00	-0.01	0.00
	(0.06)	(0.06)	(0.05)	(0.07)	(0.03)
In the workforce	0.13***	0.12***	0.13***	0.20***	0.14***
	(0.04)	(0.03)	(0.04)	(0.05)	(0.02)
Observations	1,052	999	1,006	983	4,040
Pseudo R^2	0.05	0.06	0.12	0.06	0.05
Log likelihood	-631	-402	-403	-466	-200

Note: On top of the columns are the dependent variables. The first column shows the independent variables. The estimated coefficients are the marginal effects, and the numbers in parentheses indicate the standard errors. ***, **, * denote the significance level at 1%, 5% and 10% levels respectively.

Table 14 shows the results of borrowing to purchase a home or land. In general, females are less likely to borrow to purchase homes or land in Bahrain, Saudi Arabia, and the GCC countries. Age is positively significantly associated with borrowing for purchasing a home or land purposes in all the countries except

Kuwait, while squared age is negatively significantly related to borrowing for purchasing a home or land in these countries. Borrowing for purchasing homes or land increases with age and decreases as people become too old. Being poor is associated with a lower probability of borrowing for a home or land purchase, and the probability of borrowing increases when people become more affluent. Secondary and tertiary education are positively and significantly related to borrowing to purchase homes or land in Kuwait. Employed individuals are more likely to borrow money to purchase homes or land in all the GCC countries. These findings are consistent with previous studies (Allen et al., 2016; Asuming et al., 2019; Dar & Ahmed, 2021; Fungacova & Weill, 2015; Zins & Weill, 2016).

5. Conclusion

Financial inclusion plays a vital role in enhancing economic development. Many countries have taken various initiatives to expand access to financial services to their unbanked population. Understanding the recent trend and determinants of financial inclusion is essential in the Gulf Cooperation Council (GCC) countries. This paper uses the data from the Global Findex survey. We find that individuals who reported having an account at formal financial institutions increased by 16 percent between 2011 and 2017. At the same time, formal saving and formal borrowing are low in GCC countries compared to the average of high-income countries (Demirguc-Kunt et al. (2018), Appendix 1). Our study finds that, on average, United Arab Emirates (UAE) records the highest number of respondents who have an account at formal financial institutions. At the same time, Saudi Arabia reports the lowest access to formal accounts.

We also study the factors related to owning formal accounts, formal saving, formal credit, ownership, debit card use, credit ownership, saving, and borrowing behavior. Our analysis shows that financial inclusion is higher for males, older individuals, those with higher education levels, and higher income. On the other hand, females and younger individuals are less likely to be financially included in GCC countries. To improve FI in the region, efforts should focus on the young and women population as they are most likely to be excluded from the formal financial system. Therefore, tailored products and services that meet the needs of these groups should be designed and promoted to improve FI among them so that their access to and use of financial services are enhanced.

The present study could not include variables such as mobile banking, rural population, married, household size, financial stability, and financial development as additional determinants of financial inclusion due to the unavailability of data for the GCC countries. Therefore, it is suggested that the researchers undertake these variables for further investigation in the given research area if data become available. Additionally, this study is limited to the GCC countries, and researchers can include more emerging market economies in their research to better understand the determinants of financial inclusion.

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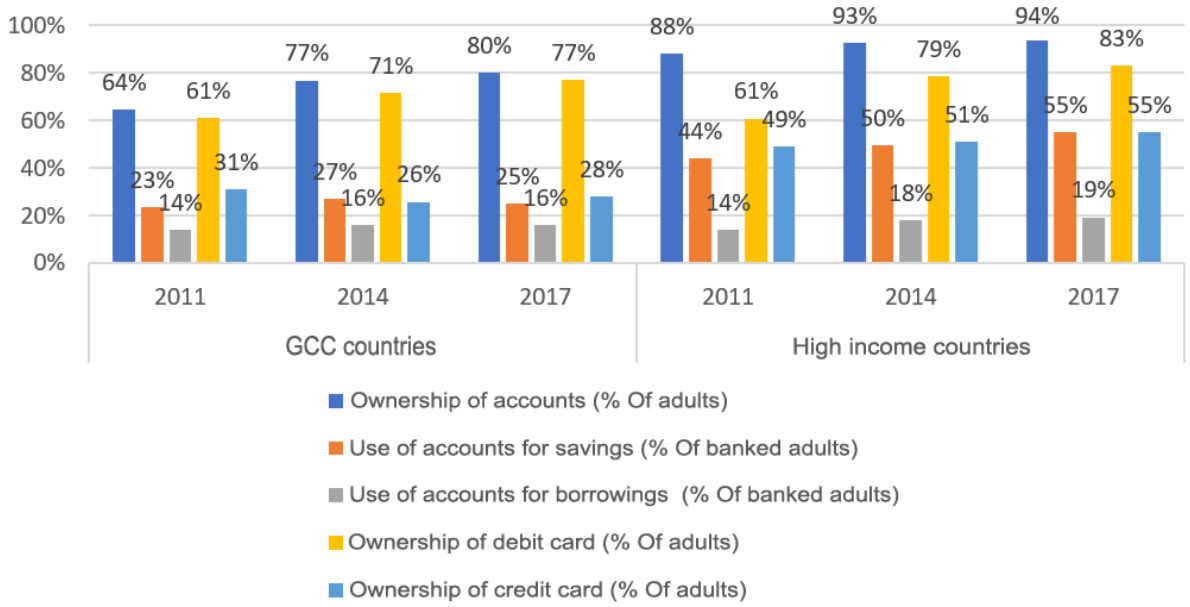
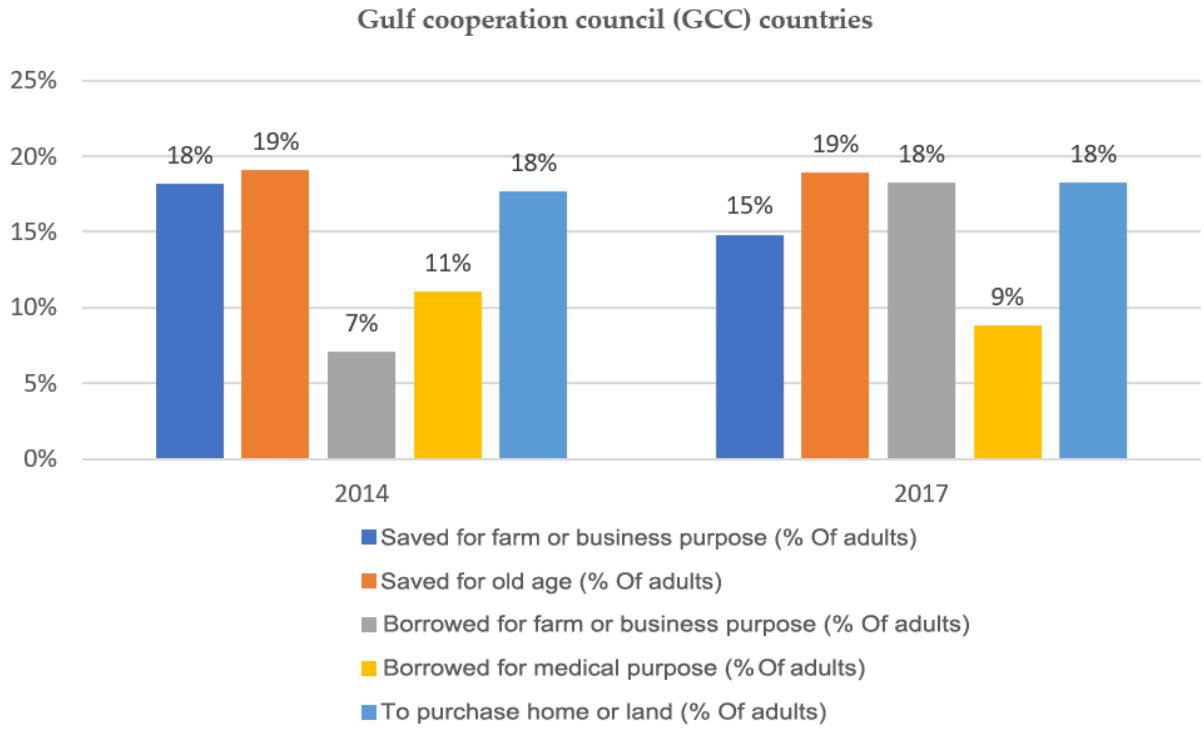


Appendix 1. ownership of formal account and use of formal accounts (% Of adults) in gulf cooperation council (GCC) and high-income countries.

Source: Global findex database 2017.



Appendix 2. Recent trends in the saving and borrowing behavior (% Of Adults) in GCC countries.

Source: Global findex database 2017.