Financial Inclusion and Islamic Banking in the Middle East and North Africa

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ABSTRACT

In this thesis, we investigated the impact of Islamic banking on financial inclusion in 14 Middle Eastern and North African (MENA) countries. For this purpose, we employed a probit estimation method on the 2014 World Bank Global Findex database, analysing the association between individual characteristics and the impact of Islamic banking among MENA countries with different levels of development. We found that financial inclusion, particularly among the middle-income countries of MENA, is relatively worse than the world average. Our estimation model indicates that financial inclusion in MENA is positively affected by the characteristics of being male, wealthier, and older. Interestingly, we found that education is not positively associated with the use of formal banking accounts in the middle-income countries, but it is, as expected, in the high-income countries. We found that, in general, Islamic banking share has a negative impact on financial inclusion. But we also documented with empirical evidence that Islamic banking helps individuals with a high degree of religious affiliation to be financially included. Furthermore, estimates show that the effect of Islamic banking on financial inclusion is greater in middle-income countries than in high-income countries within MENA.

Keywords: financial inclusion, financial intermediaries, financial services, Islamic banking, MENA.

ÖZ

Bu tezde, İslami bankacılığın 14 Orta Doğu ve Kuzey Afrika (MENA) ülkesinde finansal erişime ve tabana yayılma üzerindeki etkisini araştırdık. Bu amaçla, 2014 Dünya Bankası Global Findex veri tabanından yararlanarak, farklı ekonomik gelişim seviyelerine sahip MENA ülkeleri arasında bireysel özellikler ve İslami bankacılığın etkisi arasındaki ilişkiyi analiz etmek için probit tahmin yöntemi kullandık. Özellikle MENA'nın orta gelirli ülkeleri arasında finansal tabana yayılma ve finansmana erişimin dünya ortalamasından nispeten daha kötü olduğunu gördük. Tahmin modelimiz, konu bölge MENA'da finansal katılımın erkek, daha zengin ve daha yaşlı olma özelliklerinden olumlu şekilde etkilendiğini göstermektedir. İlginç bir şekilde, eğitimin orta gelirli MENA ülkelerinde resmi bankacılık hesaplarının kullanımıyla olumlu bir ilişkisi olmadığını, ancak beklendiği gibi yüksek gelirli ülkelerde olduğunu bulduk. Genel olarak, İslami bankacılık payının finansın toplumun geneline yayılma üzerinde olumsuz bir etkisi olduğunu gördük. Ancak, İslami bankacılığın yüksek derecede dini bağlılığı olan bireylerin finansal olarak dahil edilmesine ve finansa erişime yardımcı olduğunu ampirik kanıtlarla da belgeledik. Ayrıca çalışmada yapılan tahminler, İslami bankacılığın finansal katılım ve finansmana erişime etkisinin orta gelirli MENA ülkelerinde yüksek gelirli ülkelere göre daha fazla olduğunu göstermektedir.

Anahtar Kelimeler: finansal içerme, finansmana erişim, mali aracılar, mali hizmetler, İslami bankacılık, MENA.

DEDICATION

To my Parents

ACKNOWLEDGMENT

I would like to express my sincere gratitude to my advisor Prof. Dr. Mustafa Besim for the continuous support of my Ph. D thesis and related academic papers, for his patience, motivation, and immense knowledge. His experience and guidance helped me in all the time of writing this research.

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LIST OF ABBREVIATIONS

AFI   Alliance for Financial Inclusion

Age^2 Age Square

AUM   Assets Under Management

CFI   Center for Financial Inclusion

CGAP   Consultative Group to Assist the Poor

FinInc   Financial Inclusion

G20   Group of Twenty

GCC   Gulf Cooperation Council

GDP   Gross Domestic Product

IFC   International Finance Corporation

IFSB   Islamic Financial Services Board

IMF   International Monetary Fund

MENA   Middle East and North Africa

Obs.   Observation

OECD   Organization for Economic Co-operation and Development

OIC   Organization of Islamic Cooperation

St. dev.   Standard Deviation

Chapter 1

INTRODUCTION

1.1 Background

Financial inclusion is defined as 'the ease of access, availability and usage of the formal financial system for all members of an economy' (Sarma, 2008, p.8). In other words, it refers to a population's capacity to maintain an account with a financial intermediary at an affordable price, which allows account holders to save, use payment services for purchases and borrow funds. Individuals excluded from financial systems must depend on their limited savings to invest in their education or to finance potential income-generating businesses.

The G20 Summit in Seoul in 2010 recognised the importance of financial inclusion; it has since become one of the central pillars of the World Bank's global development agenda, which intends to realise universal financial access by 2020.

Towards this end, central banks, financial policymakers and regulators from developing and emerging countries have been asked to commit to this plan and build strategies to increase financial inclusion in their countries. Doing so is expected to improve the lives of the poor and the underprivileged.

1.2 Motivation

The Middle Eastern and North African (MENA) region have addressed concerns about financial inclusion because only 44.4 percent of adult citizens in the MENA region in

2014 had a financial account in a formal institution, compared to 61.5 percent worldwide. Moreover, only 15.2 percent of citizens in MENA countries had savings in a formal institution compared to 27.4 percent worldwide.

In particular, middle-income MENA countries had much worse financial inclusion, with their borrowing being as low as 8.6 percent compared to 14.7 percent worldwide[1]. One of the main reasons for this low level of financial inclusion is associated with a country's level of economic development, especially for those countries of the MENA region (Demirgüç-Kunt & Klapper, 2013).

The International Labour Organisation (2016) suggests that expanding access to finance and supporting small businesses can help to reduce unemployment in the MENA region, where youth unemployment is the highest in the world. This view is also supported by evidence showing that improved financial access has a positive impact on reducing poverty (Bruhn & Love, 2014; Park & Mercado, 2015).

The MENA region, excluding Iran, is home to 164 Islamic banks, which includes 45 that are ranked in the top 100 globally. Their total assets were about $600 billion in 2017 (Domat, 2018). The same region has the highest total Islamic banking assets across the world (IFSB, 2019). The Islamic banking sector has continued to grow and now compasses 18 percent of the total banking assets in the MENA region (Domat, 2018).

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[1] Author's own calculations using World Bank 2014 Findex database.

Pearce (2011) analyses the supply-side statistics of financial inclusion in the MENA region and finds that the low level of financial inclusion is partly due to the fact that *Sharia* law prohibits Muslims from paying *riba* (interest) on borrowed money. Islamic banking adopts 'profit and loss sharing' in its financial transactions rather than interest, which represents the base of conventional banking's transactions (Abdul Rahman & Nor, 2016).

The 2014 World Bank Global Findex database indicates the percentage of financially excluded adults who cite 'religious reasons' as a barrier to financial inclusion in MENA countries to be 10.4 percent, which, at the time, was double that of the rest of the world. However, many *Sharia*-compliant products intend to serve the poor in particular. Tentative evidence also shows that financial inclusion is positively influenced by Islamic banking (Ben Naceur, Barajas, & Massara, 2015).

Overall, the MENA region's development level is not as high as desired, resulting in high unemployment and low access to finance, with some evidence suggesting that religion is a barrier to enhancing access to finance. At the same time, Islamic banking is known to have a positive impact on financial inclusion, and improving financial inclusion, overall, can help economic development and create employment.

1.3 Objective

The objective of this thesis is to understand the determinants of financial inclusion in the MENA region. Specifically, this study measures the effect of Islamic banking on financial inclusion in the MENA region, where most citizens are Muslims and where the total Islamic banking assets are the highest in the world. In addition, the analysis

is extended to consider how the level of economic development in each MENA country affects each financial inclusion measurement.

For this purpose, this study uses data from the 2014 World Bank Global Findex database. The sample includes 14,098 individuals from 14 countries. This study adopts a probit estimation method to assess the effect of Islamic banking share; level of economic development; and individual characteristics, such as age, gender, income and level of education on the indicators of financial inclusion.

1.4 Contributions

This study contributes to the literature in number of ways. First, it contributes to the growing literature on the determinants of financial inclusion, as it focuses on the MENA region with a cross-country case study. This study, thus, will add to the existing literature on the topic (e.g., Allen et al., 2012; Demirgüç-Kunt & Klapper, 2012; Demirgüç-Kunt & Klapper, 2013; Fungácová & Weill, 2015; Zins & Weill, 2016; Shihadeh, 2018).

Shihadeh (2018) measured the determinants of financial inclusion in MENA, Afghanistan and Pakistan (MENAP) but did not discuss Islamic finance. As a second contribution, our analysis contributes to the literature by adding Islamic banking share to the analysis to observe the impact of the rapidly growing Islamic finance industry on financial inclusion. It is especially important to understand the impact of Islamic banking share on financial inclusion in a region where a significant proportion of Islamic banking activities occur in parallel with conventional banking.

Third, we include the level of economic development in our model to fill the gap in the literature on financial inclusion by considering how the level of economic development in each MENA country affects each financial inclusion measurement.

1.5 Thesis Structure

The remainder of the thesis is structured as follows. In Chapter 2, we provide the theoretical background and literature review. First, we discuss the theory of financial inclusion, including its definition, its indicators and dimensions as well as financial exclusion and its reasons. We also examine how microfinance differs from financial inclusion as well as Islamic finance and its role in increasing financial inclusion. Second, we present the literature focusing on financial inclusion. This literature includes the status of financial inclusion globally and in the MENA region, the role of financial inclusion in accelerating economic growth and poverty reduction as well as indices and indicators used by researchers to measure the level of financial inclusion in many countries of the world. In addition, we discuss the factors that affect the adoption of Islamic banking among Muslims and the impact of Islamic finance and Islamic banking on increasing financial inclusion.

Chapter 3 provides information about Islamic finance and banking, its instruments and regulations, and it clarifies the difference between Islamic banking and conventional banking. Then it provides information about the financial system as well as Islamic finance in the MENA region.

Chapter 4 describes the data used in the empirical analysis, the development of the hypotheses, the methodology and the model of study.

In Chapter 5, we present the empirical results. First, we provide the descriptive statistics. Then, we present the results of the probit estimation for the determinants of the following: the indicators of financial inclusion, the barriers to financial inclusion as well as saving and credit behavior.

In Chapter 6, we conclude by summarizing our findings and providing policy recommendations[2].

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[2] Some parts of this study have been accepted to be published in the International Journal of Islamic and Middle Eastern Finance and Management.

Chapter 2

THEORETICAL BACKGROUND AND LITERATURE REVIEW

In this chapter, we try to develop a theoretical framework for financial inclusion. In this respect, we first define financial inclusion with its indicators and dimensions. Then the factors causing financial exclusion, the opposite of financial inclusion, are explored. We then discuss microfinance, which is the foundation for financial inclusion and financial development, to help develop a theoretical framework. Given that one of the objectives of the thesis is to analyze the impact of İslamic finance on financial inclusion, the association between Islamic finance and financial inclusion is also covered in this chapter. In the last part of the chapter, we summarize the literature on financial inclusion as well as the literature on Islamic banking and financial inclusion. The theoretical framework and the reviewed literature are expected to help develop proper research questions and hypotheses for the thesis.

2.1 Theory of Financial Inclusion

2.1.1 Definition

Financial inclusion is 'a process that ensures the ease of access, availability and usage of the formal financial system for all members of an economy' (Sarma, 2008, p. 5). Shankar (2011), in contrast, defines it as ongoing access to a variety of financial services in a reasonable and appropriate manner. Amidžić, Massara and Mialou (2014) explain it as an economic state in which individuals and firms are not left without access to basic financial services based on motivations instead of efficiency criteria.

Basically, financial inclusion means having an account in a financial intermediary at an affordable price, which allows the account holder to save, use payment services for purchases and borrow funds.

2.1.2 Indicators and Dimension of Financial Inclusion

In the global context, the financial inclusion indicators include formal accounts and savings as well as formal borrowing, payments and insurance (Demirgüç-Kunt & Klapper, 2012).

The Alliance for Financial Inclusion (AFI, 2013), a platform for promoting financial inclusion, considers quality as an important dimension as well as the access to and usage of finance. Although quality is usually ignored because it is complicated, AFI (2016) has stated that this factor should be considered because it provides guidance for measuring the quality of regulated financial services and the underlying market environment from the client's perspective.

The World Bank (2014) has determined that access to and the use of financial institutions should not be considered individually as an indicator for financial inclusion. This is because there are many individuals who have access to financial accounts but do not use them. Also, there are many people who do not have financial accounts, but they use them through the account of family and relatives, which is known as an indirect use of financial accounts.

Hannig and Jansen (2010, pp. 3-4) measure financial inclusion through four dimensions:

- Access: It is the ability to use financial services and products available by formal financial institutions to individuals. Access is used to analyse the kinds of barriers to formal financial institutions.

- Usage: It is the depth of financial products and services and is essential for durability and regularity.

- Quality: It measures how the financial services are relevant to the lifestyle that the consumer needs. It is important to analyse the relationship between services providers and consumer needs.

- Impact: It measures the change of consumers' life due to the use of financial services or products.

2.1.3 Financial Exclusion

Leyshon and Thrift (1995, p.314) define financial exclusion as 'those processes that serve to prevent certain social groups and individuals from gaining access to the financial system'. In their study, the authors focus on geographical exclusion and discrimination towards the poor.

Reasons for financial exclusion could be divided into two sides according to Shankar (2011):

- Supply side barriers: absence of appropriate financial products, physical barriers, inability to provide documentation.

- Demand side barriers: lack of motivation, absence of financial literacy, lack of financial competence as well as psychological and cultural barriers. Demand side barriers lead to self-exclusion.

The World Bank (2014), in contrast, divides the financial exclusion into the following:

- Involuntary exclusion, which is due to:
  1. Inadequate income, high risk.
  2. Discrimination against certain groups of the community, inadequate information, lack of contract enforcement, unreasonable price due to market deficiencies.
- Voluntary exclusion (self-exclusion), which is due to:
  1. Indirect access as well as cultural and religious reasons.
  2. No need for financial services.

Cole, Sampson, and Zia (2011) find that barriers to demand financial services could include high cost or the financial literacy of the individuals. That is, individuals will not demand a product with which they are neither comfortable nor familiar.

Islam and Mamun (2011) also show that major banks discriminate towards small borrowers or low-income individuals, as they often prefer to issue large scale loans. Prina (2015) analyses the effect of providing the poor with access to formal saving accounts with minimum or zero transaction fees as well as the effect of the proximity of the local bank branch to households on formal saving. The study finds an increase in savings as well as in the ability of the poor to manage their resources when these provisions are available.

In contrast, Demirgüç-Kunt et al. (2015, pp.34-35) highlight barriers to opening a formal account:
- Distance of households to the point of access (i.e., the bank is too far away);
- Cost of opening and maintaining an account (i.e., the bank is too expensive);

- Requirement of a large number of documents (i.e., persons lack documentations, such as ID or wage slips);

- Lack of trust in financial institutions;

- Insufficient money;

- Reasons related to religious commitment;

- A family member already has an account;

- Inability to get an account; and

- Financial services are not needed.

2.1.4 From Microfinance to Financial Inclusion

Johnson and Arnold (2012) argue that the development of policies related to the financial sector has shifted its emphasis from microfinance to financial inclusion. Rhyne (2014) explains that financial inclusion is built on the success of microfinance, as it has helped hundreds of millions of individuals who were ignored by financial institutions to achieve their goals. According to Center for Financial Inclusion (CFI, 2013), the difference between microfinance and financial inclusion is that the former specializes in providing certain excluded market segments with financial products and the later aim to reach all financially excluded individuals with different kinds of products and services.

Adeola and Evans (2017) analyzed the impact of microfinance on financial inclusion in Nigeria, based on annual data (1981–2014). They find that microfinance in the short term has an insignificant positive impact on financial inclusion, and in the long run, it has significant positive impact. In addition, they conclude that negative interest has a significant effect on the level of financial inclusion in both the short and long term.

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2.1.5 Financial Inclusion and Financial Development

Financial development is interrelated with the study of financial inclusion. It is a field that can help explain the theory underlying financial inclusion. Financial development is defined as the process of reducing the costs of acquiring information, enforcing contracts and making transactions (World Bank, 2020). It is also defined as the improvement in the quantity, quality and efficiency of financial intermediary services (Choong & Chan, 2011).

Many studies have shown that financial development contributes to economic growth, and it is also outcome of it as well. It helps small and medium enterprises (SMEs) to get access to finance. Given that SMEs play a vital role in economic development, particularly in developing countries, as they help create more jobs than large companies, their role in financial development also becomes very important. Furthermore, financial development helps in reducing poverty and inequality by broadening access to finance for the poor. It encourages investment and leads to income generating activities by facilitating risk management (World Bank, n.d). According to World Bank (2014), financial development for both financial institutions and financial markets could be measured by access, depth, efficiency and stability.

Tita (2017) argues that although the financial system comprises financial development and financial inclusion, a developed financial system is not necessarily inclusive. The higher the degree of financial development in a country, the wider will be the availability of financial services (Adnan, 2011). If the access to financial services through the financial system is also expanded, the financial inclusion could be also enhanced.

Rasheed et al. (2016) demonstrate that financial inclusion has a positive and significant impact on financial development and that the enhancement of financial inclusion leads to financial development and, hence, economic development. They also suggest that increasing number of bank branches and ATMs, which are important for financial inclusion, can significantly enhance financial institution development.

Moyo (2018) reveals a positive relationship between financial inclusion and financial development happens when the banking sector expands into markets which were previously neglected, especially if mobile technology based banking products are offered. He also finds that financial development and financial inclusion share the same conducive environmental platform. That is, a strong institutional environment promotes financial inclusion and financial development when it reduces the cost of transactions and information sharing. These findings show that there is a significant positive interaction between financial inclusion and financial development. It is an area that helps understand the underlying theory of financial inclusion.

2.1.6 Islamic Finance and Financial Inclusion

The importance of Islamic banking comes from its ability to attract Muslims who refuse to use conventional finance. The main difference between conventional banking and Islamic banking is that the latter is based on *Sharia* law where *riba* (interest) is forbidden (Abdul Rahman and Nor, 2016).

Many countries try to increase financial inclusion through *Sharia*-compliant financial institutions, given that the presence and the penetration to Islamic banking can increase financial inclusion in some Islamic countries (Oracle Financial Services, 2017). Islamic finance offers the needs of individuals without conflicting with their religious and social values (Ali, 2011).

Islam aims for social justice and fights for the extremely poor as well as against the extremely wealthy. Its regulations call for the redistribution of wealth. Its rules prohibit *israf* (overspending) and *itlaf* (wasting money) (Iqbal & Mirakhor, 2012).

According to Mohieldin et al. (2012), Islam could increase financial inclusion through two types of inclusion: through risk sharing as well as through Islam's instruments of redistribution (as shown in figure 1).
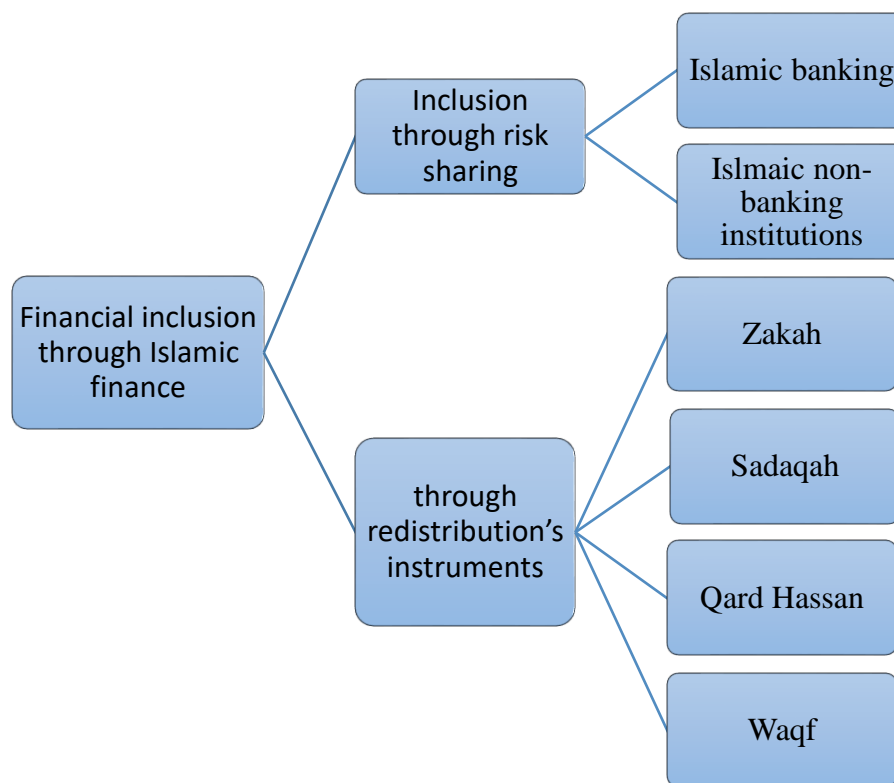
Note: source, Adapted from Mohieldin *et al.* (2012, pp.7-10).
Figure 1: Financial inclusion through Islamic finance

Regarding the first way, Islam calls for liability; that is, the individual can incur both losses as well as profits. Islam prohibits interest, and, instead, it encourages financial products and projects to be based on profit and loss sharing. This principle of sharing losses and profits is provided through Islamic banking, microfinance and *takaful*. In the second way, Islam leads to financial inclusion through the redistribution of the

resulting income. Redistribution has great effect on realising wealth and economic development.

The instruments of the second type are *zakah, sadaqah, waqf* and *qard hassan. Zakah* is an obliged amount paid by an individual when he earns more than what he needs for consumption and is calculated upon his net wealth. It is paid by this individual directly to poor people.

Another instrument, *sadaqah*, is voluntary donation to the poor; *qard hassan* is a voluntary loan to individuals in need, and it is repayable without returns, and *waqf* is 'real non-perishable properties that are voluntarily donated for philanthropic purposes', *waqf* could be fixed assets or cash or even assets (Mohieldin et al., 2012, pp.7-10).

According to Zulkhibri (2016), *qard hassan* is the most effective instrument to meet the needs of poor people and help them to be financially included. Iqbal and Mirakhor (2012) argue that in contrary to conventional financial instruments, Islamic financial instruments are considered risk-sharing (not risk-shifting), which makes Islamic finance more able than conventional finance to improve financial inclusion in communities.

2.1.7 Status of Financial Inclusion's Infrastructure in the MENA Region

In the MENA region, financial inclusion is characterised by state banks, postal networks and NGO-dominated microcredit organisations. State banks play a vital role in financial inclusion, as in some MENA countries state banks are the significant loan providers to low-income individuals and to micro and small enterprises. They also provide financial service outlets in several MENA countries. Yet postal saving banks

and post offices are the main providers of the services of savings and payment for the poor in the MENA region. Microfinance institutions (MFI) play an essential role in providing services to the poor in the MENA region, although most of them provide only credit in MENA countries. They need more support to improve their financial infrastructure in order to reach more poor and low-income individuals. Moreover, micro savings are provided in a limited scale in the region and only in a few MENA countries (Pearce, 2011).

2.2 Literature Review

2.2.1 Literature on Financial Inclusion

In broad terms, financial inclusion refers to the access to, as well as the availability and usage of, finance. Global statistics regarding financial inclusion are somewhat discouraging: only 62 percent of adults worldwide have bank accounts (Demirgüç-Kunt *et al.,* 2018). This finding implies that nearly two billion adults are financially excluded from formal saving, borrowing, paying bills and receiving cash (Demirgüç-Kunt et al., 2015). The significance of getting a formal bank account is that it is the first step towards financial inclusion.

The literature shows that financial inclusion has attracted increased interest in recent years owing to its significant importance for economic development, poverty reduction and individual well-being. Many studies have attempted to measure financial inclusion and to analyse how individual characteristics affect financial inclusion.

Many researchers, including Cámara and Tuesta (2014), Rupayan et al. (2010) and Sarma (2008), have developed their own indices to investigate financial inclusion.

These unique metrics attempt to meaningfully combine various banking sector indicators to reflect the varied dimensions of an inclusive financial system.

Swamy (2014) investigates gender as a factor affecting financial inclusion and focuses on how financial inclusion programmes affect poor, female-headed households relative to male-headed ones. He shows that women use resources more effectively than men, thus improving the family's well-being and contributing to a significant increase in household savings. Ghosh and Vindo (2016) also examine whether gender matters in financial inclusion in India and argue that gender significantly associates with access to and use of financial services. In comparison to male-headed households, female-headed ones are 8 percent less likely to access formal financial services and 6 percent more likely to access informal ones.

Wang (2019) highlights how gender empowerment and the number of years of education completed by women increase women's degree of financial inclusion (e.g., demands for formal accounts and the use of digital payments). And non-discrimination between female and male in employment, as well as equal rights for property ownership, also positively correlated with financial inclusion.

In contrast, Fungáčová and Weill (2015) used the indicators of financial inclusion in China to make comparison between China and other countries of BRICS (Brazil, Russia, India, China and South Africa). Their results indicate that individuals who are male, older, better educated and wealthier have a higher probability to be financially included in China.

Zins and Weill (2016) explore the determinants of financial inclusion from a sample of 37 African countries, looking at mobile banking, saving motivation and credit motivation as dependent variables. Their results show that being male, older, wealthier and more educated favours financial inclusion to a certain extent, with education and income having the greatest impact. Similarly, Shihadeh (2018) uncovers that being female and poor in MENAP increases the probability of being financially excluded, whereas completing education decreases it.

Some empirical evidence, however, suggests that a low degree of financial inclusion neither fosters economic growth nor supports policies aimed at alleviating income inequality (World Bank, 2014).

Cull, Ehrbeck and Holle (2014) find that a higher degree of financial inclusion accelerates economic growth and employment, redresses income inequality and contributes to poverty reduction. In addition, financial inclusion and financial stability are mutually reinforcing when done correctly. The World Bank (2013b) also maintains that greater financial inclusion improves the stability and efficiency of financial intermediaries in countries.

Menon (2019) supports the idea that financial inclusion is the way to inclusive growth and that financial inclusion will lead to better social life and standards of living, whereas Park and Mercado (2015) follow Sarma's (2008) methodology and examine the effect of financial inclusion on poverty reduction and income inequality in 37 developing Asian countries, with their results showing a positive effect.

Sarma and Pais (2011) also investigate the relationship between economic development and financial inclusion in a sample of 49 countries. They show how social exclusion is reflected by financial exclusion: countries with a low GDP per capita, which have relatively higher income inequality, low urbanisation and literacy and weak connectivity, have a lower degree of financial inclusion. They also highlight how among various banking sector variables, there is a negative association between the proportion of non-performing assets and financial inclusion.

Demirgüç-Kunt and Klapper (2013) also show that individuals in high-income countries have a much higher account penetration than those in developing countries and that there is a significant variation in account penetration between individuals in countries at both levels of development. Overall, the empirical findings conclude that rich individuals have a relatively higher degree of financial inclusion than poor ones. Al Hassan (2019) examines whether using informal financial intermediaries decreases with the increase of formal accounts by using data from 37 African countries. He concludes that using formal financial intermediaries is positively correlated with the use of informal financial intermediaries. High interest rates, rationing of credit and the collateral for credit make formal credit more expensive for users.

2.2.2 Literature on Islamic Banking and Financial Inclusion

Interest in studying the effect of Islamic banking (non-interest banking) on financial inclusion has risen with the objective of increasing the financial inclusion of Muslims, especially considering that Islam forbids *riba* (interest). This fact has motivated researchers to examine the impact of the Muslim identity and of the availability of Islamic banking on financial inclusion.

Studies have also investigated the factors influencing the adoption of Islamic banking among Muslims and the influence of Islamic finance and Islamic banking on increasing financial inclusion.

Demirgüç-Kunt, Klapper and Randall (2014) find that Muslims are significantly less likely to own a formal account or save at a formal financial institution than non-Muslims. And they find no evidence regarding whether or not Muslims use formal and informal borrowing more or less than other groups. Through an extended survey of adults in five MENA countries, the authors show little actual use of *Sharia*-compliant banking products, and they assume that the respondent prefer *Sharia*-compliant products even if their costs are higher.

Chiu, Newberger and Paulson (2005) classify Muslims' demands for financial services into three preferences for Islamic or conventional banking according to their degrees of religious affiliation. The first category includes Muslims who refuse to use conventional financing. The second category consists of Muslims who currently use conventional financing but may prefer to use Islamic financing instead if it is offered more extensively. The third category comprises those who currently use conventional financing and may not switch to Islamic financing even if it became readily available. In contrast, Obeid and Kaabachi (2016) explore the factors affecting the adoption of Islamic banking by individuals using conventional banking services in Tunisia. They highlight the following factors which may predict the adoption of Islamic banking: the degree of religious commitment; the amount of consumer information about Islamic finance; and Islamic banking's compatibility, as well as its relative advantage, with consumer's lifestyle, values and banking habits.

Brekke (2018) examines the impact of religiosity on financial inclusion in Norway and finds that younger, higher-educated Muslims do not have a greater demand for Islamic banking. El-Ebrashi et al. (2018) also find an insignificant relationship between demographic characteristics and demand for Islamic financial products at two locations in Egypt.

Tahiri Jouti (2018) outlines how introducing Islamic finance in a country may lead to either increased financial inclusion by attracting people with no bank accounts who have self-excluded for religious reasons or by convincing people to move from conventional banks to Islamic ones. This migration depends on many factors, including not only *Sharia* compliance but also pricing, proximity of branches and quality of services (Aaminou & Aboulaich, 2017). Gilani (2015) concludes that Islamic banking's ethics play a great role in attracting Muslims and non-Muslims to banking.

Zamer (2018) argues that the success of Islamic banking depends on three pillars: product structure (such as low cost and collaterals), access channels (such as ATM access and online banking) and quality (such as trust of Islamic banking services).

Ayyub et al. (2019) investigate the predictors of the financial intention to use Islamic banking among users and non-users in Pakistan. They conclude that perceived behaviour, control and usefulness are the noteworthy predictors. In another study in the United Arab Emirates, Kaakeh et al. (2019) show that the use of Islamic banking is directly affected by customers' attitude. In addition, they explore other factors affecting customer intention, including *Sharia* compliance, awareness and individualism. Fauziah et al. (2013) highlight how religion, social influence and degree

of favourableness are jointly responsible for determining consumers' acceptance of new Islamic home financing concepts in Malaysia. Lujja, Mohammad and Hassan (2016), meanwhile, also find that the intention to adopt Islamic banking in Uganda is positively influenced by attitude.

In contrast, Reza Jalilvand, Shahin and Nasrolahi Vosta (2014) argue that customers' attitude towards Islamic banking services in Iran is affected by brand loyalty, brand image, brand awareness and perceived quality.

Shinkafi, Yahaya and Sani (2019)'s theoretical study highlights the determinants of realising financial inclusion in Islamic finance. They find that political commitment, robust technology, effective financial access, the services of Islamic financial institutions and regulations are the most important determinants.

Modan and Hassan (2018) examine the extent to which the current regulatory and legal framework has helped introduce Islamic banking as an important component in Mozambique's financial system, and they find a conflict between the nation's regulatory framework and *Sharia* principles. M. Thaker, H. Thaker and Pitchay (2018) show how religion plays a key role in the public relations activities of Islamic banking institutions in Malaysia.

By contrast, according to Zamer (2018) Islamic banking in the Middle East and sub-Saharan Africa faces challenges, including regulations, need to provide high-quality services to gain customers' trust and problems related to creating access to services without heavy investment from banks. He also demonstrates that mobile money services and digital channels can help address these challenges.

Ben Naceur et al. (2015) explore the relationship between the Islamic banking's development and financial inclusion in countries of the Organisation of Islamic Cooperation (OIC). According to the authors, using financial services did not increase as quickly as access to financial services increased. A relatively weak positive link exists between Islamic banking and the provision of credit to households and firms to finance investment.

Mustafa, Baita and Usman (2018) conducted a study in nine Muslim countries (Saudi Arabia, Malaysia, the United Arab Emirates, Kuwait, Qatar, Turkey, Indonesia, Bahrain and Pakistan) to analyse the impact of Islamic finance on economic growth and financial inclusion. Their findings show that Islamic finance has a significant positive impact on economic growth but not on financial inclusion and that financial inclusion and economic growth affect each other positively and significantly.

2.2.3 Summary of Literature

The reviewed literature shows that interest in financial inclusion has grown in recent years because it is important for economic development, poverty reduction and the well-being of individuals. The literature covers financial inclusion in many economies and regions worldwide from various aspects. Certain aspects of financial inclusion have been explored in the MENA region as well. Most of studies show that females, as well as the poor and young, are more likely to be financially excluded.

In addition, interest in studying the Islamic banking effect on financial inclusion has risen, with the objective of helping more Muslims to become financially included, given the fact that *riba* is forbidden in Islam. Some studies find that Muslims' demand for Islamic banking services depends on the degree of religious affiliation. The

literature does not yet show explicit evidence that Islamic banking positively influences financial inclusion.

However, no study has investigated the effect of Islamic banking share (that is, the percentage of Islamic banking assets relative to the total banking sector assets) on financial inclusion in the MENA region, where most of the population is Muslim. Particularly, no study has investigated how the impact of Islamic banking share on financial inclusion in middle-income MENA countries differs from that in high-income MENA countries. We believe this is an important gap in the literature, which deserves to be studied. Given that the people in poorer parts of the world are, on average, more religious than those in societies with advanced economies (Diener, Tay, & Myers, 2011), this thesis aims to investigate whether Islamic banking will help religious individuals in the middle-income countries of the MENA region or not.

This study is the first to focus on the effect of Islamic banking share on financial inclusion in MENA countries with different levels of income and development. For this purpose, we study the impact of individual characteristics on the indicators of financial inclusion and barriers, saving motivations, loan-taking motivations and alternative sources of borrowing in the MENA region.

In addition, we analyse Islamic banking share and the countries' levels of development. The first variable is added because Islamic banking is a growing sector and the MENA region has a relatively high total of Islamic banking assets across the world. So, Islamic banking share is expected to have a significant impact on financial inclusion. The second variable, the development level, is intended to capture income level differences between MENA countries.

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Furthermore, this study adds the interaction between Islamic banking share and level of development to its model to understand how the effect of Islamic banking on financial inclusion differs relative to the level of each country's development.

We expect that these contributions will add value to the field of study and that they will have important implications for academia, Islamic banking and regulatory bodies.

Chapter 3

FINANCE IN THE MENA REGION AND HYPOTHESES

3.1 Islamic Finance and Islamic Banking

3.1.1 Overview

Islamic financial system is 'a financial system which fully conducts financial transactions and runs operations according to the ordinances and values of the Islamic laws' (Abu Seman, 2016). In other words, to be Islamic, the system should not include conventional transactions, and the funds of banking and institutions should be mobilised according to *Sharia*.

Thus, an Islamic finance sector should be based on *Sharia*, which prohibits both interest and gambling (Soage, 2020).

Islamic finance has rapidly grown in the past few decades, becoming a huge industry. Global Islamic finance industry assets reached $2.44 trillion in 2017 (Reuters, 2017). These assets are measured through five sub-sectors: Islamic banking, *takaful*, *sukuk*, Islamic funds and other Islamic financial institutions, such as investment companies and micro-finance institutions. The banking sector is the largest in the Islamic finance industry, and it accounts for 71 percent of these assets' total or $1.72 trillion (Reuters, 2017). Globally, Islamic services are provided by more than 2000 Islamic financial institutions (Mughal, 2016). The first Islamic financial institution of the modern era

was opened in the 1960s in Egypt; in the 1970s, Islamic finance began to spread other Arab countries (Soage, 2020).

The recent rapid growth in Islamic finance is due to three main reasons. The first is the increasing Muslim population globally, with a prediction that Muslims will reach 30 percent of the world's population by 2025. The second is the booming oil revenues, which have pushed Gulf Cooperation Council (GCC) countries to search for new investments outlet, and the third is financial crises, which cause people to hedge their risk by entering into new financial systems (Islamic banking & finance, n.d).

3.1.2 Islamic Financial Instruments and Islamic Banking's Regulations

Islamic banking instruments, which are alternatives to conventional banking instruments, reflect the spirit of Islam. They do not include *gharar* (uncertainty), *riba* (usury) and *maisir* (gambling) in their elements (Abdul Rahman and Nor, 2016).

As explained by Soage (2020, pp. 69-72), the main Islamic banking instruments are as follows:

- *Murabaha*, in which a bank buys an asset on behalf of the client and sells it to the client on agreed instalments and mark-up.

- *Qard hassan,* which is an interest free loan, given to needy persons.

- Profit-and loss- sharing loan (PLS) is a participation arrangement in which the lender assumes both returns and risks with the borrower in productive activities instead of demanding fixed interest from borrower regardless the project's result. PLS involves *mudarabah and musharaka.*

Zamer (2018, pp.118-119) also explains the other main Islamic financial instruments:

- *Mudarabah*, which is a contract between two parties; the investor provides capital and the entrepreneur offers work and skills, and the investor bears all losses, and the entrepreneur earns his share of the profits.

- *Musharaka*, which is a contract between two parties, the investor and the entrepreneur, who both share the profits and losses.

- *Takaful,* which is similar to insurance, involves participants agreeing to donate some of their participations to suffered participants for the damages.

- *Ijara* (leases), in which the bank purchases an asset and leases it to the customer upon agreement; the customer pays the fixed rental instalment to the bank, and the bank is liable for the ownership and maintenance of the asset.

- *Bai Salam* (forward sale), in which the buyer pays in advance for a specific asset or product that the seller agrees to supply at a future date; it is often used for agricultural products.

- *Istisna'a* which means asking for something to be produced and is another type of *Bai Salam*, in which the seller and customer agree on the price and quality for the sale of a non-existent product, which will be produced and delivered in future.

Islamic banks follow the regulations of both the government and central bank, which also control conventional banks, and also the regulations of the *Sharia* Supervisory Board, which is responsible for approving Islamic products and checking that Islamic banks transactions comply with *Sharia* (Salman & Nawaz, 2018).

Kettell (2018) clarifies under which field the Islamic laws regulating banking and finance activities fall. The classification is presented in figure 2.
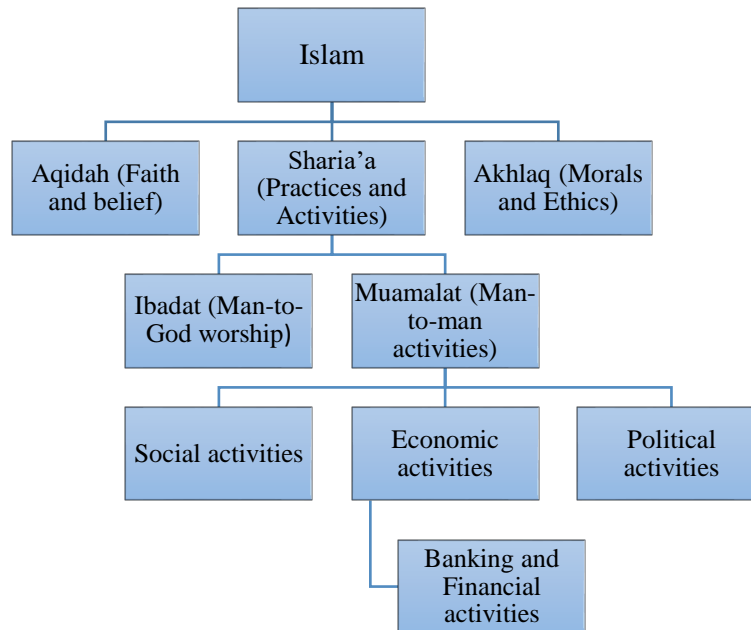
Note: source, Kettell (2018, p.15).
Figure 2: Islamic law of banking and finance activities

3.1.3 Differences between Conventional and Islamic Banking

Studies show that Islamic banks are more resilient to financial crisis than conventional banks (Ali, 2011; Ariss, 2010; Shafique, Faheem, & Abdullah, 2012). Many of the features of Islamic banks as well as standards of *Sharia* are different from those of conventional banks, which could be the reason for their resilience (Aldosari, 2018). Aldosari (2018) lists the main features' differences as below:

- In contrast to conventional banks, Islamic banks do not consider money a commodity, service or product, so it is not priced.

- Islamic banking focuses mainly on real assets in their transactions, not on financial assets.

- Islamic banking focus on profit and loss sharing with parties of investments, not on a fixed determined interest rate that make the party liable to it.

- In contrast to conventional banks, no extra costs are imposed by Islamic banks upon default.

- The relationship between Islamic banks and the customer could be as partner, trader, investor as well as seller and buyer and lessor and lessee. In conventional banking, the relationship is creditor and debtor.

- Islamic banking guarantees deposits solely for current accounts, whereas deposits are considered an obligation for conventional banks.

- The activities of Islamic banking are transparent. But in conventional banking, not all transactions and information are transparent.

- Speculation on outcomes and implementation are prohibited in Islamic banking.

- Undertaking transactions or doing business that violates Islamic law is prohibited in Islamic banking.

- Islamic banking and financial institutions serve as a *zakat* centre.

- The priority in Islamic banking is participation in partnership organisation. Conventional banking's priority is to lend and cover loans with compound interest rates.

The main accounts in Islamic banks are as follows:

1- Demand deposit accounts: the banks guarantee the nominal value; it does not give profit to the depositor. This kind of accounts is not risky.

2- Saving accounts: the bank guarantees the nominal value, and depositors earn some profit, but profit is not guaranteed. This kind of accounts is low risk.

3- General investment account: the nominal value is not guaranteed; it offers profit and loss sharing but no guarantee on profit. It is considered risky.

4- Special investment account: this type of account is similar to the previous one; the difference is that it is offered to certain wealthy customers or corporations, and the profit and loss sharing distributions may differ (Bjorklund & Lundstrom, 2004).

3.2 The Financial System in the MENA Region

3.2.1 Overview of the MENA Region

The MENA region enjoys privileges in its geographical site as well as in its percentage of young people and its increasing number of educated people. But it suffers from deep political conflict and wars. This reality affects the level of economic growth negatively, which erodes the confidence of investors, damages oil prices and reduces the revenues of many industries (OECD, 2016).

In the MENA region, there is a wide variation in the level of GDP per capita. Some countries are considered high-income countries, and some are considered middle-income countries. Israel, Bahrain, Saudi Arabia, Kuwait, United Arab Emirates, Oman and Qatar are high-income countries, whereas the remaining MENA countries are upper and lower middle-income countries (Forouheshfar, 2017).

The MENA region has one of the fastest growing populations in the world (OECD, 2016); 50 percent of the region's population is under the age of 25 (Forouheshfar, El Mekkaoui, & d'Albis (2020). However, the region (excluding the GCC countries) does suffer from high rates of unemployment, especially among the youth. The GCC countries, which are rich in oil and gas and are considered high-income countries, do not suffer from high rates of unemployment. In contrast to other MENA countries, they are importers of labour (Forouheshfar, 2017). Youth unemployment in the MENA

region is about 25.1 percent in the Middle East and 23.7 percent in North Africa. The youth unemployment rate of the region is high, and it is almost double that of the world (12.6 percent) (Saleem, 2013).

Women in the MENA region face difficulties in accessing finance for capital, represented in the form of high interest rates on credit, collateral requirements and other aspects related to legal and administrative procedures. The region has the lowest percentage of women ownership of SMEs (Afaemme, n.d). The level of female entrepreneurship is 12 percent in Middle East and 15 percent in North Africa, which are very low in comparison to the world average of between 31 and 38 percent (Saleem, 2013).

According to the World Bank, MENA is the only region where the level of extreme poverty has risen from 2.7 percent to 5 percent during the period from 2011 to 2015 (Atamanov & Dandon, 2018).

In a nutshell, the MENA region has many problems from unemployment to access to finance and ultimately to poverty.

3.2.2 Finance in the MENA Region: General Outlook

According to World Bank (2014), the financial system in a country is defined as follows:

> To include financial institutions (banks, insurance companies, and other nonbank financial institutions) and financial markets (such as those in stocks, bonds, and financial derivatives). It also encompasses the financial infrastructure (for example, credit information sharing systems and payments and settlement systems). (p. xvii)

In the MENA region, the financial sector is bank based; banking assets represent 57 percent of the total financial assets, and credit supplied by banks is about 60 percent of gross domestic product (GDP) (Brack, 2012). The bank deposits are 68.17 percent of the GDP, and stock market capitalisation is 60.8 percent of the GDP (Forouheshfar, 2017).

The role of the banking sector in the MENA region is vital, especially as it is the monetary strategy instrument used by governments to facilitate the plan of development and economic growth, although it is affected by the political and economic situation in the region (Mateev & Mrad, 2018).

Governments dominate the banking sector. In the region, public banks represent anywhere from 13 percent of a country's total financial assets (Kuwait) to 90 percent (Algeria) (Brack, 2012).The relative size of central banks in the MENA region is around 6 percent of the GDP, which is higher than other high-income countries (around 2 percent) (Forouheshfar, 2017).

In the MENA region, the flexibility of the interest rate is constrained (Pearce, 2011). Governments and monetary authorities widely intervene in interest rate spreads as well as the allocation of credit and liquidity in many MENA countries (Creane et al., 2006). In certain MENA countries, the public banks suffer from a high level of nonperforming loans (NPLs). Moreover, the equity market is inefficient, and income is fixed (Brack, 2012). The political situations negatively affect the judicial system and weaken the enforcement of property rights. Besides, assets are concentrated in a few large banks in the MENA region.

In general, the MENA region has imperfect legal, supervisory and regulatory frameworks (Brack, 2012) although many MENA countries (such as the GCC countries, Jordan, Lebanon, Morocco and Tunisia) have strong and up to date banking regulations and banking supervision (Cerane et al., 2006). Although half of MENA countries have open financial sectors, the other half has restrictions (Cerane *et al.,* 2006).

Foreign banks exist in all MENA countries. Their market shares are restricted, although some of them have significant shares of a bank's capital. But their presence in the MENA region helps to boost innovation (Brack, 2012).

Financial development could lead to growth when it plays a role in increasing the efficiency of intermediaries, such as decreasing the costs of making transactions as well as monitoring and information sharing. But government intervention in the financial sector and using financial system as source of public finance could hinder financial development (Creane et al., 2006). In the MENA countries which have a larger number of private banks, competiveness in the banking sector is low, and most of the offered loans are short and for commercial purposes. Moreover, most of them are provided to large companies, not SMEs. Thus, they do not play a sufficient role in economic growth (OECD, 2011).

According to the International Finance Corporation (IFC), financial institutions and banks in the MENA region are not able to offer profitable and sustainable SME banking products because the environment in the MENA region (such as insufficient regulations, financial infrastructure, poor lending capacity and scarcity of available collateral) restricts SME financing (Saleem, 2013).

According to the World Bank (2014), financial development for both financial institutions and financial markets can be measured by access, depth, efficiency and stability (See figure 3).
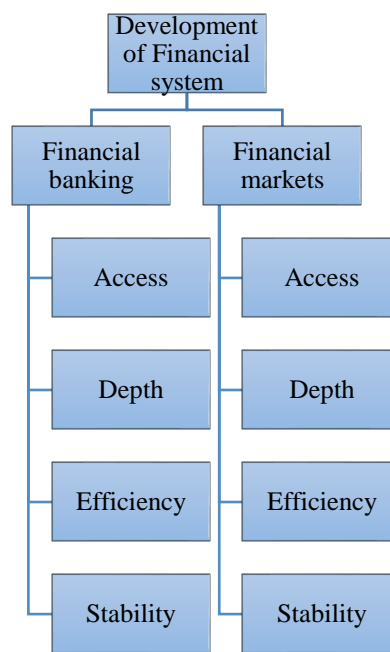
Note: source, Adapted from World Bank (2014, p.49).
Figure 3: Development of financial system's indicators

In financial institutions, access is measured by the percentage of adults (who are 15 years old and above) who have a formal bank account. Depth is measured by 'private credit by deposit money banks to GDP (%)'. Efficiency uses 'the interest rate spread', and stability uses the 'Z-score for commercial banks', which compares returns and capital in terms of riskiness (World Bank, 2014, pp.159-162).

In comparison with the rest of the world, the MENA region has the lowest percentages of access and depth (figure 4). The region is the second after high-income countries regarding low interest rate spread. And it has the highest Z-score for commercial banks, meaning the highest stability.
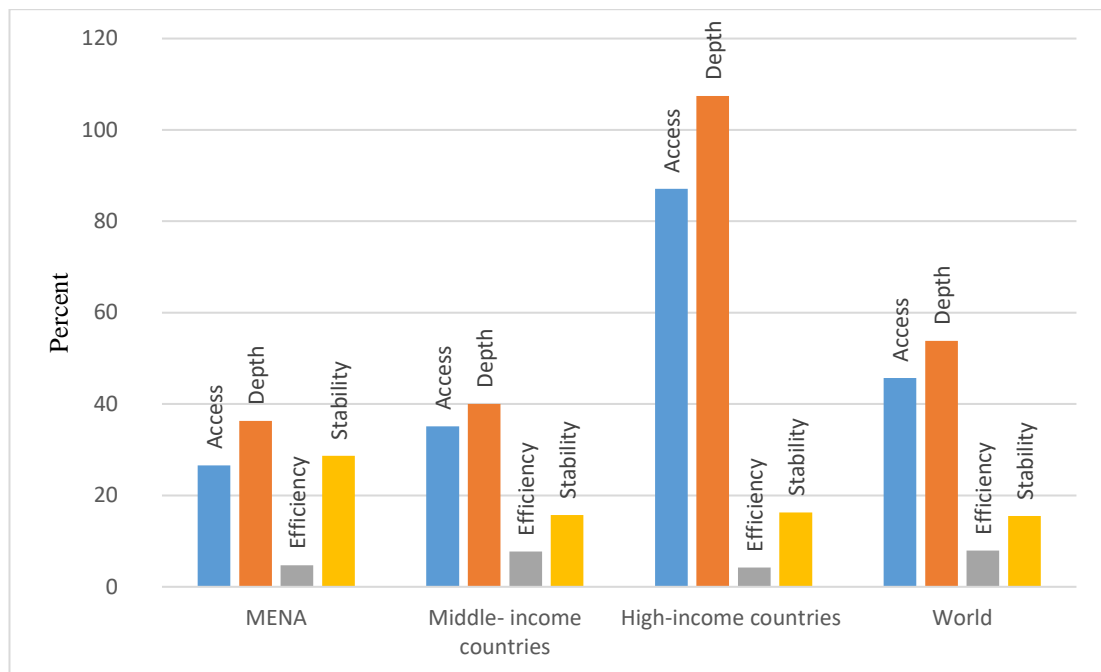
Note: source, Figure is created by the author on the basis of data obtained from the
World Bank (2014, pp.159-162).
Figure 4: Comparison of financial institutions' development between MENA and
other regions (2009-2011) [3]

For the development of financial markets, access is calculated by 'the ratio of market
capitalisation excluding the top 10 largest companies to total market capitalisation'[4],
whereas depth is defined as 'market capitalisation plus the amount of outstanding
domestic private debt securities as percentage of GDP'. Yet efficiency is 'stock market
turnover ratio (%)', and stability is 'stock price volatility' (World Bank, 2014, pp.163-
166).

The MENA region has the lowest indicators of access to, stability and efficiency of
financial markets in comparison with the rest of the world, including high- and middle-
income countries (See figure 5).

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[3] We merged upper and lower-middle income countries in one category (middle income countries).

[4] Weighted average by stock market capitalization.
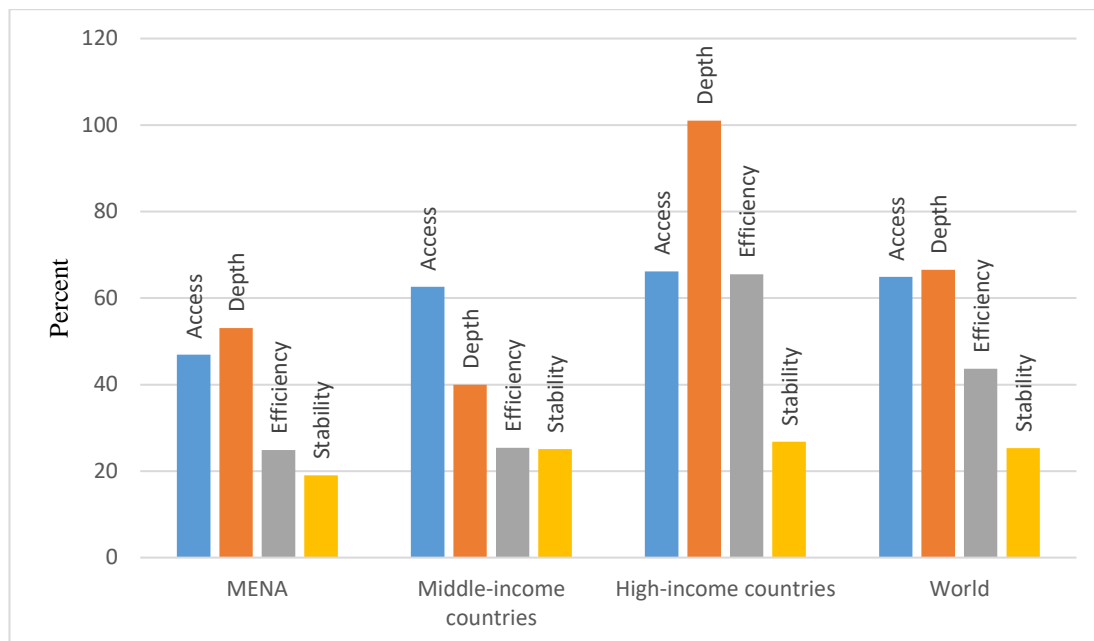
Note: source, Figure is created by the author on the basis of data obtained from the World Bank (2014, pp.163-166).

Figure 5: Comparison of financial markets' development between MENA and other regions (2009-2011) [5]

World Bank sources also show that market depth in the MENA region is lower than that of high- income countries and the rest of the world. However, it is higher than that of middle-income countries.

These indicators are consistent with Brack's (2012) study of MENA, which found that financial markets develop slowly because of the lack of risk coverage instruments. That is, in the MENA region, the diversification of exports is narrow; the public sector and family-owned firms dominate.

3.2.3 Islamic Finance in the MENA Region

Islamic finance has become an important element of the region's agenda for growth (Ali, 2011). MENA countries experienced high growth in their financial sectors as well

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[5] We merged upper and lower-middle income countries in one category (middle income countries).

as in Islamic banking between 2002 and 2008. One of the reasons that contributed to this growth was the 11 September attacks, which because of the uncertain situation led to the outflow of funds from US banks and financial markets to the MENA region as well as to other ones. In addition to the investment surplus, the high oil prices and the rise of the real estate market in many of GCC countries in the same period also led to growth (Ali, 2011). The large number of Muslims in the region is also considered an important reason for the growth of Islamic banking in the MENA region (Oracle Financial Services, 2017).

According to the Islamic Financial Services Board (IFSB, 2019), the 2018 share of total Islamic financial service growth in the MENA region (excluding GCC) represented 25.1 percent of total global Islamic service growth. It ranked third after the GCC countries (42.3 percent) and Asia (28.2 percent).

The Islamic financial services industry includes three main sectors: banking, capital markets and *takaful.*

Islamic banking has been growing in MENA before, during and after the global financial crisis. The growth of the conventional financial sector in the region is considered an important determinant of the growth of Islamic banking because there are some common factors that are important in the growth of both conventional and Islamic banking. Regulatory and political support significantly affect the growth of Islamic banking (Ali, 2011). The market share of Islamic banks for all of the MENA banks was 26.9 percent in 2017 (Wang & Lu, 2020). The total Islamic banking assets of the MENA region (excluding GCC) were 540.2 billion dollars in 2018, whereas the GCC region's total Islamic banking assets were 704.8 billion dollars. Thus, the MENA

region (including the GCC) has the highest share of global Islamic banking assets in the world (79.3 percent) (IFSB, 2019).

According to the Islamic Financial Services Board (IFSB), in 2019, the size of s*ukuk* (which is the alternative to conventional bonds) reached 0.3 billion dollars, and the Islamic funds' assets were 0.1 billion. MENA (excluding GCC) had the lowest size of *sukuk* and Islamic funds globally, whereas Asia had the largest.

The volume of *takaful* (the alternative to conventional insurance) is 10.3 billion dollars, and MENA has the second highest volume after the GCC region.

Globally, Saudi Arabia and UAE have the second and third highest share of global Islamic banking assets, and they are also the second and third large issuer of overall *sukuk* in 2018. Moreover, Saudi Arabia is the largest domicile of the total Islamic funds in assets under management (AUM) and the largest global insurance market (IFSB, 2019).

The most developed Islamic banks in the region are in Bahrain, Qatar, UAE, Saudi Arabia and Kuwait. The majority of Islamic banks in the MENA region are privately owned and operate beside conventional banks and other financial institutions, except in Iran (Ali, 2011) and Sudan (IFSB, 2016), where all banks are Islamic.

The Islamic banks in the GCC are doing better than the conventional banks. The numbers indicate that they were more profitable, more capitalised and had less credit risk in the period between 2003 and 2010 (Kediri, Charfeddine, & Youssef, 2015).

There is narrow range of Islamic products offered in MENA, the most common product offered being *Murabaha* (Pearce, 2011). The money market is allowed in the MENA region, but due to the strict rules imposed by *Sharia* scholars, the products are less complex (Oracle Financial Services, 2017).

Islamic microfinance, which includes microcredit and *microtakaful* in Muslim countries, is less developed than in the rest of the world. Sudan is an exception, as its entire financial system is Islamised, and the central bank promotes this sector and supports it with developed regulations (IFSB, 2016).

3.3 Hypotheses

Based on the theoretical framework together with the literature review outlined in chapter two and the financial settings explained in the first part of chapter 3, we develop the thesis hypotheses in this part of the study.

One of the objectives of this study is to understand how Islamic banking share (the percentage of total assets under Islamic banking relative to the total banking sector assets) affects financial inclusion in MENA countries, with different levels of development. Most residents in MENA countries are Muslim, and *Sharia* law prohibits Muslims from paying *riba* (interest) on borrowed money. We expect that Islamic banking share will have a positive impact on financial inclusion in the MENA region, particularly among individuals who are financially excluded because of a religious reason (voluntary exclusion). And as it has been proved globally, people in poorer countries are more religious than in richer ones. Thus, we expect that the Islamic banking share will have a better effect on financial inclusion in middle-income countries than in high-income ones.

We benefit from the methodology of Zins and Weill (2016) and Shihadeh (2018). Following them, we use such individual characteristics as gender, age, income and education as independent variables to answer the following research questions:

- Which individual characteristics are more associated which financial inclusion indicators in MENA countries?

- How are the financial inclusion barriers associated with individual characteristics?

- How is saving motivation associated with individual characteristics?

- How are formal and informal savings associated with individual characteristics?

- How is loan-taking motivation associated with individual characteristics?

- How is the use of alternative borrowing sources associated with individual characteristics?

We extend previous studies by adding two new independent variables: Islamic banking share and countries' economic development levels. Furthermore, we calculate the interaction between these additional variables to demonstrate how the impact of Islamic banking share on determinants of financial inclusion differs between high-income and middle-income MENA countries. We further address the added variables with the following research questions:

- Does Islamic banking share have a positive impact on financial inclusion in the MENA region?

- How does the level of economic development in each MENA country affect its financial inclusion measurement?

- Does the impact of Islamic banking share on financial inclusion differ between high-income and middle-income countries of MENA?

Based on the literature review and our study of finance in the MENA region, as well as the discussion in this section, we have developed three main hypotheses to guide our study:

H1: Gender, age, income and education level of individuals have an impact on financial inclusion in the MENA region.

H2: The level of economic development has an impact on financial inclusion in the MENA region.

H3: Islamic banking has a positive impact on financial inclusion in the MENA region.

These hypotheses will be tested with the data and methodology introduced in the following chapter.

Chapter 4

DATA AND METHODOLOGY

4.1 Data

The study uses the World Bank Global Findex database, which contains individual-level data originating from a 2014 survey of more than 150,000 adults in 148 countries. This survey includes questions about individual characteristics; the questions focus on whether individuals own a formal bank account, have savings, can access borrowing from formal financial institutions as well as the reasons for financial exclusion (voluntary and involuntary exclusion). Using the 2014 data, this analysis considers 14 countries in the MENA region[6] and excludes countries that have significant missing data from the sample. In addition, the study uses central bank sources and Zawya database for data on Islamic banking[7].

We utilise the data on the main indicators of financial inclusion as well as barriers, reasons for saving and borrowing (motivation), informal saving and alternative sources of borrowing.

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[6] The countries included in this sample are Algeria, Egypt, Iraq, Israel, Jordan, Kuwait, Lebanon, Mauritania, Palestine, Saudi Arabia, Sudan, Tunisia, the United Arab Emirates and Yemen.

[7] https://www.zawya.com/islamic-finance-development-indicator/

4.2 Model and Methodology

In our model, the explanatory variables are individual identity characteristics, economic development level and Islamic banking share. We define them as follows:

- We consider gender by introducing a dummy variable equal to 1 for females and 0 for males.

- We define age as the number of years (age) and squared age (age^2) to account for possible nonlinearity in the relationship between age and financial inclusion.

- We analyse income using four dummy variables, with 1 for each quintile of income from the first (poorest 20 percent) to the fourth (fourth 20 percent) if the income of respondent is in that quintile and 0 otherwise; the fifth income quintile is the omitted dummy variable.

- We incorporate level of education by using a dummy variable with 1 for the complete tertiary education (complete education) and 0 for the complete secondary education or lower (incomplete education).

- We measure the development levels of countries included in the MENA region sample using two dummy variables: 1 if the individual is from a high-income country (high income) and 0 if the person is from a middle-income country (middle income). This is intended to capture variation in income levels among MENA countries.

- We represent Islamic banking share by the percentage of total assets of Islamic banking relative to total banking sector assets (Islamic banking).

- We examine the interaction between the countries' development levels and Islamic banking to see if the effect of Islamic banking on the determinants of

financial inclusion differs between high-income countries and middle-income countries.

Definitions and descriptive statistics are provided in table 1 below.

Table 1: Definition and descriptive statistics for the main variables in the estimation

	Definition	Obs.	Mean	St. dev.
Female	1 if female, 0 otherwise	14098	0.458	0.498
Age	Age in number of years	14087	36.588	14.928
Income_poorest 20%	1 if income is in the first income quintile, 0 otherwise	14098	0.165	0.372
Income_second 20%	1 if income is in the second income quintile, 0 otherwise	14098	0.177	0.381
Income_third 20%	1 if income is in the third income quintile, 0 otherwise	14098	0.195	0.397
Income_fourth 20%	1 if income is in the fourth income quintile, 0 otherwise	14098	0.213	0.410
Income_richest 20%	1 if income is in the richest income quintile, 0 otherwise	14098	0.249	0.433
Complete education	1 if individual has a complete education,0 otherwise	14098	0.496	0.500
Secondary education	1 if individual has a secondary education, 0 otherwise	14098	0.501	0.500
Countries' level of development	1 if the country of individual classified as high-income country,	14098	0.286[a]	0.452
	0 if the country of individual classified as middle income countries		0.714[b]	0.452
Islamic banking size	Percentage of total assets of Islamic banking to total banking sectors' assets.	14098	0.206	0.275
Countries' level of development * Islamic banking size	Interact between dummy variable and numeric variable	14098	0.084[c]	0.175
			0.121[d]	0.256

Note: source, Author's own calculations. Data obtained from World Bank 2014 Global Findex database. This table shows the definition and the descriptive statistics for the characteristics of individuals (income, education, age, gender and level of development, Islamic banking size, and interaction between level of development and Islamic banking size) used in our estimation.
[a] For high-income countries.
[b] For middle-income countries.
[c] For interaction between high- income countries and Islamic banking size.
[d] For interaction between middle- income countries and Islamic banking size.

We use probit estimation to explain the measures of financial inclusion using the following equation:

$$\text{FinInc}_i = \alpha + \beta * \text{Gender}_i + \gamma * \text{Age}_i + \delta * \text{Income}_i + \sigma * \text{Education}_i$$

$$+ \tau * (\text{High-income countries})_i + \varphi * (\text{Islamic banking})_i$$

$$+ \lambda * (\text{High-income countries} * \text{Islamic banking})_i + \varepsilon_i \qquad (1)$$

Where FinInc is a binary variable that denotes one of the following dependent variables each time (see table 2):

- Three binary indicators of financial inclusion: ownership of an account in a bank or a formal financial institution (formal account), savings account in a bank or a formal financial institution in the past 12 months (formal saving) and borrowing from a bank or a formal financial institution in the past 12 months (formal borrowing). The questions for these indicators in the World Bank survey are answered as 'yes' or 'no' and are respectively converted to '1' and '0'.

- Nine barriers to formal account access: the questions for these having a formal account's barriers are considered 1 if respondent agrees with the barrier; otherwise, it is considered 0. So, the data became binary (1, 0).

- Three saving motivations: the questions for these motivations are considered 1 if the respondent agrees with the reason for saving; otherwise, it is considered 0.

- Informal saving: the questions for informal saving are considered 1 if the respondent agrees that he uses informal saving methods; otherwise, it is considered 0.

- Four borrowing motivations: the questions for these motivations to borrow are considered 1 if the respondent agrees with the reason for borrowing; otherwise, it is considered 0.

- Three sources of borrowing: if the respondent agrees with the source, it is considered 1; otherwise, it is considered 0.

i is used as an index for the survey respondents.

We use equation (1), first, to estimate the main indicators of financial inclusion. Then, we estimate the effect of explanatory variables on one of the nine barriers to formal account access each time, where one to nine barriers of having a formal account is used each time (see table 2).

Next, we investigate the association between the explanatory variables and saving motivation. After this, we analyse the determinants of informal saving and compare the results of that estimation with formal saving.

Then, we investigate the motivations for requesting a loan. And, finally, we estimate how the four individual characteristics associate with alternative sources of borrowing.

Chapter 5

EMPRICAL RESULTS AND ANALYSIS

5.1 Descriptive Statistics

In this chapter, the descriptive statistics and empirical results are presented[8]. The descriptive statistics as dependent variables we use for the indicators of financial inclusion are presented in table 2. We show the mean for our MENA sample as well as the means for the two parts of the MENA country sample. Then, we compare them with the global mean, which provides a reference point to compare MENA with the rest of the world.

The table is divided into six parts. The first part shows the descriptive statistics for the main indicators of financial inclusion: formal account, which represents the ownership of an account in a bank or a formal financial institution; formal savings, which represents an individual's saving behavior in a bank or a formal financial institution in the past 12 months; and formal credit, which represents an individual's borrowing behavior from a bank or a formal financial institution in the past 12 months. We use the same indicators that were used by earlier studies (Demirgüç-Kunt and Klapper, 2013; Fungáčová and Weill, 2015; Shihadeh, 2018).

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[8] In order for the study to provide a more in-depth analysis about financial inclusion, the degree of financial inclusion in Palestine relative to other MENA countries has also been studied and is provided in the appendix. We believe that a country specific, more in depth analysis will enrich the study in general and will also help policy makers develop more customized policies.

The second part provides the main descriptive statistics for financial inclusion's barriers, which includes the nine reasons for not having a formal account, as cited by financially excluded individuals.

The third part gives the main descriptive statistics for the respondents' saving motivations (the reasons why the respondents saved).

The fourth part shows the descriptive statistics for saving behavior (if the respondents used formal saving and/or informal saving in the last 12 months). According to Demirgüç-Kunt et al. (2015), informal saving is an alternative to formal saving, which could include informal saving clubs or a person outside the family. It may also include saving in cash at home ('under the mattress') or saving in the form of jewelry, livestock or real estate.

The fifth part shows the descriptive statistics for loan-taking motivations.

The final part shows the descriptive statistics for the different alternatives of individuals' borrowing sources, which are related to the last 12 months in which the survey was carried out.

Table 2: Descriptive statistics for the dependent variables in the estimation

	High-income countries of MENA			Middle-income countries of MENA			MENA countries			Global
	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.	Mean
Main indicator of financial inclusion										
Formal account	4033	0.817	0.387	10065	0.294	0.456	14098	0.444	0.497	0.615
Formal saving	4033	0.301	0.459	10065	0.092	0.289	14098	0.152	0.359	0.274
Formal borrowing	4033	0.300	0.458	10065	0.086	0.281	14098	0.147	0.354	0.107
Barriers to financial inclusion										
Too far away	1045	0.410	0.492	4127	0.175	0.380	5172	0.223	0.416	0.210
Too expensive	852	0.194	0.395	7301	0.147	0.354	8153	0.152	0.359	0.220
Lack of documentation	852	0.225	0.418	7301	0.137	0.343	8153	0.146	0.353	0.180
Lack of trust	852	0.161	0.368	7301	0.125	0.331	8153	0.129	0.335	0.120
Lack of money	852	0.445	0.497	7301	0.417	0.493	8153	0.420	0.494	0.590
Religious reasons	852	0.106	0.308	7301	0.104	0.306	8153	0.104	0.306	0.050
Family member has an account	852	0.491	0.500	7301	0.370	0.483	8153	0.383	0.486	0.280
Cannot get an account	852	0.473	0.500	7301	0.234	0.423	8153	0.259	0.438	0.160
No need for financial services	852	0.390	0.488	7301	0.274	0.446	8153	0.286	0.452	0.300
Saving motivation										
For farm or business	4033	0.153	0.360	10065	0.071	0.257	14098	0.095	0.293	0.138
For old age	4033	0.241	0.428	10065	0.077	0.267	14098	0.124	0.330	0.239
For education	4033	0.240	0.427	10065	0.099	0.299	14098	0.140	0.347	0.223
Saving										
Informal saving	4033	0.122	0.328	10065	0.123	0.328	14098	0.123	0.328	_
Formal saving	4033	0.301	0.459	10065	0.092	0.289	14098	0.152	0.359	0.274
Loan-taking motivation										
For education	4033	0.079	0.269	10065	0.055	0.227	14098	0.061	0.240	0.077
For medical purposes	4033	0.148	0.355	10065	0.124	0.329	14098	0.131	0.337	0.122
For farm or business	3379	0.215	0.411	10065	0.071	0.257	13444	0.107	0.309	0.071
To purchase a home or land	4033	0.204	0.403	10065	0.070	0.256	14098	0.109	0.311	_
Alternative sources of borrowing										
A store	4033	0.250	0.433	9065	0.176	0.381	13098	0.199	0.399	0.079
Family and friends	4033	0.092	0.289	10065	0.226	0.418	14098	0.188	0.391	0.262
Another private lender	4033	0.074	0.261	10065	0.143	0.351	14098	0.123	0.329	0.046
Informal credit	4033	0.323	0.468	10065	0.373	0.484	14098	0.359	0.480	_
Formal credit	4033	0.300	0.458	10065	0.086	0.281	14098	0.147	0.354	0.107

Note: source, Author's own calculations. Data obtained from World Bank 2014 Global Findex database. This table displays the descriptive statistics for the dependent variables studied in our estimations. High-income countries of MENA are: Bahrain, Israel, Saudi Arabia, and United Arab Emirates. Middle-income countries of MENA are: Algeria, Egypt, Iraq, Jordan, Lebanon, Mauritania, Palestine, Sudan, Tunisia and Yemen.

In MENA countries, only 44.4 percent of individuals above the age of 15 have an account with a formal financial institution, which is the main key to financial inclusion. In contrast, the corresponding worldwide average is 61.5 percent. This finding holds true for middle-income MENA countries in the sample; however, for high-income countries in the sample, the three main indicators of financial inclusion are higher than in the rest of the world (see figure 6).
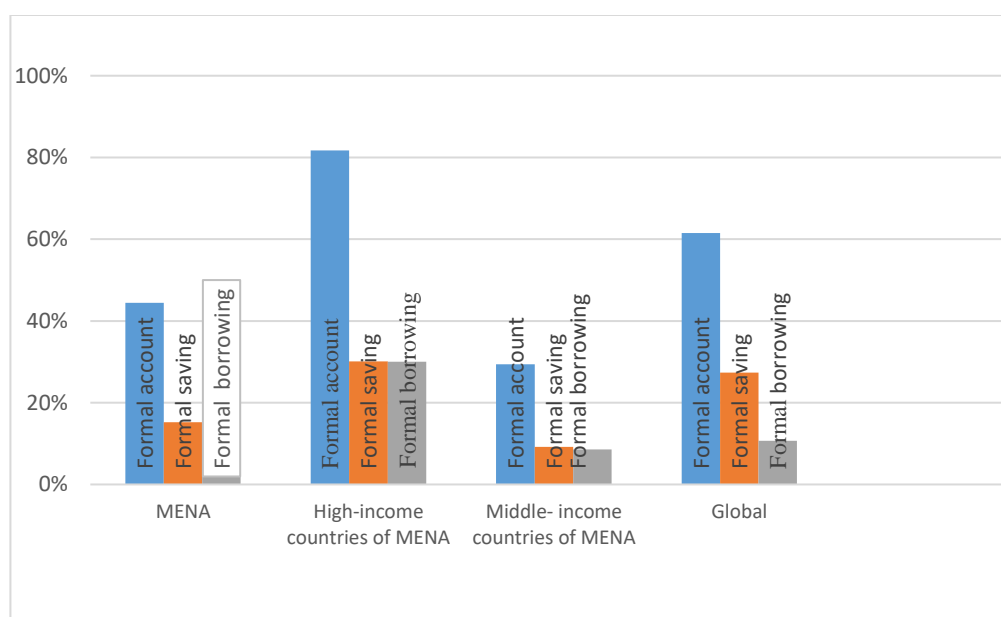
Note: source, Author's own calculations. Data obtained from World Bank 2014
Global Findex database.
Figure 6: Main indicators of financial inclusion in MENA and Global

Figure 7 below shows a variation in percentages of adults owning formal accounts among MENA countries. In particular, it shows that all of the high-income countries of MENA (Bahrain, Israel, Kuwait, Saudi Arabia and UAE) have higher percentages than the middle- income countries[9].

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[9] More comparisons will be shown in the appendix where we compare financial inclusion indicators, barriers and sources of borrowing for Palestine with other MENA countries. Palestine is one of the middle- income countries of MENA.
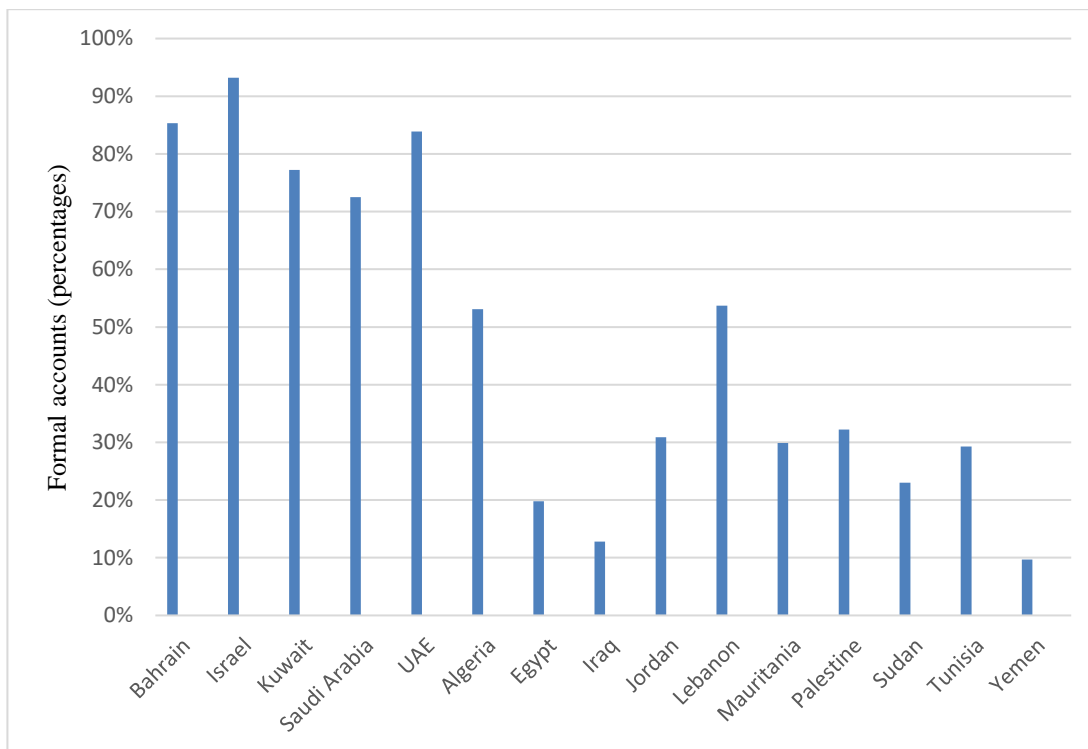
Note: source, Author's own calculations. Data obtained from World Bank 2014
Global Findex database.
Figure 7: Comparison of Percentages of Adults owning formal accounts among
MENA countries

The main reason for financial exclusion, both worldwide and in middle-income MENA countries, is lack of money (See figure 8). This finding is in line with the findings of other studies (Demirgüç-Kunt and Klapper, 2013; Shihadeh, 2018). However, the primary reason for financial exclusion in high-income MENA countries is that another family member has a bank account. The least important reason for financial exclusion in MENA countries in the sample is religious reasons. These findings indicate that most motivations for financial exclusion in the MENA sample are voluntary.
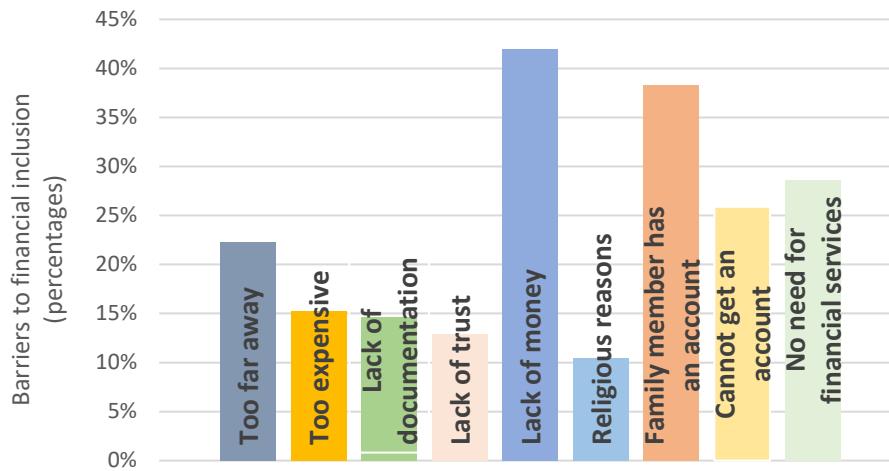
Note: source, Author's own calculations. Data obtained from World Bank 2014
Global Findex database.
Figure 8: Barriers to financial inclusion in MENA

Motivation for saving money is different in the MENA region; the most important motivation for saving in the MENA sample as well as in the middle-income sample is for education, whereas for the world and high-income countries, saving for old age is the most important motivation.

The formal saving percentage in the MENA countries sample is greater than its informal saving percentage. The high-income country sample shows the same, but the middle-income countries, it is the opposite, which is consistent with the results of the study by Demirgüç-Kunt et al. (2015) (See figure 9). The most important reason for loan taking in the MENA county sample and in the middle-income country sample is for medical purposes, while in high-income countries, the most important reason is purchasing a home or land.
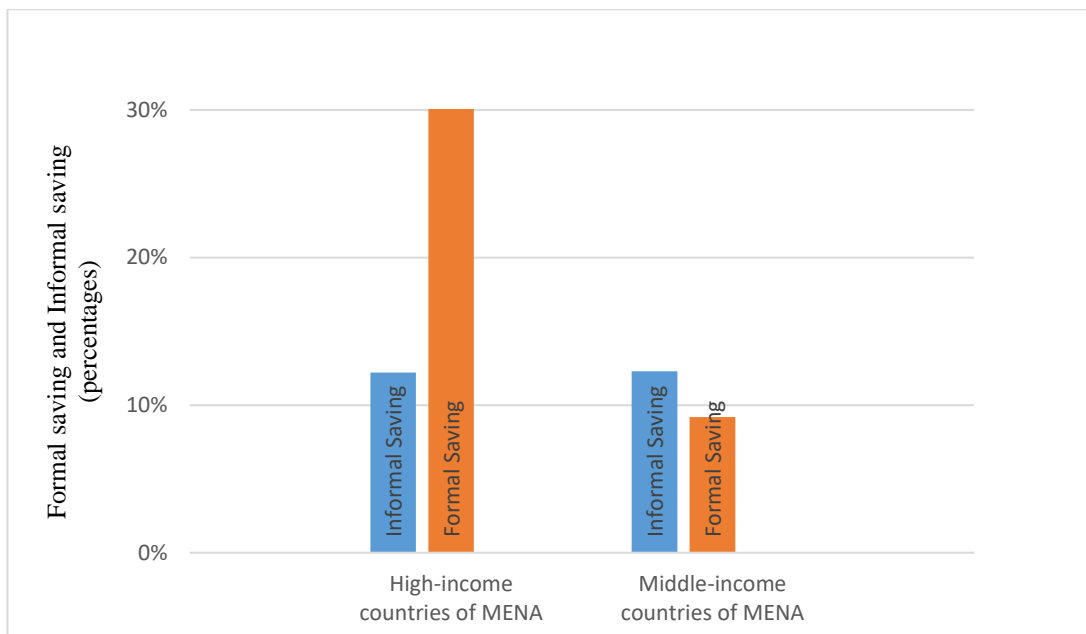
Note: source, Author's own calculations. Data obtained from World Bank 2014
Global Findex database.
Figure 9: Formal and informal saving in high and middle-income countries of
MENA

The main alternative sources of borrowing are shown in part 6 of Table 2. A comparison among these sources shows that, in general, the informal credit percentage is higher than the formal credit percentage in MENA countries. This is both for middle-income and high-income countries. In terms of informal credit, individuals in the high-income countries of MENA borrow mostly from a store, whereas individuals in the middle-income countries of MENA borrow mostly from family and friends, which is the worldwide norm.

In this section of the study, we analyze the degree of financial inclusion in MENA countries and compare their status with other countries worldwide. The data analysis clearly shows that the level of financial inclusion in MENA countries, as a whole sample, is lower than the world's in terms of the formal account and formal saving categories but higher in terms of formal borrowing. In other words, this finding

indicates that the amount borrowed is much higher in the MENA region for each formal account than it is in the rest of the world.

Informal credit exceeds formal credit in the MENA country sample in both parts (high-income and middle-income countries) (See figure 10).
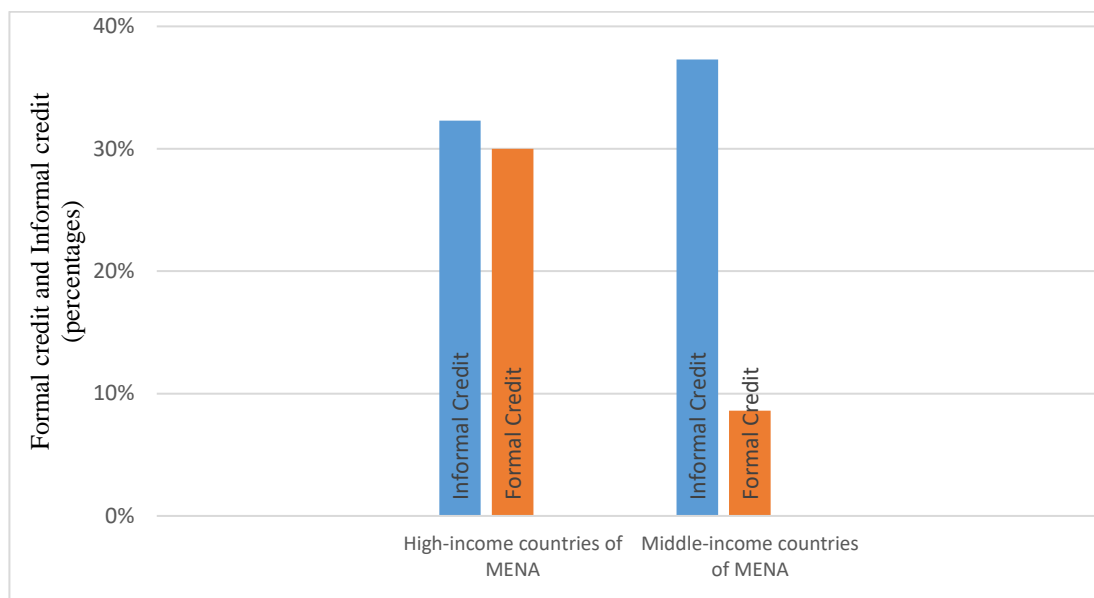
Note: source, Author's own calculations. Data obtained from World Bank 2014 Global Findex database.
Figure 10: Formal and informal credit in high and middle- income countries of MENA

These findings should have significant negative implications on both the social and economic levels of the middle-income countries of MENA. As it has been empirically proven in some studies (Demetriades & Hussein, 1996; King & Levine, 1993), where there is no proper means for accessing finance, economic development is difficult, and the well-being of individuals is jeopardised.

5.2 Analysis and Results

5.2.1 Determinants of Financial Inclusion Indicators

In this part of this study, we utilise the rich dataset from Findex to examine the association between individual characteristics and financial inclusion in MENA countries by using the methodology outlined in the previous section. We include the countries' economic development levels and Islamic banking share and examine the interaction between these two factors.

Table 3 presents the marginal effects of the probit estimation for the main indicators of financial inclusion.

Table 3 shows that being female is not associated with opening a formal account or with having formal credit and formal savings. Demirgüç-Kunt *et al.* (2013) explain that this gender gap is significant in developing countries and that it increases in countries where women face legal restrictions. Demirgüç-Kunt & Klapper (2012) also find that in developing countries, there is a significant gap between women and men who have accounts in formal institutions, and this gap also exists even in the same quintile of income in one country.

According to another study by the World Bank and the International Finance Corporation (2013), which investigates gender differences in law, all 14 MENA economies covered in this study's sample have at least one legal differentiation based on gender in accessing financial institutions and using property. This finding is also confirmed by the low number of young women who participate in the labour force (15 percent in 2017). It is 80 percent higher than the rate for young men (Kabbani, 2019).

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The female unemployment rate (as a percentage of the female labour force) in the MENA region is almost 18 percent (World Bank, 2020).

The results also show that of the three financial inclusion indicators, age has the most significant impact. Specifically, there seems to be a positive relationship between age and financial inclusion; the estimated marginal effect for age is significant and negative for having formal savings and accessing formal borrowing.

Table 3: Determinants of the main financial inclusion indicators

	Formal account	Formal saving	Formal credit
Female	-0.174***	-0.050***	-0.042***
	(0.010)	(0.006)	(0.006)
Age	0.004***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)
Age2	0.000	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)
Income_poorest 20%	-0.337***	-0.096***	-0.014
	(0.016)	(0.009)	(0.009)
Income_second 20%	-0.252***	-0.089***	-0.016*
	(0.015)	(0.009)	(0.009)
Income_third 20%	-0.191***	-0.064***	-0.006
	(0.014)	(0.008)	(0.009)
Income_fourth 20%	-0.087***	-0.041***	0.003
	(0.014)	(0.008)	(0.008)
Complete education	0.017*	0.006	-0.023***
	(0.010)	(0.006)	(0.006)
High-income countries	0.779***	0.290***	0.163***
	(0.021)	(0.009)	(0.008)
Islamic banking size	-0.205***	-0.009	-0.088***
	(0.020)	(0.013)	(0.015)
High-income*Islamic banking size	-0.409***	-0.437***	0.075***
	(0.052)	(0.026)	(0.025)
Observations	14087	14087	14087
Pseudo R^2	0.249	0.135	0.093
Log likelihood	-7293.789	-5184.845	-5340.498
Predicted probability (at mean values)	0.449	0.126	0.126

Note: Source: Author's own calculations. Data obtained from World Bank 2014 Global Findex database. This table presents the probit estimation of the three main determinants of financial inclusion (formal account, formal savings, and formal borrowing) for 14 MENA countries. In the first column, the explanatory variables are presented. The estimated marginal effect is reported. Standard errors are in parentheses. *** Denotes significance at the 1% level. ** Denotes significance at the 5% level. * Denotes significance at the 10% level.

This finding implies that the relationship between age and the use of financial services is nonlinear: as age increases, the use of financial services increases, but after a certain age, the use of formal saving and formal borrowing mechanisms both decreases. This is similar to Fungáčová and Weill's (2015) findings: 'Older individuals might be more reluctant to use formal financial services as they are not used to using them. Alternatively, financial institutions might put less effort into attracting older clients' (Fungáčová and Weill 2015, p.202).

The effect of income level on formal accounts is significantly correlated. Clearly, as income level decreases, the effect on formal accounts becomes negative and significant. This finding agrees with the results of previous studies (Demirgüç-Kunt and Klapper, 2013; Fungáčová and Weill, 2015; Shihadeh, 2018; Zins and Weill, 2016). The analysis of formal savings followed the same pattern: the lower a person's income, the less likely they were to have savings at formal institutions. Regarding formal borrowing, the dummy variables for income are not significant, with the exception of the second income quintile, which shows that as income level decreases, access to finance and savings in formal financial institutions declines.

The results indicate that frequent account use is likely to be higher among older and richer individuals. This finding is consistent with the results of other studies (Allen et al., 2012; Fungáčová and Weill, 2015; Shihadeh, 2018; Zins and Weill, 2016). In addition, the results indicate that gender (female) has a negative effect on the probability of owning formal accounts in the MENA region, which is consistent with the results of Fungáčová and Weill's (2015) study in China, Zins and Weill's (2016) research in Africa, and Shihadeh's (2018) study in the MENAP region. Conversely,

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Allen et al. (2012) do not find any negative effect of gender on ownership of formal accounts in 123 countries.

Education appears to have a significant positive impact on ownership of a formal account. However, the results are mixed when the MENA sample countries are classified according to development level. The findings show that completed education is a significant positive coefficient in high-income MENA countries, whereas the estimates for the middle-income countries are negative and significant[10]. The education coefficient is significantly negative in terms of formal borrowing and insignificant for formal saving in MENA countries overall. The results of the estimations show that financial inclusion is negatively affected by being female, young, poor and better educated. Thus, we do not reject the null hypothesis H1; that is, gender, age, income and education level of individuals have an impact on financial inclusion in the MENA region.

The results also show that the probability of owning a formal account is 77.9 percent higher for individuals in high-income MENA countries than for ones in middle-income countries. This finding is consistent with Demirgüç-Kunt and Klapper's (2013) findings. Moreover, the probability of individuals having formal savings or using formal credit is 29 percent and 16.3 percent more, respectively, in high-income countries than in middle-income ones. Based on these results, we do not reject the null hypothesis H2; that is, the level of economic development level affects financial inclusion in the MENA region.

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[10] The estimates are available upon request.

Concerning the Islamic banking variable, this study finds that as the percentage of Islamic banking assets relative to the total banking sector assets increases, the probability of individuals owning an account in a formal financial institution and obtaining credit from a formal financial institution decreases. In general, there is a negative relationship between Islamic banking share and the main indicators of financial inclusion, although this relationship is not significant regarding formal savings. One possible explanation for this result is that respondents find *Sharia*-compliant products either less attractive or more expensive. This is a conclusion supported by Zamer (2018), who finds that despite the growth of Islamic banking assets globally, there is a gap between the financial products demanded by customers (secure, safe and sustainable with reasonable fees) and what Islamic banks offer. Thus, the degrees of individuals' religious affiliation inform their willingness to deal with Islamic finance and the attendant, more expensive *Sharia*-compliant products. Other possible explanations may be consumers' inadequate amount of information about Islamic banking, which is also noted by Obeid and Kaabachi (2016). Another possibility is consumers' attitude towards Islamic banking, as explained by Kaakeh et al. (2019), Lujja et al. (2016) and Fauziah et al. (2013). Attitude is affected by branding and awareness, as stated by Reza Jalilvand et al. (2014), and by image, *Sharia* compliance, individualism and awareness, as explained by Kaakeh et al. (2019). Based on the results showing a negative relationship between Islamic banking share and formal accounts and formal borrowing, we reject the null hypothesis H3; that is, Islamic banking has a positive impact on financial inclusion in the MENA region.

Finally, the probability that people will have a formal account or use formal savings when the share of the Islamic banking increases is higher in middle-income countries than in high-income ones. Similarly, Ben Naceur et al. (2015) find that the number of

depositors tends to grow faster in low- and lower-middle-income groups, except in high-income countries with Islamic banking. However, the probability of benefiting from formal credit when Islamic banking share increases is greater in high-income than in middle-income ones.

5.2.2 Determinants of Barriers to Financial Inclusion

In this part, we investigate the association between the qualitative characteristics of individuals, the level of economic development of the country, Islamic banking share and the reasons for not having a bank account. For this purpose, we use the nine reasons identified in the World Bank survey that determine the barriers for those who are financially excluded. Table 4 presents the marginal effect results of the probit estimation.

There is a significant positive association between gender, the barrier that one family member has an account and an inability to get an account. This finding may be explained by the fact that men tend to dominate Middle Eastern communities, which is consistent with the findings of Demirgüç-Kunt et al. (2013). These authors explain that having a family member who already possesses bank account affects women more than men in developing countries and can lead to gender gap in economic empowerment. The authors demonstrate that although this reason could be considered to indicate indirect access to a formal account, it is not enough for women to acquire the benefits of financial inclusion. Other determinants are less important for women.

Being older decreases the sensitivity to the reasons of lacking trust, possessing required documents and being unable to get an account, but older people are more sensitive to religious reasons. This finding is supported by Demirgüç-Kunt et al. (2014), who find a positive relationship between age and awareness of Islamic banks

among self-identified Muslim adults, even though this relationship is obtained only at a certain age.

Concerning income, poorer individuals are less sensitive to the fact that banks are too far away and to religious reasons in general. Only the poorest are more sensitive to being unable to afford financial services and are less sensitive to lacking trust as reasons for financial exclusion. Shihadeh (2018) also finds that the high cost of having a formal account is the most cited barrier by the poorest and the poor.

Table 4: Determinants of barriers to financial inclusion

	Too far away	Too expensive	Lack of documentation	Lack of trust	Lack of money	Religious reasons	Family member has an account	Cannot get an account	No need for financial services
Female	-0.088***	-0.030***	-0.001	-0.025***	-0.024**	-0.002	0.053***	0.032***	-0.024**
	(0.012)	(0.008)	(0.008)	(0.007)	(0.011)	(0.007)	(0.011)	(0.010)	(0.010)
Age	0.000	-0.000	-0.001***	-0.001***	0.001	0.000*	0.000	-0.001**	-0.001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Age2	-0.000	-0.000	-0.000	-0.000**	0.000	0.000	0.000	0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Income_poorest 20%	-0.108***	0.021*	0.008	-0.020*	0.003	-0.031***	0.026	-0.015	0.018
	(0.019)	(0.013)	(0.012)	(0.012)	(0.018)	(0.011)	(0.017)	(0.016)	(0.016)
Income_second 20%	-0.093***	0.020	0.010	-0.012	0.024	-0.028***	0.044***	-0.003	0.028*
	(0.018)	(0.013)	(0.012)	(0.012)	(0.018)	(0.011)	(0.017)	(0.016)	(0.016)
Income_third 20%	-0.071***	0.018	0.012	0.010	0.013	0.007	0.030*	0.020	0.028*
	(0.018)	(0.012)	(0.012)	(0.011)	(0.018)	(0.010)	(0.017)	(0.015)	(0.016)
Income_fourth 20%	-0.012	0.012	0.020*	-0.007	0.046***	-0.020**	0.014	0.020	0.003
	(0.017)	(0.013)	(0.012)	(0.012)	(0.018)	(0.010)	(0.017)	(0.015)	(0.016)
Complete education	0.067***	0.013	0.032***	-0.002	0.051***	0.009	-0.080***	-0.003	-0.020*
	(0.012)	(0.008)	(0.008)	(0.008)	(0.012)	(0.007)	(0.012)	(0.010)	(0.011)
High-income countries	0.452***	-0.032	0.054**	0.059**	-0.130***	-0.028	0.022	0.238***	0.099***
	(0.026)	(0.027)	(0.025)	(0.024)	(0.040)	(0.024)	(0.037)	(0.032)	(0.033)
Islamic banking size	-0.133***	-0.156***	-0.118***	-0.008	0.443***	-0.113***	-0.498***	-0.061***	-0.209***
	(0.020)	(0.017)	(0.016)	(0.013)	(0.021)	(0.015)	(0.025)	(0.018)	(0.020)
High-income* Islamic banking size	-0.737***	0.277***	0.132**	-0.070	0.216**	0.159***	0.515***	-0.033	0.118
	(0.070)	(0.064)	(0.059)	(0.059)	(0.095)	(0.057)	(0.090)	(0.076)	(0.081)
Observations	5169	8148	8148	8148	8148	8148	8148	8148	8148
Pseudo R^2	0.118	0.019	0.017	0.007	0.055	0.017	0.058	0.026	0.019
Log likelihood	-2417.445	-3403.287	-3324.294	-3110.378	-5235.540	-2681.995	-5109.098	-4538.417	-4780.264
Predicted probability (at mean values)	0.247	0.154	0.156	0.137	0.407	0.104	0.389	0.295	0.304

Note Source: Author's own calculations. Data obtained from World Bank 2014 Global Findex database. This table presents the probit estimation for the nine barriers of financial inclusion for 14 MENA countries. In the first column, the explanatory variables are presented. The estimated marginal effect is reported. Standard errors are in parentheses.
*** Denotes significance at the 1% level. ** Denotes significance at the 5% level. * Denotes significance at the 10% level

Education is associated with such barriers as lack of documentation, lack of money and distance, which are the most important barriers for those who have completed tertiary education. However, being more educated is not associated with the barriers of not needing financial services or a family member already having an account. These results can be explained by the findings of Dimova et al. (2016), which show that the youth unemployment rate in the MENA region is twice as high as the global average, particularly among those who have completed tertiary education.

In high-income countries, 'lack of documentation', 'too far away', 'lack of trust', 'cannot get an account', and 'no need for financial services' are more cited as barriers to getting a bank account than in middle-income countries. Unsurprisingly, the reason 'lack of money' is less important in high-income countries. Some of these reasons may result from the inefficiencies of the financial intermediaries in collecting and processing information, which can lead to high documentation requirements, an insufficient number of branches, ATMs, and points of sale as well as and high administrative costs, as determined by Demirgüç-Kunt and Klapper (2013).

As Islamic banking increases, most of the barriers to financial inclusion become less problematic. The exceptions are lack of trust, which is not significant, and lack of money, which is more problematic. More importantly, as the Islamic banking share increases, religious barriers become less important because religious people can find formal institutions in which to open an account and use formal services that are compliant with *Sharia* law. This finding is consistent with the study of the World Bank (2014, p.36), which highlights a negative correlation between 'the Islamic banking assets' size relative to the adult population' and 'the share of financially excluded adults because of religious reasons', especially for adults residing in Organisation of

Islamic Cooperation (OIC) countries. This conclusion is also supported by Ben Naceur et al. (2015), who show that the OIC countries which have Islamic banking possess relatively higher levels of inclusion, meaning a decrease of religious barriers. Zulkhibri and Ismail's (2017) study also shows that the percentage of individuals who do not have a bank account for religious reasons in OIC and Arab MENA countries is positively correlated with their residence there and negatively correlated with the density of *Sharia*-complaint financial assets in the economy.

As the Islamic banking share increases in MENA countries, individuals in high-income countries become more sensitive to these barriers: the cost of having a formal account, the documents required by formal financial institutions, individuals' lack of money, religious reasons and a family member already has an account. However, distance becomes less of a barrier.

This study used probit estimation to find the association between the barrier 'too expensive' and explanatory variables relevant to the high- and middle-income country samples separately. The estimates indicate that as the Islamic banking share increases, the probability of individuals from high-income countries citing the cost of having an account as too expensive also increases whereas the effect on middle-income countries is the opposite. This finding indicates that financially excluded individuals in high-income countries find Islamic financial services too expensive but that individuals in middle-income countries do not. This conclusion is also supported by Uddin, Kabir and Mollah (2017), who find that the operating costs and the earning risks of Islamic banks in the GCC countries, which are high-income countries, are higher than those of conventional banks. These findings are opposite to those in other MENA countries,

perhaps owing to differences in the regulatory and governance mechanisms of Islamic banking across the countries.

In general, this result implies that the effect of Islamic banking share is greater in middle-income MENA countries than in high-income ones.

5.2.3 Understanding Saving Behavior

We perform our estimations to determine how the explanatory variables associate with these motivations. Table 5 presents the results of the estimations. The results show that being female decreases the likelihood of saving for the three motivations (for farm or business, for old age, and for education). This finding is similar to Zins and Weill's (2016) results. The finding also confirms gender discrimination in developing countries (Demirgüç-Kunt, Klapper, & Singer, 2013). As one's age increases, the probability of saving for old age increases and the probability of saving for farm or business decreases. Similar to the findings of Zins and Weill (2016), this study shows that poorer individuals are less likely to save for any of the three motivations. Higher educated individuals are more likely to save for those same three reasons.

In high-income countries, the probability of saving for the three motivations is greater than in middle-income countries. Increasing the share of Islamic banking increases the likelihood of saving in order to purchase a farm or business and go to school but decreases the probability of saving for old age.

With the increase of the Islamic banking share in MENA, individuals from high-income countries cite saving for old age more than individuals from middle-income countries do, but they are less pointed that they have save in order to purchase a farm or business and to complete their education.

Table 5: Determinants of saving motivation

	For farm or business	For old age	For education
Female	-0.054***	-0.040***	-0.042***
	(0.005)	(0.005)	(0.006)
Age	-0.001***	0.001***	0.000
	(0.000)	(0.000)	(0.000)
Age2	-0.000***	-0.000	-0.000***
	(0.000)	(0.000)	(0.000)
Income_poorest 20%	-0.054***	-0.082***	-0.082***
	(0.007)	(0.008)	(0.009)
Income_second 20%	-0.066***	-0.074***	-0.062***
	(0.007)	(0.008)	(0.009)
Income_third 20%	-0.046***	-0.059***	-0.046***
	(0.007)	(0.007)	(0.008)
Income_fourth 20%	-0.023***	-0.039***	-0.030***
	(0.006)	(0.007)	(0.008)
Complete education	0.026***	0.036***	0.019***
	(0.005)	(0.005)	(0.006)
High-income countries	0.090***	0.138***	0.126***
	(0.007)	(0.008)	(0.009)
Islamic banking size	0.083***	-0.182***	0.072***
	(0.008)	(0.017)	(0.011)
High-income* Islamic banking size	-0.103***	0.068***	-0.044*
	(0.019)	(0.025)	(0.024)
Observations	14087	14087	14087
Pseudo R^2	0.070	0.116	0.058
Log likelihood	-4099.317	-4667.189	-5356.372
Predicted probability (at mean values)	0.080	0.096	0.126

Note: source, Author's own calculations. Data obtained from World Bank 2014 Global Findex database. This table presents the probit estimation for the determinants of saving motivation for 14 MENA countries. In the first column, the explanatory variables are presented. The estimated marginal effect is reported. Standard errors are in parentheses. *** Denotes significance at the 1% level. ** Denotes significance at the 5% level. * Denotes significance at the 10% level.

Table 6 presents the results of our investigation as to whether the determinants of informal saving are different than determinants of formal saving. We compared these estimations with the estimations for formal saving, and the comparisons show that women are less likely to save in general (formally and informally). Age is associated with formal saving, and it has a nonlinear relationship with saving in general. Concerning income, being poorer decreases the probability of saving, either at a formal financial institution or at an informal one. Completing education is positively associated with informal saving. This result is explained by our earlier finding that better educated individuals are more associated with most of barriers to financial inclusion, so they choose to save informally.

High-income countries are less associated with informal saving and more associated with formal saving. This is consistent with the World Bank's (2013) findings, which show that even poor people in high-income countries are more likely to formally save than people in middle- and low-income countries.

Islamic banking share significantly increases the likelihood of informal saving and insignificantly decreases the probability of formal saving. According to Ben Naceur et al. (2015), the reason could be that regulations in some countries limit the ability of Islamic banking to develop products that meet needs of households and SMEs.

Finally, in terms of the effect of Islamic banking in the MENA region, individuals in high-income countries are more likely to save informally but are less likely to save formally than individuals in middle-income countries. The reason for this could be that individuals in high-income countries are more negatively associated with *Sharia*-compliant products for saving and find other alternatives more attractive. In other

words, rich people may want to get secure and guaranteed returns from their savings. They do not like risk-sharing in Islamic banking, so they may save their money in jewellery, such as gold, or as real estate. Arnold (2012) argues that residents in United Arab Emirates and Qatar are the most likely across GCC countries to use gold as a savings vehicle and to use property as an investment tool.

Table 6: Determinants of saving (Informal and Formal)

	Informal saving	Formal saving
Female	-0.035***	-0.050***
	(0.005)	(0.006)
Age	-0.000	0.001***
	(0.000)	(0.000)
Age2	-0.001***	-0.001***
	(0.000)	(0.000)
Income_poorest 20%	-0.106***	-0.096***
	(0.009)	(0.009)
Income_second 20%	-0.107***	-0.089***
	(0.009)	(0.009)
Income_third 20%	-0.082***	-0.064***
	(0.008)	(0.008)
Income_fourth 20%	-0.049***	-0.041***
	(0.007)	(0.008)
Complete education	0.019***	0.006
	(0.005)	(0.006)
High-income countries	-0.023**	0.290***
	(0.010)	(0.009)
Islamic banking size	0.084***	-0.009
	(0.010)	(0.013)
High-income* Islamic banking size	0.047*	-0.437***
	(0.026)	(0.026)
Observations	14087	14087
Pseudo R^2	0.041	0.135
Log likelihood	-5031.571	-5184.845
Predicted probability (at mean values)	0.114	0.126

Note: source, Author's own calculations. Data obtained from World Bank 2014 Global Findex database. This table presents the probit estimation for the determinants of informal saving 14 MENA countries. In the first column, the explanatory variables are presented. The estimated marginal effect is reported. Standard errors are in parentheses. *** Denotes significance at the 1% level. ** Denotes significance at the 5% level. * Denotes significance at the 10% level.

5.2.4 Determinants of Credit Behavior

The survey includes four motivations for asking for credit: to complete education, to purchase a farm or business, to buy a home or land and to obtain medical help. We performed the estimations for these motivations. Table 7 presents the results of the probit estimation.

The results show that females are less likely to borrow for any of the four motivations, partly because of the legal procedures in some MENA countries of MENA that present woman with difficulties in property ownership and also in financing (World Bank, 2013a). Age is negatively associated with borrowing for education; that is, as a person grows older, the likelihood of borrowing for education decreases. The poorest individuals are more likely to ask for a loan for education and for medical purposes, and they are less likely to ask for loan to purchase a home or land. This could be explained by the fact that the cost of a property loan is relatively high and that banks ask for fixed assets as collateral.

In addition, education is associated positively with borrowing for medical emergencies and for purchasing a farm or business. This finding is inconsistent with the findings of Zins and Weill (2016). Living in high-income countries increases the likelihood of borrowing for all purposes except for medical ones. Demirgüç-Kunt and Klapper (2013) argue that in developing countries, the most cited reasons for borrowing are for medical emergencies.

In high-income countries the most cited reason is to purchase a home. Islamic banking share associates positively with educational and medical motivations for borrowing and negatively with the motivation of purchasing a home or land.

The effect of Islamic banking share on the probability that individuals will borrow for education and to acquire a home or land is higher in middle-income countries, whereas in high-income countries, the likelihood to borrow for medical purposes is lower.

Table 7: Determinants of loan-taking motivation

	For education	For medical purposes	For farm or business	To purchase a home or land
Female	-0.013*** (0.004)	-0.013** (0.006)	-0.036*** (0.005)	-0.015*** (0.005)
Age	-0.000*** (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)
Age2	-0.000 (0.000)	-0.000*** (0.000)	-0.000** (0.000)	-0.001*** (0.000)
Income_poorest 20%	0.015** (0.006)	0.020** (0.009)	-0.012 (0.008)	-0.038*** (0.008)
Income_second 20%	0.013** (0.006)	0.004 (0.009)	-0.018** (0.008)	-0.025*** (0.008)
Income_third 20%	0.002 (0.006)	-0.003 (0.008)	-0.025*** (0.008)	-0.025*** (0.007)
Income_fourth 20%	0.006 (0.006)	0.004 (0.008)	-0.010 (0.007)	-0.004 (0.007)
Complete education	-0.005 (0.004)	0.031*** (0.006)	0.044*** (0.005)	-0.007 (0.005)
High-income countries	0.047*** (0.006)	-0.065*** (0.011)	0.100*** (0.008)	0.154*** (0.007)
Islamic banking size	0.064*** (0.007)	0.124*** (0.010)	-0.004 (0.011)	-0.067*** (0.013)
High-income* Islamic banking size	-0.114*** (0.017)	0.214*** (0.027)	0.054** (0.023)	-0.130*** (0.023)
Observations	14087	14087	13433	14087
Pseudo R^2	0.023	0.039	0.070	0.073
Log likelihood	-3179.350	-5248.879	-4258.298	-4485.623
Predicted probability (at mean values)	0.058	0.122	0.098	0.095

Note: source, Author's own calculations. Data obtained from World Bank 2014 Global Findex database. This table presents the probit estimation for the determinants of loan-taking motivation for 14 MENA countries. In the first column, the explanatory variables are presented. The estimated marginal effect is reported. Standard errors are in parentheses. *** Denotes significance at the 1% level. ** Denotes significance at the 5% level. * Denotes significance at the 10% level.

To better understand individuals' behavior concerning credit, it is also important to understand their sources of borrowing and from which sources individuals borrow from more. Three alternative sources of informal borrowing were taken from the survey: from a store, from family and friends and from another private lender. Then, a

comparison was made between formal borrowing and informal borrowing. The results are shown in table 8.

We found that women are not encouraged to borrow from any source, whether informal or formal, which could be due to the fact that men tend to dominate in MENA countries.

As age increases, the probability of borrowing from family and friends decreases, whereas borrowing from formal institutions increases by the same percentage (0, 1 percent). According to SEEP (2013), younger people find that taking a loan from their family or friends is cheaper than getting formal credit, especially before they have a job, as they do not have collateral to take out a formal loan. In addition, because they do not get frequent income, they will have problems if they cannot repay the loan. But as they grow older and find employment, formal borrowing becomes easier for them. Informal credit seems to be easier for poor people to access than formal credit.

Islamic banking share positively influences the likelihood of asking for credit from a store, a family member or friend, and informal borrowing sources in general (except borrowing from another private lender where the relationship is significantly negative), but it is negatively associated with formal credit. This increase in the probability of informal credit implies that individuals may find Islamic banking services unattractive or too expensive, as previously mentioned.

Table 8: Determinants of sources of borrowing

	A store	Family and friends	Another private lender	Informal credit	Formal credit
Female	-0.050***	0.007	-0.020***	-0.036***	-0.042***
	(0.007)	(0.007)	(0.005)	(0.008)	(0.006)
Age	0.000	-0.001***	-0.000	-0.000	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Age2	-0.000***	-0.000**	-0.000	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Income_poorest 20%	0.023**	0.068***	0.054***	0.082***	-0.014
	(0.011)	(0.010)	(0.008)	(0.013)	(0.009)
Income_second 20%	0.009	0.053***	0.045***	0.067***	-0.016*
	(0.011)	(0.010)	(0.008)	(0.013)	(0.009)
Income_third 20%	0.022**	0.034***	0.022***	0.046***	-0.006
	(0.010)	(0.010)	(0.008)	(0.012)	(0.009)
Income_fourth 20%	0.020**	0.028***	0.019**	0.049***	0.003
	(0.010)	(0.010)	(0.008)	(0.012)	(0.008)
Complete education	-0.005	0.023***	0.008	0.016*	-0.023***
	(0.007)	(0.007)	(0.005)	(0.008)	(0.006)
High-income countries	0.248***	-0.046***	-0.170***	0.108***	0.163***
	(0.011)	(0.012)	(0.012)	(0.014)	(0.008)
Islamic banking size	0.671***	0.218***	-0.176***	0.119***	-0.088***
	(0.042)	(0.012)	(0.015)	(0.016)	(0.015)
High-income* Islamic banking size	-1.137***	-0.435***	0.385***	-0.628***	0.075***
	(0.051)	(0.035)	(0.032)	(0.040)	(0.025)
Observations	13089	14087	14087	14087	14087
Pseudo R^2	0.052	0.064	0.042	0.019	0.093
Log likelihood	-6181.654	-6373.189	-5045.602	-9017.203	-5340.498
Predicted probability (at mean values)	0.233	0.173	0.111	0.356	0.126

Note: source, Author's own calculations. Data obtained from World Bank 2014 Global Findex database. This table presents the probit estimation for alternative sources of borrowing for 14 MENA countries. In the first column, the explanatory variables are presented. The estimated marginal effect is reported. Standard errors are in parentheses. *** Denotes significance at the 1% level. ** Denotes significance at the 5% level. * Denotes significance at the 10% level.

The effect of Islamic banking share on the probability that individuals in high-income countries use informal credit is 62.8 percent less than it is in middle-income countries, whereas the effect of Islamic banking share on the probability that individuals in high-income countries will use formal credit is 7.5 percent higher than it is in middle-income countries. Concerning borrowing from a store particularly, there is a wide difference between the two groups in the MENA region. We applied the estimations

concerning these borrowing sources for each group separately. The results show that an increase in Islamic banking share increases the likelihood to ask the store for credit by 63 percent in the middle-income sample, whereas in the high-income sample, it decreases the likelihood to ask the store for credit by 54 percent. Cultural differences, individual awareness and the variety of *Sharia*-compliant products are possible explanations for the difference between the two samples in the choice of borrowing sources. Given that, the most developed Islamic banking exists in the GCC countries (Ali, 2011).

Education is positively associated with borrowing only from family and friends as an informal source and is negatively associated with formal credit. This could be explained by the higher unemployment rates in the MENA region among individuals who have completed their tertiary education (Dimova et al., 2016). Thus, asking family and friends for a loan is easier for them.

Finally, compared to middle-income countries, being an individual in a high-income country increases their probability of using both informal and formal credit.

Chapter 6

CONCLUSIONS AND POLICY IMPLICATIONS

6.1 Concluding Remarks

In comparison with rest of the world, MENA countries in general do not have high financial inclusion. This holds true for the MENA middle-income country sample but does not hold true for the MENA higdemdh-income country sample, whose means are higher than the world average, concerning the three main indicators of financial inclusion (formal account, formal saving and formal borrowing).

In this study, we used a probit method to analyze the impact of individual characteristics, Islamic banking share and countries' economic development levels on financial inclusion by using a sample of 14 countries in the MENA region. Unlike previous studies, this paper incorporated Islamic banking share and development level into its financial inclusion analysis. The first variable was included because Islamic banking is significant in the MENA region and is expected to have a significant effect on financial inclusion. The second variable, developmental level, is intended to capture income level differences between MENA countries.

Our work has produced interesting results. First, we find that being male, wealthier, and older increases the probability of meeting financial inclusion indicators. Education is positively associated with having formal accounts in high-income MENA countries; however, the opposite association is found in middle-income ones. From a gender

perspective, this study finds explicit gender discrimination against women for all of the determinants of financial inclusion in the MENA region.

We find that, in general, Islamic banking share has a negative impact on financial inclusion due to the unattractiveness and high cost of *Sharia*-compliant products for individuals as well as customers' inadequate information about Islamic banks. Interestingly, the analysis indicates that the effect of Islamic banking on financial inclusion in middle-income countries is significantly stronger (better) than in high-income ones. This study also finds evidence that Islamic banking could contribute to better financial inclusion, especially for religious individuals who refuse to bank with *riba* (interest).

Second, regarding the barriers to financial inclusion, the analysis shows that being female is negatively associated with most barriers to financial inclusion, and completing education is linked to all of the barriers. As Islamic banking share increases, the probability that respondents will cite each reason for financial exclusion decreases; the only exception is lack of money. This finding favours Islamic banking. Third, females are less likely to have formal and informal saving as well as formal and informal credit, which indicates that women in the MENA region face gender discrimination. Older people have a tendency to use more formal saving and more formal credit. Poorer people are less likely to use both informal and formal saving but are more likely to use informal credit. Higher educated individuals are more likely to use informal saving and informal borrowing and are more sensitive to most barriers of financial inclusion. This finding is explained by the employment problem in MENA countries, where people who have completed tertiary education tend to be more unemployed than those who have not.

Individuals in high-income countries, in general, are more likely to use informal saving and to use informal and formal credit than those in middle-income ones. Islamic banking share increases the likelihood of using both informal saving and borrowing.

In this research, we tested a set of hypotheses. As for the first hypothesis, we do not reject H1—that is, gender, age, income and education level of individuals have an impact on financial inclusion in the MENA region—because we find that females as well as the young, the poor and the better educated have a negative impact on financial inclusion in the MENA region. As for H2—that is, the level of economic development has an impact on financial inclusion in the MENA region—we do not reject the hypothesis because we find that high-income countries have higher financial inclusion. Finally, we reject H3; that is, Islamic banking has a positive impact on financial inclusion in the MENA region, as the increase of the Islamic banking share decreases the likelihood of individuals, in general, to have a formal account and to ask for formal credit. But we find some evidence that the increase of the Islamic banking share helps individuals with a high degree of religious affiliation to be financially included without conflicting with their religious beliefs.

Fourth, concerning saving motivations, women and the poor are less associated with them. Older people are less associated with saving for a farm or a business but are more associated with saving for old age. Education and a country's degree of development are positively associated with all of motivations for saving. Islamic banking share is associated positively with saving in order to purchase a farm or business and to complete education, but it is negatively associated with saving for old age. Concerning the determinants for the motivations for taking out a loan, we find that women are negatively associated with all of the motivations, while these

determinants differ with other individual characteristics. Being poor increases the likelihood to borrow in order to complete education and to pay for medical procedures. People with a higher education borrow more for such reasons as medical emergencies and to acquire a farm or business.

Individuals from high-income countries are more likely to borrow to complete education, to buy a farm or business and to purchase a home or land; they are less likely to do so medical purposes. Islamic banking share positively associates with borrowing to complete education and to have a medical procedure.

Overall, individuals from middle-income countries, to some extent, use less formal financial services compared to people in the world. This may have negative implications for income growth and poverty alleviation, but the situation of financial inclusion in high-income countries is, in general, better. There is evidence that Islamic banking could lead to better financial inclusion, especially for religious individuals who refuse to bank with *riba* (interest). Islamic banking's effect is better in middle-income countries than in high-income ones. Moreover, there is explicit gender discrimination against women concerning all the determinants of financial inclusion in the MENA region.

6.2 Policy Implications

The findings of this study have several important implications. First, policymakers must consider specific measures that can improve financial literacy and develop financial services and programmes that target women, youth and individuals with limited income. In addition, developing financial empowerment strategies for women can help in increasing the number of financially included women. Second,

governments should support Islamic banks to help mitigate their challenges and the cost of access to finance for their customers. Third, Islamic banking institutions could play a greater role in promoting financial inclusion in the MENA region by bridging the gap between the financial products demanded by customers and what Islamic banks actually offer. This can be achieved by ensuring that the ethics of Islam are reflected through Islamic banks' services and the employees who provide these services. Such banks should also increase customers' awareness and trust of *Sharia*-compliant products and should offer ethical services through good marketing and by enforcing the *Sharia* board's role in banks. Enhancing the efficiency of collecting and processing information, especially in high-income countries where individuals face many document requirements to open a formal banking account, can decrease costs. Fourth, a legal infrastructure depending on the requirements and statutes of each country should be developed to enable financial intermediaries to introduce customised financial programmes and *Sharia*-compliant services within MENA countries. Finally, improving technological services could decrease costs, increase access and expand financial inclusion for both conventional and Islamic banking in the MENA region.

Further research on financial inclusion in the MENA region could be carried out by using World Bank's 2017 Findex database. A comparison could be made between the 2014 and 2017 datasets to see to what extent financial inclusion has changed in the region. In addition, the updated study could check whether the change is in the direction of achieving World Bank's global development agenda, which intends to achieve universal financial access by 2020.

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APPENDIX

Degree of Financial Inclusion in Palestine in Comparison with MENA

1 Overview

Palestine is a unique case because it is in a politically conflicted area without stability. Its land is divided and separated, and there are continued security and access problems between cities and regions (World Bank, 2011). This creates a great challenge for the Palestinian authorities in expanding services to all Palestinian individuals across regions. In addition, the political problems, wars, and the years of intifada 1 and intifada 2, have negatively affected all aspects of the daily lives of Palestinians and the development of the country's sectors, resulting in low economic growth (World Bank, 2017). Hence, in this part, we aim to assess the consequences of the political problems on individuals' financial access to finance and overall degree of financial inclusion in Palestine.

Empirical works in this area have increased since the World Bank made its data available to scholars. There has been much empirical work analyzing cross-country databases in which the financial inclusion's impact of on development outcomes are determined. Hence, the empirical evidence is expected to help policy makers develop a road map that can help expand financial inclusion given that this appendix is related to our thesis of MENA region. To the best of our knowledge, there is no study that has analyzed the status of financial inclusion in Palestine, a politically conflicted and developing economy, compared to MENA region economies. Palestine, which is a part of the MENA region, has a total population of 4.81 million. Because of the conflict in the region, the community is only able to produce a GDP of $12.6 billion, and it suffers from high unemployment, up to 28.4 percent (PCBS, 2016a; PCBS, 2016b). The

banking sector has total assets of $12.6 billion, where total deposits are $10.5 billion, and the direct credit facilities portfolio is $5.8 billion. There are seven local and nine foreign-licensed banks, of which only two are Islamic banks. Palestine has a multicurrency financial sector, where mainly the U.S. dollar, the Jordanian dinar, and Israeli Shekel are used. Interest rate spreads are high with deposit rates, ranging between 1–2.5 percent (highest being for the dinar) and credit rates between 6.5–10.2 percent (PMA, 2015).

Starting in 2010, the Palestinian Monetary Authority (PMA) launched a number of campaigns and actions that focused on financial literacy and revealed its awareness of financial inclusion. The PMA become a member in AFI, and it became an active member in the same year. Now, Palestine is also a member of International Monetary Fund (IMF) and OECD[11].

Given the recent developments and the contribution of financial inclusion to poverty alleviation, the aim of the present appendix is to benefit from the World Bank's Global Findex database to make an assessment on the level of the financial inclusion for Palestine. The findings will be compared to other economies in the MENA region. This will help determine where Palestine stands relative to others in the same region.

2 Comparison between Palestine and other MENA countries

2.1 Main Indicators of Financial Inclusion

As an initial step to measure financial inclusion, we utilize the main financial indicators that have been used by (Fungáčová and Weill 2015) and (Demirgüç- Kunt,

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[11] This information was obtained by an interview with PMA.

and Klapper 2013): the ownership of formal account, having formal savings and obtaining formal credit. Table A.1 shows the main descriptive statistics for the three indicators (financial accounts, financial borrowings, and financial savings) of Palestine relative to other MENA countries.

Table A.1: Main indicators for financial inclusion

	Formal account			Formal savings			Formal credit		
	obs.	Mean	Std. dev.	obs.	Mean	Std. dev.	obs.	Mean	Std. dev.
High- Income countries									
	obs.	Mean	Std. dev.	obs.	Mean	Std. dev.	obs.	Mean	Std. dev.
Bahrain	1005	0.853	0.355	1005	0.342	0.475	1005	0.241	0.428
Israel	1000	0.932	0.252	1000	0.548	0.498	1000	0.409	0.492
Kuwait	1013	0.772	0.420	1013	0.285	0.452	1013	0.147	0.354
Saudi Arabia	1018	0.725	0.447	1018	0.201	0.401	1018	0.133	0.339
UAE	1002	0.839	0.367	1002	0.332	0.471	1002	0.157	0.364
Middle- Income countries									
Algeria	1002	0.531	0.499	1002	0.159	0.366	1002	0.026	0.159
Egypt	1000	0.198	0.399	1000	0.053	0.224	1000	0.066	0.248
Iraq	1007	0.128	0.334	1007	0.049	0.215	1007	0.051	0.219
Jordan	1000	0.309	0.462	1000	0.047	0.212	1000	0.169	0.375
Lebanon	1000	0.537	0.499	1000	0.229	0.420	1000	0.172	0.378
Mauritania	1000	0.299	0.458	1000	0.146	0.353	1000	0.092	0.289
Palestine	1000	0.322	0.468	1000	0.077	0.267	1000	0.062	0.241
Sudan	1000	0.230	0.421	1000	0.116	0.320	1000	0.057	0.232
Tunisia	1056	0.293	0.455	1056	0.109	0.312	1056	0.084	0.278
Yemen	1000	0.097	0.296	1000	0.016	0.126	1000	0.008	0.089

Note: Source, Author's own calculations. Data obtained from World Bank 2014 Global Findex database.

A financial account is the main and most traditionally accepted key to financial inclusion; that is, opening an account is the first step to borrow from financial institutions. Among the sample countries, the three countries with the highest percentage of owning formal accounts are high-income countries; Israel, Bahrain, and the UAE with 93.2 percent, 85.3 percent, and 83.9 percent, respectively. As for Palestine, the rate is low. Only 32 percent of Palestinian individuals aged fifteen or older own formal account. This figure makes Palestine rank eighth in the middle of the MENA countries. However, Palestine's ranking worsens relative to the world, where the average of owning a formal account is 61.5 percent.

Concerning formal savings, of high-income countries; Israel, Bahrain, and the UAE, with 54.8 percent, 34.2 percent, and 33.2 percent, respectively, are the countries who rank the highest. However, the saving percentage for Palestine is only at 8 percent, being among the lowest five countries within MENA. This is again lower than the average of the world, which is 27.4 percent. The third dimension of financial inclusion is the percentage of individuals who have obtained credit from formal financial institution; here, the number is 6 percent for Palestine. This puts Palestine among the lowest six MENA countries. And it is lower than the average of the world, which is 10.7 percent.

Overall, the analysis of the financial inclusion for Palestine relative to MENA shows that Palestine stands in the middle relative to other MENA countries in terms of having formal accounts and falls among the lowest five countries in terms of formal savings accounts and lowest six countries in term of formal credit.

2.2 Motives for Financial Exclusion

The Global Findex survey explains the reasons why individuals could be financially excluded (financial inclusion's barriers). Barriers such as; inadequate money, religion, owning an account by one of the family's members, are considered voluntary exclusion. To be able to undertake correct policies with the objective of minimizing barriers for financial inclusion, voluntary exclusion should be differentiated from involuntary exclusions (Allen *et al.*, 2016).

The different reasons for financial exclusion are presented in Table A.2, where 74 percent of individuals without a bank account in Palestine do not have a bank account because of a "lack of money". At the same time, 41.5 percent replied with "no need for financial services", 36.7 percent replied with "cannot get an account", 22 percent replied with "a member of family has one", 19 percent noted the cost of documentation (too expensive), 17.7 percent gave the "religious reasons", 10 percent said it was for "lack of trust", 9 percent states it was because of the lack of documentation requirements, and 5 percent found banks were "too far away". The findings indicate that most of the motives for financial exclusion are voluntary exclusions.

Comparing the answers given by individuals without a bank account in Palestine and other MENA countries, almost all of them cite the lack of money's reason firstly (except for Bahrain, the UAE, and Israel) who gave "a family member has one", and Algeria who gave "No need for financial as the first reason" and "lack of money" as the second. Results are consistent with findings of (Demirgüç -Kunt & Klapper, 2013) which show that the most frequently given reasons in the world are "a lack of money", "family member has one", and "too expensive". This indicates that most individuals' incomes in MENA (except for Bahrain, the UAE, and Israel and Algeria) are very

limited and can only meet their present consumption needs, which does not allow them to save for future consumption or for other purposes.

2.3 Alternative sources of borrowing

"An inclusive financial system can help reduce the growth of informal sources of credit which are often found to be exploitative" (Sarma, 2008, p 1). Borrowers in an informal financial system suffer from a high level of risk, in addition to costly interest rates. Table A.3. Shows the main alternative borrowing sources. A comparison among these sources shows that Palestinians borrow mostly from their family, up to 26 percent. This is also the case across MENA countries, where the highest percentage of borrowing is from family (except for Lebanon and Israel). Half of MENA countries had a second choice of borrowing from a store while the other half (Bahrain, Jordan, Sudan, UAE, Israel, and Mauritania) had from a formal institution.

In a comparison of individuals who use formal borrowing among MENA countries, Israel has the highest percentage (40 percent). The percentage for Palestinian individuals is among the lowest five of MENA at 6 percent. This shows how difficult it is for the individuals in Palestine to have formal access to finances to fund their businesses and family activities. In Palestine, the most important source of borrowing is family and friends. The second is a store, and the least important one is a formal institution. This finding is consistent with the findings of (Demirgüç -Kunt and Klapper, 2013), who show that those in lower income countries are more likely obtain credit from family and friends. This can be explained by the conflict and wars experienced by Palestinians, which has created instability for the political and economic circumstances in Palestine, leading individuals to strive by cooperating among themselves, especially utilizing family, friends, and stores owned by neighbors to generate the financial means with which to have access to finance.

In this section of the study, we have analyzed in details the degree of financial inclusion in Palestine and compared its status with other MENA countries. The analysis of the data clearly shows that the level of financial inclusion in Palestine is very low and ranks as one of the lowest among MENA countries and nearly of middle of middle- income countries. These findings should have significant negative implications on both the social and economic lives of Palestinians. As it has empirically been proven in many studies, in economies, where there is no proper means for accessing finance, economic development is difficult, and the well-being of individuals is under threat (King & Levine, 1993; Demetriades & Hussein, 1996).

3 Conclusion

The attention to financial inclusion has increased in recent years because it has a direct link to poverty reduction and economic growth. In this part, we analyse the status of financial inclusion status for Palestine relative to the MENA region in general. We find that 32 percent of Palestinian individuals have a formal account, 8 percent use formal saving, and only 6 percent use formal credit. This puts Palestine in the middle when it comes to formal accounts' ownership and among the lowest six countries when it comes to using formal saving and credit compared to other MENA economies.

The analysis on the Findex database also shows that a lack of money is the main financial inclusion's barrier in all MENA countries (except for Bahrain, the UAE, and Israel). The second most given response for being financially excluded is because one of the family's members has an account. The main source of borrowing for Palestine and most MENA countries is borrowing from family. This is followed by borrowing from the store; borrowing from formal institutions in Palestine comes in last place. This clearly indicates that Palestinians do not use banks or other financial credit institutions as their main borrowing source. Our findings also reveal that if a family

member has a bank account, this gives an important reason for a Palestinian female, and for poor individuals, to not have a bank account.

Political problems, wars, intifada1, and intifada 2 all have negative effects on individuals' movements, individuals' behavior (Male dominance, way of living, borrowing choices, and uncertainty about future), investments, employment, and income levels in Palestine. These facts have had significant negative impacts on the level of financial inclusion in Palestine.

Overall, Palestinian individuals, use less formal financial services compared to other MENA countries. This may have negative implications on income growth and poverty reduction. On one hand, a lack of political and economic stability in the region makes individuals reluctant to borrow and establish their own businesses or even spend for household needs. On the other hand, because of low economic activity caused by the political conflict, individuals do not find it necessary to be financially included. All these have negative implications on the development and well-being of Palestinians. We believe that our results can help policy makers develop measures for enhancing financial inclusion.

In addition, implementing financial inclusion needs cooperation among all sectors, including private and public, governmental, educational, and supervisory institutions to develop proper policies that would support poor, women, and marginalized groups of populations in Palestine.

Table A.2: Barriers to financial inclusion

	too far			too expensive			lack of documentation			lack of trust		
	obs.	Mean	std. dev	obs.	Mean	std. dev	obs.	Mean	std. dev	obs.	Mean	std. dev
High- Income countries												
Bahrain	164	0.104	0.306	164	0.159	0.366	164	0.213	0.411	164	0.091	0.289
Israel	85	0.071	0.258	85	0.188	0.393	85	0.247	0.434	85	0.129	0.338
Kuwait	249	0.100	0.301	249	0.201	0.401	249	0.185	0.389	249	0.169	0.375
Saudi Arabia	318	0.138	0.346	318	0.230	0.421	318	0.248	0.433	318	0.132	0.339
UAE	200	0.130	0.337	200	0.230	0.422	200	0.210	0.408	200	0.100	0.301
Middle- Income countries												
Algeria	481	0.029	0.168	481	0.071	0.257	481	0.129	0.335	481	0.079	0.270
Egypt	813	0.134	0.341	813	0.246	0.431	813	0.143	0.350	813	0.122	0.327
Iraq	890	0.199	0.399	890	0.472	0.499	890	0.245	0.430	890	0.252	0.434
Jordan	694	0.020	0.141	694	0.024	0.155	694	0.032	0.175	694	0.010	0.100
Lebanon	477	0.010	0.102	477	0.086	0.281	477	0.023	0.150	477	0.071	0.258
Mauritania	760	0.218	0.413	760	0.230	0.421	760	0.222	0.416	760	0.118	0.323
Palestine	711	0.049	0.216	711	0.190	0.392	711	0.090	0.286	711	0.104	0.306
Sudan	781	0.125	0.331	781	0.077	0.266	781	0.079	0.271	781	0.137	0.344
Tunisia	778	0.067	0.250	778	0.087	0.283	778	0.078	0.269	778	0.058	0.234
Yemen	916	0.133	0.340	916	0.083	0.276	916	0.098	0.298	916	0.099	0.299

Table A.2 (continued)

	lack of money			religious reason			Family member has an account			Cannot get an account			No need for financial services		
	obs.	Mean	std. dev	obs.	Mean	std. dev	obs.	Mean	std. dev	obs.	Mean	std.dev	obs.	Mean	std.dev
High- Income countries															
Bahrain	164	0.530	0.501	164	0.043	0.203	164	0.671	0.471	164	0.421	0.495	164	0.463	0.500
Israel	85	0.400	0.493	85	0.071	0.258	85	0.482	0.503	85	0.271	0.447	85	0.471	0.502
Kuwait	249	0.554	0.498	249	0.116	0.321	249	0.482	0.501	249	0.466	0.500	249	0.394	0.490
Saudi Arabia	318	0.563	0.497	318	0.110	0.313	318	0.491	0.501	318	0.415	0.494	318	0.374	0.485
UAE	200	0.505	0.501	200	0.140	0.348	200	0.660	0.475	200	0.375	0.485	200	0.480	0.501
Middle- Income countries															
Algeria	481	0.318	0.466	481	0.131	0.338	481	0.227	0.419	481	0.112	0.316	481	0.385	0.487
Egypt	813	0.759	0.428	813	0.146	0.354	813	0.108	0.311	813	0.422	0.494	813	0.231	0.422
Iraq	890	0.761	0.427	890	0.197	0.398	890	0.135	0.342	890	0.527	0.500	890	0.324	0.468
Jordan	694	0.810	0.393	694	0.081	0.273	694	0.244	0.430	694	0.187	0.390	694	0.153	0.360
Lebanon	477	0.637	0.481	477	0.029	0.169	477	0.277	0.448	477	0.308	0.462	477	0.306	0.461
Mauritania	760	0.488	0.500	760	0.157	0.364	760	0.117	0.322	760	0.218	0.413	760	0.183	0.387
Palestine	711	0.744	0.437	711	0.177	0.382	711	0.222	0.416	711	0.367	0.482	711	0.415	0.493
Sudan	781	0.652	0.477	781	0.035	0.183	781	0.101	0.302	781	0.164	0.370	781	0.161	0.368
Tunisia	778	0.447	0.498	778	0.077	0.267	778	0.055	0.229	778	0.271	0.445	778	0.368	0.482
Yemen	916	0.881	0.324	916	0.104	0.305	916	0.038	0.192	916	0.299	0.458	916	0.116	0.320

Source: Author's own calculations. Data obtained from World Bank 2014 Global Findex database

Table A.3: Alternative sources of borrowing

	A store			Family			Another private lender			Formal financial institution		
	obs.	Mean	std. dev	obs.	Mean	std. dev	obs.	Mean	std. dev	obs.	Mean	std. dev
High-Income countries												
Bahrain	1005	0.216	0.412	1005	0.353	0.478	1005	0.147	0.355	1005	0.241	0.428
Israel	1000	0.457	0.498	1000	0.165	0.371	1000	0.013	0.113	1000	0.409	0.492
Kuwait	1013	0.167	0.373	1013	0.296	0.457	1013	0.117	0.322	1013	0.147	0.354
Saudi Arabia	1018	0.140	0.348	1018	0.349	0.477	1018	0.174	0.379	1018	0.133	0.339
UAE	1002	0.145	0.352	1002	0.255	0.436	1002	0.052	0.222	1002	0.157	0.364
Middle- Income countries												
Algeria	1002	0.031	0.173	1002	0.131	0.337	1002	0.014	0.117	1002	0.026	0.159
Egypt	1000	0.104	0.305	1000	0.220	0.414	1000	0.023	0.150	1000	0.066	0.248
Iraq	1007	0.335	0.472	1007	0.490	0.500	1007	0.197	0.398	1007	0.051	0.219
Jordan	1000	0.049	0.216	1000	0.188	0.391	1000	0.011	0.104	1000	0.169	0.375
Lebanon	1000	0.132	0.339	1000	0.118	0.323	1000	0.044	0.205	1000	0.172	0.378
Mauritania	1000	0.049	0.216	1000	0.280	0.449	1000	0.044	0.205	1000	0.092	0.289
Palestine	1000	0.251	0.434	1000	0.256	0.437	1000	0.091	0.288	1000	0.062	0.241
Sudan	n.a	n.a	n.a	1000	0.414	0.493	1000	0.020	0.140	1000	0.057	0.232
Tunisia	1056	0.112	0.315	1056	0.156	0.363	1056	0.031	0.174	1056	0.084	0.278
Yemen	1000	0.385	0.487	1000	0.529	0.499	1000	0.150	0.357	1000	0.008	0.089

Source: Author's own calculations. Data obtained from World Bank 2014 Global Findex database