

WHAT IS HOLDING BACK YOUTH FINANCIAL INCLUSION IN MENA COUNTRIES?

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ABSTRACT

In Middle East and North Africa (MENA) countries, almost one quarter of the population is aged 15-29. At the same time, youth unemployment is among the highest worldwide, while female labour force participation remains among the lowest. MENA Youth suffer from lack of financial inclusion in terms of account holding and the use of financial services, both traditional and digital (fintech). This paper aims to address the following research question: What is holding back youth financial inclusion in MENA countries? It investigates the causes of financial exclusion and examines whether financial inclusion patterns are similar or distinct, according to age, gender and workforce, both prior and during the COVID-19 pandemic?

The determinants of financial inclusion, including age, gender and workforce are analysed, using a representative sample from five countries out of the eight South Mediterranean countries (SMCs) belonging to Euro Med region: Egypt, Jordan, Lebanon, Palestine and Tunisia. Morocco was excluded due to biased oversampling and Israel was omitted because its classification among high income countries would lead to additional bias. Four pooled samples are drawn from the Global Findex Database (2011, 2014, 2017 and 2021), covering a decade from 2011 to 2021. A series of probit regressions is used to test four hypotheses regarding the relationship between age, gender and financial inclusion, as well as drivers of financial exclusion on both the demand side (endogenous self-selection) and the supply side (exogenous discrimination).

Four main results are noteworthy:

- There is an age gap prior the pandemic, in terms of account holding and the use of traditional financial services, while fintech use increased during the pandemic.
- The gender gap in financial inclusion widened during the pandemic. Although fintech use improves with age among young women, they remain overall less financially included.
- Endogenous factors (self-selection) predominate over exogenous factors (discrimination) fuelling financial exclusion.
- Being part of the workforce is conducive to financial inclusion.

Policy efforts should build on existing achievements by combining demand- and supply-side measures, including disaggregated data collection, digital and financial literacy programmes, inclusive regulatory frameworks, and youth- and gender-tailored financial services. This should go hand in hand with reducing structural barriers such as documentation costs and limited access points. Financial inclusion alone is not sufficient and must be complemented by inclusive labour-market policies and stable income which remains a key driver of participation in formal financial systems.

Keywords: Financial inclusion, Fintech, Gender, MENA countries, Probit regressions, Workforce, Youth.

RÉSUMÉ

Dans les pays du Moyen-Orient et d'Afrique du Nord (MENA), près d'un quart de la population est âgé de 15 à 29 ans. Parallèlement, le chômage des jeunes figure parmi les plus élevés au monde, tandis que la participation des femmes au marché du travail demeure parmi les plus faibles. Les jeunes de la région MENA souffrent également d'un manque d'inclusion financière, tant en matière de détention de comptes que d'utilisation des services financiers, qu'ils soient traditionnels ou numériques (fintech). Cet article vise à répondre à la question de recherche suivante : quels sont les facteurs qui freinent l'inclusion financière des jeunes dans les pays MENA ? Il examine les causes de l'exclusion financière et analyse si les tendances en matière d'inclusion financière sont similaires ou distinctes selon l'âge, le genre et la participation au marché du travail, avant et pendant la pandémie de COVID-19.

Les déterminants de l'inclusion financière, notamment l'âge, le genre et la participation au marché du travail, sont analysés à partir d'un échantillon représentatif de cinq pays parmi les huit pays du Sud de la Méditerranée appartenant à la région euro-méditerranéenne : l'Égypte, la Jordanie, le Liban, la Palestine et la Tunisie. Le Maroc a été exclu en raison d'un suréchantillonnage biaisé, et Israël a été omis car sa classification parmi les pays à revenu élevé aurait entraîné un biais supplémentaire. Quatre échantillons regroupés sont extraits de la base de données Global Findex (2011, 2014, 2017 et 2021), couvrant une période de dix ans, de 2011 à 2021. Une série de régressions probit est utilisée pour tester quatre hypothèses concernant la relation entre l'âge, le genre et l'inclusion financière, ainsi que les facteurs de l'exclusion financière, tant du côté de la demande (auto-sélection endogène) que du côté de l'offre (discrimination exogène).

Quatre principaux résultats ressortent :

- Il existe un écart lié à l'âge avant la pandémie en matière de détention de comptes et d'utilisation des services financiers traditionnels, tandis que l'utilisation des fintech a augmenté pendant la pandémie.
- L'écart entre les sexes en matière d'inclusion financière s'est creusé pendant la pandémie. Bien que l'utilisation des fintech augmente avec l'âge chez les jeunes femmes, elles restent globalement moins incluses financièrement.
- Les facteurs endogènes (auto-sélection) prédominent sur les facteurs exogènes (discrimination) dans l'alimentation de l'exclusion financière.
- La participation au marché du travail favorise l'inclusion financière.

Les politiques publiques devraient s'appuyer sur les acquis existants en combinant des mesures du côté de la demande et de l'offre, notamment la collecte de données désagrégées, des programmes d'éducation financière et numérique, des cadres réglementaires inclusifs et des services financiers adaptés aux jeunes et au genre. Ces efforts devraient aller de pair avec la réduction des obstacles structurels, tels que les coûts liés à la documentation et le nombre limité de points d'accès. L'inclusion financière seule n'est pas suffisante et doit être complétée par des politiques du marché du travail inclusives et par des revenus stables, qui demeurent un facteur clé de participation aux systèmes financiers formels.

Mots-clés : inclusion financière, fintech, genre, pays MENA, régressions probit, population active, jeunesse.

الملخص

يشكّل الشباب الذين تتراوح أعمارهم بين 15 و29 عامًا ما (MENA) ي بلدان الشرق الأوسط وشمال إفريقيا يقارب ربع السكان. وفي الوقت نفسه، يُعدّ معدل بطالة الشباب من بين الأعلى عالميًا، بينما تظل مشاركة النساء في سوق العمل من بين الأدنى. كما يعاني شباب منطقة الشرق الأوسط وشمال إفريقيا من ضعف الشمول التكنولوجي (المالي، سواء من حيث امتلاك الحسابات أو استخدام الخدمات المالية، التقليدية منها والرقمية تهدف هذه الورقة إلى الإجابة عن السؤال البحثي التالي: ما العوامل التي تعيق الشمول (Fintech - المالية المالي للشباب في بلدان الشرق الأوسط وشمال إفريقيا؟ كما تبحث في أسباب الإقصاء المالي، وتدرس ما إذا كانت أنماط الشمول المالي متشابهة أو مختلفة وفقًا للعمر والجنس والمشاركة في سوق العمل، سواء قبل جائحة كوفيد-19 أو خلالها

تم تحليل محددات الشمول المالي، بما في ذلك العمر والجنس والمشاركة في سوق العمل، باستخدام عينة ممثلة من خمسة بلدان من أصل ثمانية بلدان في جنوب المتوسط تنتمي إلى المنطقة الأورو-متوسطية، وهي: مصر والأردن ولبنان وفلسطين وتونس. وقد تم استبعاد المغرب بسبب الإفراط في أخذ عينات متحيزة، كما تم استبعاد إسرائيل لأن تصنيفها ضمن البلدان ذات الدخل المرتفع كان سيؤدي إلى تحيز إضافي. وتم استخدام أربع عينات مجمعة من قاعدة بيانات Global Findex (2011 و2014 و2017 و2021)، تغطي فترة زمنية تمتد لعشر سنوات من 2011 إلى 2021. وتم استخدام سلسلة من نماذج الانحدار البروبيتي (Probit) لاختبار أربع فرضيات تتعلق بالعلاقة بين العمر والجنس والشمول المالي، إضافة إلى العوامل المؤدية إلى الإقصاء المالي من جانب الطلب (الاختيار الذاتي الداخلي) ومن جانب العرض (التمييز الخارجي).

وتبرز أربع نتائج رئيسية:

توجد فجوة عمرية قبل الجائحة فيما يتعلق بامتلاك الحسابات واستخدام الخدمات المالية التقليدية، بينما ازداد استخدام التكنولوجيا المالية خلال الجائحة اتسعت الفجوة بين الجنسين في الشمول المالي خلال الجائحة. ورغم أن استخدام التكنولوجيا المالية يتحسن مع التقدم في العمر لدى الشباب، فإنهم يظلون عمومًا أقل اندماجًا ماليًا تهيمن العوامل الداخلية (الاختيار الذاتي) على العوامل الخارجية (التمييز) في تفسير الإقصاء المالي تسهم المشاركة في سوق العمل في تعزيز الشمول المالي

ينبغي أن تستند الجهود السياسية إلى الإنجازات القائمة من خلال الجمع بين التدابير المتعلقة بجانب الطلب والعرض، بما في ذلك جمع البيانات المصنفة، وبرامج التثقيف المالي والرقمي، والأطر التنظيمية الشاملة، والخدمات المالية المصممة خصيصًا للشباب ومراعية للنوع الاجتماعي. وينبغي أن يترافق ذلك مع الحد من العوائق الهيكلية، مثل تكاليف الوثائق الرسمية ومحدودية نقاط الوصول إلى الخدمات. كما أن الشمول المالي وحده غير كافٍ، بل يجب أن يُستكمل بسياسات شاملة لسوق العمل وتوفير دخل مستقر، إذ يظل ذلك عاملًا أساسيًا للمشاركة في الأنظمة المالية الرسمية

الكلمات المفتاحية: الشمول المالي، التكنولوجيا المالية، النوع الاجتماعي، بلدان الشرق الأوسط وشمال إفريقيا، نماذج الانحدار البروبيتي، القوى العاملة، الشباب

INTRODUCTION

One major issue of youth empowerment in a monetary economy is financial inclusion. Addressing youth empowerment regarding financial inclusion requires a set of criteria. First of all, age matters, and the focus is on young adults (15-34 years old). Youth is a diverse category split into three segments. (1) Individuals who are out of the labour force because they are studying and (2) those who are not in employment (i.e., belonging to the labour force), education or training (NEET), are little concerned with financial inclusion in as much as they do not earn any income. (3) The last segment includes those who participate in the labour force, being employees and self-employed. With regard to the MENA countries, Selwaness (2023) reports that youths aged 15-24 who were NEETs in 2020 accounted on average for 35% in Jordan and Palestine down to 28% in Egypt, with Tunisia (26%) and Lebanon (25%) standing in between. Youth unemployment records the highest rate worldwide in MENA countries, such as Jordan (40%) and Tunisia (37%) in 2021 according to ILOSTAT (ILO).

In the second place, gender matters. NEET rates among young women are higher than for their male counterparts due to their weak labour force participation, three times lower than that of men, and to their unemployment rate, almost twice higher than that of male's rate (ILO 2024). Last, workforce status matters and we emphasize the case for young workers of segment (iii), who earn an income. Noteworthy is that the share of informal employment in total employment including agriculture amounts to half in Jordan to two thirds in Egypt (ILOSTAT 2024). The share is higher for youth. In some MENA countries, such as Palestine, Egypt and Tunisia, four out of five workers aged 15-29 were in informal jobs (ILO 2023). Financial inclusion is key to sustaining decent jobs for both employees and self-employed youths (Adair Ed. 2023). It is often first defined as holding an account at a formal financial institution (i.e., bank). Account ownership differs by age group and gender across MENA developing economies (Demirgüç-Kunt et al. 2022).

Although the COVID-19 pandemic has significantly fostered the use of digital payments (Payroll payments, government transfers or domestic remittances), catalysing the use of other financial services (Savings, loans, etc.), youth labour force and females hold lower account ownership rates on average (Global Findex 2021). Three main reasons explain their financial exclusion (Sykes et al 2016): (i) Political and regulatory barriers that set the minimum age and proof of identity requirements for opening accounts; (ii) The many services offered by financial service providers that are not suitable or attractive to youths and females; and (iii) the limited financial capacity and experience of females and youths themselves. Hence, it is important to detect the patterns of people in MENA countries who are less financially included, in order for policy-makers to implement a comprehensive post-COVID strategy that promotes access to tailored financial services within an appropriate regulatory framework.

Our research question is threefold as follows: Is there an age gap with regard to financial inclusion affecting youths in MENA countries? Is there a gender gap with respect to financial inclusion affecting (young) women in particular? What are the main factors, endogenous vs exogenous, holding back financial inclusion for youths and for females. We analyse the impact of age, gender and workforce of MENA people prior and during the Covid-19 pandemic on each dimension of financial inclusion, account holding and use of both traditional and digital services. We draw four pooled samples from the Global Findex Database as of 2011, 2014, 2017 and 2021 for five MENA countries (Egypt, Jordan, Lebanon, Tunisia and Palestine).

According to the Global Findex 2021, stylised facts for financial inclusion with respect to age and gender issues in the MENA region are stark. They depend both on the supply-side of financial institutions and the demand of households. Regarding the supply-side factors, infrastructure matters. The density of ATMs (Automated teller machines or cash distributor) has been rising on average throughout the period, although it is slowing down in 2021 (Figure A1). The density of bank branches uncovers a S-curve: on, average, it dropped in 2014 increased in 2017 and stalled in 2021 (Figure A2). With respect to demand-side factors, account ownership increased between 2014 and 2017, dropping down in 2021 (Figure A3). Mobile cellular subscriptions declined throughout the survey period (Figure A4).

The MENA region gathers the lowest proportion of adults holding a financial account: 48% of adults in the region, excluding high-income economies. Only 39% of adults who are not active in the labour force in MENA have an account, the lowest percentage worldwide. Conversely, 70% of people without an account are not active in the labour force, which is especially the case for women. Only 40% of adults reported having made or received a digital payment in the last year (2021). Gender gap regarding financial inclusion is substantial and challenges female economic empowerment. On the supply-side, gendered laws (Perrin & Hyland 2023) and conservative cultural norms discriminate females' ability to open bank accounts. On the demand-side, higher rates of financial illiteracy and unemployment among women drive self-selection towards account opening. Although the gender gap in account ownership narrowed from 17% in 2017 to below 13%, 42% of women in developing MENA economies hold a financial account compared to 54% of men, the highest gender gap across all regions. Only 35% of adults reported saving in the past year, about half of the MENA adults, especially women, rely on informal loans (friends and family) for emergency funding. To the best of our knowledge, no paper has addressed the topic of financial inclusion, with respect to gender and youth employment in these five MENA countries from a dynamic perspective, namely prior and during the pandemic. We test four hypotheses, among which two are related to age and gender (H_1 and H_2) according to workforce and two are addressing endogenous and exogenous factors of financial exclusion (H_3 and H_4) that were not tackled elsewhere and bring in original insights.

Most recent publications dedicated to MENA countries focus on the gender gap or/and income gap prior but not during the pandemic, whereas some include non-developing countries (Bahrain, Kuwait, Saudi Arabia and United Arab Emirates) and gauge financial inclusion only on account holding and use of traditional services. We provide measurement for the Fintech variable, which was not directly available in the Global Findex data base. Section 2 provides a substantial literature review, both theoretical and empirical, devoted to the determinants and measure of financial inclusion, especially in the MENA region. Section 3 presents the descriptive statistics regarding four samples pooling the five MENA countries over 2011-2021, hypotheses and methodology. Exogenous factors for financial inclusion are predominant over endogenous factors. Section 4 displays the estimates from probit regressions before and during the pandemic, addressing four hypotheses on both dimensions of financial inclusion, account holding and effective use of financial services (both traditional and digital), with respect to age, gender and workforce. Section 5 checks the robustness of estimation results upon youth and female sub-samples. Section 6 is dedicated to the conclusion and policy implications.

LITERATURE REVIEW

The expansion of the financial inclusion topic has been nurtured by databases from the World Bank Global Findex and the International Monetary Fund, spurring several recent publications. We start first with macro analysis and empirical observations upon large samples, with regard to financial inclusion before focusing upon MENA countries.

FINANCIAL INCLUSION AND EMPOWERMENT

Ozili (2020) aims at bridging academic and policy purposes regarding financial inclusion. He defines financial inclusion as the ease of access to, and the availability of, basic financial services to all members of the population. He claims to be the first to present a catalogue of financial inclusion theories belonging to three broad categories from a conceptual perspective: (i) vulnerable beneficiaries (such as poor people, youth and women); (ii) delivery processes (community echelon, public service or special agent) and (iii) funding. Strangely enough Notably, he does not mention analytical concepts such as demand and supply or exogenous and endogenous impediments to financial inclusion.

Grohmann et al (2018) use various regressions -OLS and IV, upon a representative survey of more than 1,000 adults per country in 119 countries (including MENA countries) as of 2014. They demonstrate that financial literacy on the demand side exerts a positive influence on financial inclusion, independent from the positive influence of financial infrastructure on the supply side. Financial infrastructure and financial literacy are substitutes, with respect to access to finance, whereas literacy is key to the use of financial services.

Zimmerman (1995) grounds on psychology empowerment theory, as a qualitative approach emphasizing self-fulfilment that focuses on processes that promote participation, decision making and opportunities to learn and improve skills. With respect to economic and social empowerment regarding youths, it is related to human capital theory (Mincer 1974) whose issue is to manage human resources and secure income, in order to enhance inclusion.

FINANCIAL INCLUSION OF VULNERABLE GROUP IN MENA COUNTRIES: YOUTHS AND WOMEN

Shihadeh (2022) provides a descriptive study upon a sample of 1,000 Palestinian people drawn from the 2014 Global Findex survey. Unfortunately, methodology is not documented. The author finds that age has a positive influence on financial inclusion while being a female reduces inclusion, with regard to bank account holding and borrowing; the main reason for females is having less money. Cicchiello et al (2021) and Kazemikhasragh et al (2022) investigate the 2017 Global Findex survey with probit models and confirm the existence of a gender gap in financial inclusion in MENA countries. The sample includes sixteen countries, two of which are not MENA countries (Afghanistan and Pakistan) and three oil-exporters are high income countries (Kuwait, Saudi Arabia and United Arab Emirates). Authors state that the gender gap as for financial inclusion is larger in low-income countries, an issue that is not tackled in the paper. Women are less likely to hold a bank or a mobile money account and use financial services (savings and loans) as compared to men. However, being a woman increases the probability of owning a credit card and saving semi-formally, through a savings club or a person outside the family. The main barriers to financial inclusion are the lack of money and documentation, high transaction costs and the distance to the bank, the fact that a family member already has an account and religious factors are the most relevant factors in explaining female financial exclusion. Older age, better education, and high-income increase men's probability to be financially included. Being younger, a woman, less educated and with low-income reduces the opportunity for financial inclusion.^[1]

Özşuca (2019) addresses the gender dimension of financial inclusion in MENA countries, with regard to account ownership and use of saving and borrowing financial services, with a Fairlie decomposition method upon the 2017 Global Findex Database. The contributing factors to the financial inclusion gap are employment, age and higher education and, to a lesser extent, upper income quintiles.

[1] The quintile income distribution extends from Q1 poorest 20% (bottom quintile) up to Q5 richest 20% (top quintile). The middle income stands between Q2 and Q4 quintiles. Low income includes Q1 and Q2 quintiles, whereas high income includes Q4 and Q5 quintiles.

Özşuca (2024) examines the contributing factors explaining variation in access to digital finance between men and women across different age groups upon a sample of 79 developing countries including six MENA countries. He finds that the working age population experiences the largest gap. The main part of the gap is attributable to employment while secondary education and income level are also significant. Noteworthy is that tertiary education helps closing the gap for young adults. Mabrouk et al (2023) use the Global Findex database for 2017 and 2021 to explore the connection between female economic empowerment (income) and digital financial inclusion. Distinction is made between High-Income Economies and Developing Economies before and during COVID-19, a time span during which female account holding increased. An ordered probit model and interactive variables show that the impact of age may have a non-linear relationship with income. Noteworthy is that Saudi context is distinct from other MENA countries and that the impact of fintech services differs before and during the pandemic.

Tripathi & Rajeev (2023) gauge the financial inclusion for women in 109 countries, including a few MENA countries with the Global Findex database for 2011, 2014, 2017, and 2021. They design two distinct indices, a digital financial service usage index and a conventional financial service usage index. Feasible Generalized Least Squares (FGLS) and instrumental variable panel data model show that health, education, labour force participation rate, and female political empowerment of women significantly affect the digital financial inclusion of women. Perrin & Hyland (2023) document the relationship between legal gender equality and the use of financial services, combining data from the Global Findex and WBL databases for 148 developed and developing economies. There is a significant and positive correlation between legal gender equality and women's access to financial services. Greater legal equality alleviates females' involuntary financial exclusion. However, prevailing adverse social norms can cancel out the beneficial effects of legal equality on financial inclusion, which should be better implemented.

Damra et al (2023) use data from the World Value and Financial Access Surveys over 2010-2021 in 13 MENA countries, investigating the impact of general trust and confidence in banks on financial inclusion. They estimate a generalised quantile regression, whose results indicate a nonlinear (U-shaped) relationship between general trust and financial inclusion and a nonlinear (Inverted U-shaped) relationship between confidence in banks on financial inclusion. This sheds some light on the attitude of individuals towards banks, especially women and their preference for informal financial transactions as a trustworthy substitute.

Morrar et al (2024) use decomposition models to analyse gender discrimination in financial literacy and access to financial services. Financial inclusion in gender gap widened over 2016-2022, due to the deterioration of female labour market participation and a drop in income during the pandemic. Technology literacy or access to digital financial services are barriers to adopting financial technologies, which influence the likelihood of financial inclusion.

Elmasmari & Amaghous (2024) examine the determinants of financial inclusion and fintech and their effects on youth labour force participation in the MENA region, using the Global Findex database for 2021. They perform probit estimations and propensity score matching, according to which young people with higher education, higher incomes, mobile phones and internet access are more likely to be included in the traditional and digital financial systems. Factors hindering financial inclusion include a lack of documentation, religious constraints and the costs of financial services. Holding bank and mobile money accounts, alongside with savings, formal loans, and digital transactions have a significant impact on young people's participation in the labour force.

Berguiga & Adair (2024) focus on youths aged 15-34 make half the MENA population and over one quarter of the labour force. They address the determinants of their financial inclusion in Egypt, Jordan and Tunisia from 2014 and 2017 to 2021, using probit regressions. Five results highlight the role of job-status, income, education, gender and age. Prior the pandemic, financial inclusion of young entrepreneurs is affected by (female) gender, (middle) income, (low) education level and country policy. During the pandemic, young women became more financially included. There was no age gap regarding digital services. Despite improvement, digital services remain unsuitable for poorly educated youth. Gender has no effect on the financial inclusion of young employees before and during the pandemic.

METHODOLOGY

HYPOTHESES AND SAMPLES

With regard to the literature review, our paper brings in some original insights. In the first place we expand the period of observation, from 2011 to 2021. Second, we make a distinction between the supply side factors, which can be related to discrimination, and demand-side factors that are linked to self-selection. Third, we take into account all dimensions of financial inclusion, including fintech. In this respect, we design four hypotheses that are testing financial inclusion in MENA countries (see Box 1).

Box 1. Hypotheses

H₁ hypothesis testing the age gap is stated as follows: Youths are less financially included.

H₂ hypothesis testing the gender gap is stated as follows: Women are less financially included.

H₃ hypothesis is the following: Youth financial inclusion depends on exogenous factors (discrimination) according to gender and workforce

H₄ hypothesis is the following: Youth financial inclusion depends on endogenous factors (self-selection) according to gender and workforce

To some extent, age gap (H₁) and gender gap hypotheses (H₂) are documented in the literature. Two other hypotheses respectively related to age and Gender (H₃, and H₄) have not been tackled elsewhere and bring in original insights. We investigate pooled household samples in five MENA countries: Egypt, Tunisia, Jordan, Lebanon and Palestine. Samples are selected from the Global Findex Database^[2] and consist of 6,069 households in 2011, 6,058 in 2014, 6,029 in 2017 and 6,036 in 2021. We split the dataset into four sub-samples: Three before the pandemic (2011, 2014 and 2017), and one during the pandemic (2021).

[2] In most low and middle-income economies, Global Findex data were collected through face-to-face interviews, using an area frame design for interviewing. All factors mentioned in the paragraph are included as reasons suggested in the survey questionnaire. The distinction between exogenous and endogenous factors is ours.

The comparison of these MENA countries is consistent for two reasons. (i) According to the World Bank, they belong to the lower middle-income category representing a broad spectrum in terms of GDP per capita, in 2021 (2021 PPA) that accounts for \$15,579 in Egypt, \$12,375 in Tunisia, \$11,600 in Lebanon, \$9,182 in Jordan, but only \$5,663 in Palestine in the Middle East. (ii) The sample size of datasets (i.e., over 1,000 individuals each year) is roughly the same for the five countries.

DESCRIPTIVE STATISTICS

According to Table 1, over the period 2014-2021, more than half the individuals are mature men (over 35 years old). Employees account for more than 46% of the labour force in 2017 and 2021. Almost 40% of the population have an account and over 96% at financial institutions. The percentage of account ownership in a financial institution and/or a mobile money account increased from 29.65% in 2011 to 40.41% in 2017 before the pandemic, it decreased to 38.64% during the pandemic. Indeed, the use of financial account has been replaced by that of a mobile money account, which has been rising gradually from 1.92% in 2014 to 12.54% in 2021. The nature of account holding differs according to household characteristics: gender, age and job status. Women became less financially included over the period 2014-2021 but they hold slightly more accounts with financial institutions (97.16%) than their male counterparts do (95.64%) during the pandemic.

Bank account ownership increases with age, whereas it declines with age for holding a mobile money account. The pandemic facilitated and accelerated access to mobile money accounts for youth (19.22%) especially males, compared to 2.71% before the pandemic (in 2014). Regarding job status, employees are those who use most financial institutions or mobile money accounts. During the pandemic, the use of mobile money accounts is remarkable for the self-employed in agriculture (11.96%) compared to other self-employed (including agriculture) before the pandemic (1.68% in 2017). In contrast, the pandemic reduced the use of financial institution accounts or mobile money accounts for female employees and self-employed.

| Year | 2011 | | 2014 | | | | | | 2017 | | | | | | 2021 | | | | | |
|-------------------------------|------------------------------|------------------|------------------|------------------|-------------------|----------------|-----|----------------|------------------|------------------|-------------------|----------------|----|----------------|------------------|------------------|-------------------|----------------|----------------|----------------|
| | Account Holding ^a | | Account Holding | | Nature of account | | | | Account Holding | | Nature of account | | | | Account Holding | | Nature of account | | | |
| | N(%) | N(%) | N(%) | N(%) | N | % ^c | N | % ^c | N | N | N | % ^c | N | % ^c | N | N | N | % ^c | N ^c | % ^c |
| Age | | | | | | | | | | | | | | | | | | | | |
| Youth 15-34 | 2,661 (52.58) | 705 (47) | 2,444 (48.37) | 663 (39.61) | 660 | 99.55 | 18 | 2.71 | 2,229 (44.47) | 713 (35.1)9 | 705 | 98.87 | 25 | 3.50 | 2,297 (45.63) | 692 (35.58) | 653 | 94.36 | 133 | 19.22 |
| Female | 1,336 (26.39) | 423 (28.2) | 1,228 (24.03) | 403 (24.07) | 400 | 99.25 | 15 | 3.72 | 1,028 (20.51) | 431 (21.27) | 423 | 98.14 | 21 | 4.87 | 1,098 (21.81) | 268 (13.77) | 257 | 95.89 | 39 | 14.55 |
| Male | 1,325 (26.18) | 282 (18.8) | 1,216 (24.06) | 260 (15.53) | 260 | 100 | 3 | 1.15 | 1,201 (23.96) | 282 (13.91) | 282 | 100 | 8 | 2.83 | 1,199 (23.81) | 424 (21.79) | 396 | 93.39 | 94 | 22.16 |
| Mature +35 | 2,400 (47.42) | 795 (53) | 2,609 (51.63) | 1,011 (60.39) | 1,009 | 99.80 | 14 | 1.38 | 2,783 (55.53) | 1,312 (55.03) | 1,309 | 99.37 | 27 | 2.42 | 2,737 (54.37) | 1,253 (64.42) | 1,219 | 97.29 | 111 | 8.86 |
| Female | 1,117 (22.07) | 524 (34.93) | 1,240 (24.53) | 631 (37.69) | 631 | 100 | 9 | 1.42 | 1,320 (26.33) | 771 (38.05) | 769 | 99.74 | 13 | 1.68 | 1,417 (28.14) | 508 (26.11) | 497 | 97.83 | 39 | 7.67 |
| Male | 1,283 (25.35) | 271 (18.06) | 1,369 (27.09) | 380 (22.70) | 378 | 99.47 | 5 | 1.31 | 1,463 (29.18) | 541 (26.70) | 540 | 99.8 | 10 | 1.84 | 1,320 (26.22) | 745 (38.30) | 722 | 96.91 | 72 | 9.66 |
| Total | 5,061 (100) | 1,500 (100) | 5,053 (100) | 1,674 (100) | 1,669 | 99.70 | 32 | 1.91 | 5,012 (100) | 2,026 (100) | 2,015 | 99.46 | 52 | 2.57 | 5,034 (100) | 1,945 (100) | 1,872 | 96.25 | 244 | 12.54 |
| Gender | | | | | | | | | | | | | | | | | | | | |
| Female | 2,454 (48.41) | 948 (63.11) | 2,469 (48.83) | 1,034 (61.73) | 1,031 | 99.71 | 24 | 2.33 | 2,348 (46.84) | 1,190 (58.73) | 1,187 | 99.74 | 27 | 2.83 | 2,515 (49.96) | 776 (39.90) | 754 | 97.16 | 78 | 10.05 |
| Male | 2,615 (51.59) | 554 (36.88) | 2,587 (51.17) | 641 (38.27) | 639 | 99.69 | 8 | 1.25 | 2,665 (53.16) | 836 (41.26) | 828 | 99.04 | 25 | 2.18 | 2,519 (50.04) | 1,169 (60.10) | 1,118 | 95.64 | 166 | 14.20 |
| Total | 5,069 (100) | 1,502 (100) | 5,056 (100) | 1,675 (100) | 1,670 | 99.70 | 32 | 1.92 | 5,013 (100) | 2,026 (100) | 2,015 | 99.46 | 52 | 2.57 | 5,034 (100) | 1,945 (100) | 1,872 | 96.25 | 244 | 12.54 |
| Job status^d | | | | | | | | | | | | | | | | | | | | |
| Employee | N/A | N/A | 1,031 | 331 | 328 | 100 | 8 | 2.48 | 1,256 (46.28) | 752 (49.70) | 750 | 99.73 | 14 | 1.86 | 1,225 (47.28) | 722 (58.94) | 699 | 96.81 | 115 | 15.93 |
| Female | N/A | N/A | 502 | 207 | 205 | 99.03 | 6 | 2.92 | 897 (17.89) | 539 (26.60) | 537 | 99.62 | 14 | 25.97 | 284 (10.96) | 204 (16.65) | 201 | 98.52 | 28 | 13.72 |
| Male | N/A | N/A | 529 | 124 | 123 | 99.19 | 2 | 1.61 | 359 (7.16) | 252 (12.43) | 251 | 99.6 | 10 | 3.96 | 941 (36.31) | 518 (42.28) | 498 | 96.13 | 87 | 16.79 |
| Self-employed. | N/A | N/A | 626 | 328 | 328 | 78.52 | 8 | 1.56 | 753 (27.78) | 357 (23.59) | 356 | 99.71 | 6 | 1.68 | 207 (7.99) | 92 (7.51) | 89 | 96.74 | 11 | 11.96 |
| Female | N/A | N/A | 413 | 237 | 237 | 100 | 7 | 2.95 | 479 (9.55) | 283 (13.96) | 281 | 99.29 | 10 | 3.53 | 71 (2.74) | 21 (1.71) | 20 | 95.23 | 2 | 9.52 |
| Male | N/A | N/A | 213 | 91 | 91 | 100 | 1 | 1.19 | 274 (5.46) | 125 (6.16) | 125 | 100 | 2 | 1.6 | 136 (5.24) | 71 (5.79) | 69 | 97.18 | 9 | 12.67 |
| Unemployed | N/A | N/A | N/A | N/A | N/A | | N/A | | 707 (25.94) | 404 (19.94) | 402 | 99.50 | 16 | 3.96 | N/A | N/A | N/A | | N/A | |
| Female | N/A | N/A | N/A | N/A | N/A | | N/A | | 441 (8.79) | 171 (8.44) | 171 | 100 | 3 | 1.75 | N/A | N/A | N/A | | N/A | |
| Male | N/A | N/A | N/A | N/A | N/A | | N/A | | 266 (5.30) | 92 (4.54) | 92 | 100 | 4 | 4.34 | N/A | N/A | N/A | | N/A | |
| Labour force | N/A | N/A | N/A | N/A | N/A | | N/A | | 2,714 (100) | 1,513 (100) | 1,508 | 99.66 | 36 | 2.37 | 2,591 (100) | 1,225 (100) | 1,174 | 95.84 | 173 | 14.12 |
| Total | 5,066 (100) | 1,502 (29.65) | 5,056 (100) | 1,675 (33.13) | 1,670 | 99.70 | 32 | 1.92 | 5,013 (100) | 2,026 (40.41) | 2,015 | 99.46 | 52 | 2.57 | 5,034 (100) | 1,945 (38.64) | 1,872 | 96.25 | 244 | 12.54 |

Table 1. Household characteristics according to the nature of account holding over 2011-2021.

Notes: ^a Only at financial institutions, ^b includes those holding both accounts. ^c Percentage of total for various accounts is related to total account holding for each sub-sample (read horizontally). ^d Information is lacking in 2011 and in 2014. The self-employed category includes only farmers in 2021. **Source:** Authors from the Global Findex database (2011, 2014, 2017 and 2021).

Table 2 reports that almost one third of our MENA samples holds a financial institution account. This share increased from 2011 to 2017, whereas it declined during the pandemic.

| Year | 2011 | % | 2014 | %* | 2017 | %* | 2021 | %* |
|---|--------------|------------|--------------|------------|--------------|------------|--------------|--------------|
| Financial institution account | | | | | | | | |
| <i>Holding</i> | 705 | 26.49 | 660 | 27 | 705 | 31.63 | 653 | 28.43 |
| <i>No holding</i> | 1,956 | 73.51 | 1,784 | 73 | 1,524 | 68.37 | 1,644 | 71.57 |
| Total | 2,661 | 100 | 2,444 | 100 | 2,229 | 100 | 2,297 | 100 |
| Factors for no account ownership | | | | | | | | |
| <i>Exogenous (supply side)</i> | 544 | 27.81 | 769 | 43.10 | 593 | 38.91 | 561 | 34.12 |
| <i>Endogenous (demand side)</i> | 1,744 | 89.16 | 1,624 | 91.03 | 1,094 | 71.78 | 1,552 | 94.40 |
| <i>Exogenous & Endogenous^b</i> | 497 | 25.4 | 659 | 36.93 | 492 | 32.28 | 536 | 32.60 |
| Total no account holding | 1,956 | 100 | 1,784 | 100 | 1,524 | 100 | 1,644 | 71.57 |

Table 2. Factors of absence of account holding at a financial institution among youths (15-34).

Note: ^a The percentage of each reason for exclusion is calculated according to the number of those not holding a financial institution account, because the household may have more than one reason for exclusion. ^b Individuals who are financially excluded for both endogenous and exogenous factors **Source:** Authors from the Global Findex database (2011, 2014, 2017 and 2021)

Beyond the impact of the pandemic and the accelerated use of mobile money accounts, there are distinct factors why MENA people do not hold an account at a financial institution. From the supply side, factors are exogenous, because financial institutions are too far away (i.e., absence of available infrastructure, such as a branch) and necessary documentation is lacking; the main factor is the cost for financial services that proves too expensive (2017 and 2021) and the constraints upon opening an account (in 2014). From the demand side, factors are endogenous, such as the absence of need for financial services or because a family member already has an account, youths are prone to self-selection insofar they distrust financial institutions or have religious beliefs; the main reason being they lack money. Factors for financial exclusion are rather endogenous (roughly nine out of ten) than exogenous (roughly two out of five and twice as less important) whatever the period. Almost 35% of youth individuals do not hold accounts for both endogenous and exogenous factors. They are more prone to self-selection, but are also facing discrimination to a lesser extent.

According to Table 3, during the pandemic, the decline in traditional financial services by young people may be due to the increasing use of digital financial products mainly provided by mobile banking. In 2021, 82.44% of young people with a telephone and access to the internet used mobile banking to access financial services compared to 48.48% in 2017, 12.83% in 2014 and 36.78% in 2011.

These patterns are consistent with Table 1 reporting that youths were increasingly holding mobile money accounts especially during the pandemic. They used financial digital services for various purposes such as withdrawals, check accounts, pay bills, send or receive money, wages and public or private transfers, etc. Their savings or/and borrowings via mobile money account reached 14.69% during the pandemic.

| Year | 2011 | % | 2017 | % | 2017 | % | 2021 | % |
|---|------|-------|------|-------|------|-------|------|-------|
| Financial traditional services from Financial institution^a | | | | | | | | |
| <i>Savings or/and Loans</i> | 272 | 100 | 324 | 100 | 458 | 100 | 202 | 100 |
| Financial Digital services by financial institution^b | | | | | | | | |
| <i>Credit or/and debit card</i> | 148 | 76.68 | 251 | 94.72 | 155 | 78.28 | 204 | 60.7 |
| <i>Mobile banking</i> | 71 | 36.78 | 34 | 12.83 | 96 | 48.48 | 277 | 82.44 |
| Total | 193 | 100 | 265 | 100 | 198 | 100 | 336 | 100 |
| Financial digital services from financial institution and/or mobile money service providers | | | | | | | | |
| <i>Withdrawals, check account. pay bills, send or receive money, wages, public or private transfers and other fintech</i> | 222 | 100 | 296 | 100 | 272 | 100 | 456 | 100 |
| <i>Savings or/and Loans via mobile money</i> | | | | | | | | 14.69 |
| Total | 222 | 100 | 296 | 100 | 272 | 100 | 100 | 100 |

Table 3. Financial services from financial institutions or/and mobile money providers used by youths.

Note: ^a from a financial institution. ^b from a financial institution. ^c from a financial institution and/or mobile money service provider **Source:** Authors from the Global Findex database (2011, 2014, 2017 and 2021).

METHODOLOGY

Two dimensions of financial inclusion, account ownership and use are best represented with a decision tree (Figure 1). Three binary variables measure these dimensions and stand as the dependent variable of three models addressing financial inclusion: Holding an account at a formal financial institution, a mobile money service provider or both (Account holding) vs No account holding (model 1), using traditional services provided by a financial institution (Traditional services) vs. No use (model 2), and using digital services from a financial institution and/or mobile money service providers (Fintech) vs No. use (model 3).

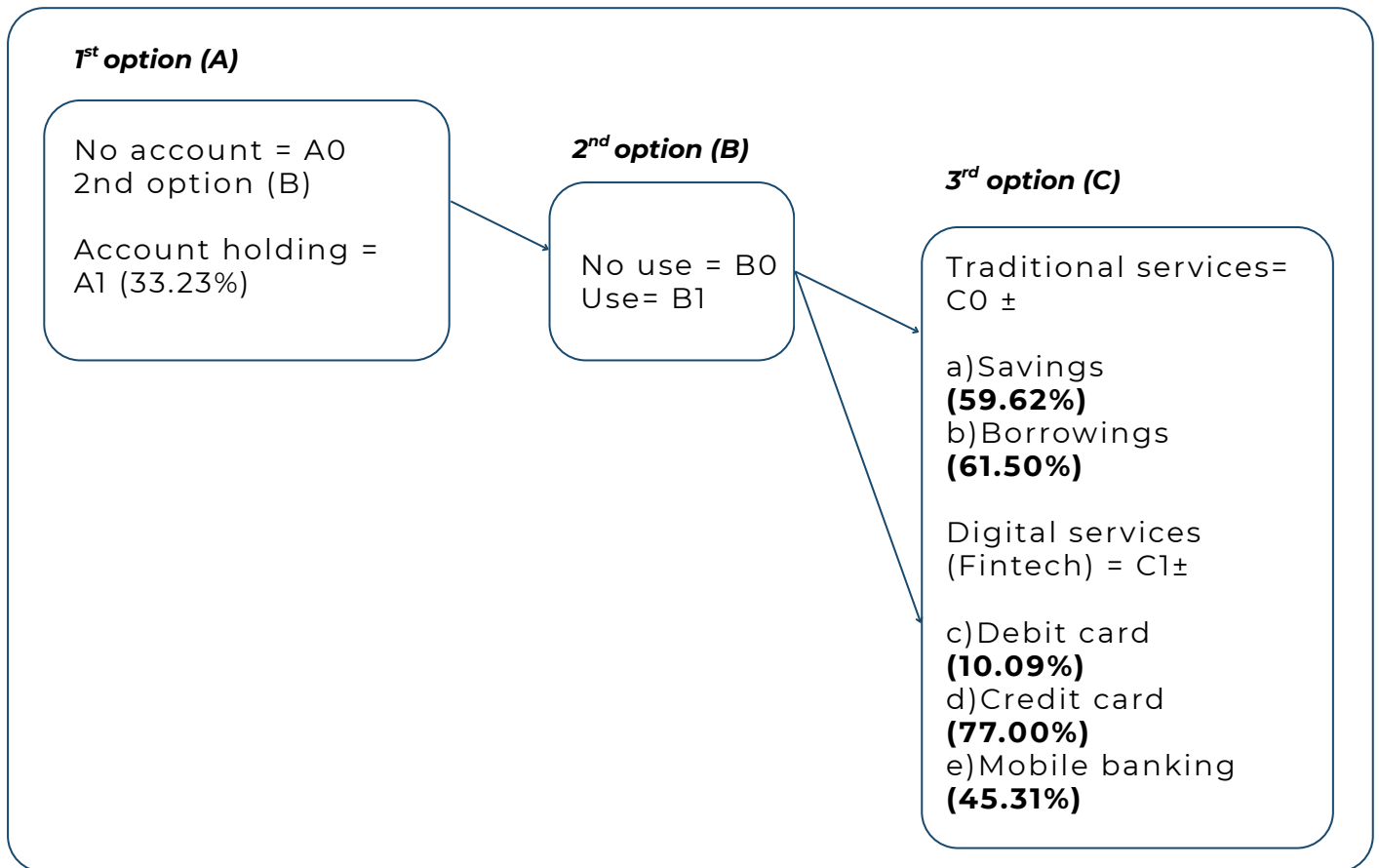


Figure 1. Decision tree: The sequential financial inclusion scheme in 2021 for the selected MENA sample.

Note: ±. The use (B1) of several financial services (C0 and/or C1) can combine for account holding people (A1). The percentages of services that are used (C0 and C1) are calculated on the basis of use (B1), which stands below the share (33.23%) of account holding (A1). **Source:** Authors' design from the Global Findex database

These three probit regression models (model 1, model 2 and model 3) estimate the predicted probabilities of each financial inclusion dimension prior to (2011, 2014 and 2017) and during the pandemic (2021). First, in order to test age gap (H_1) and gender gap (H_2) hypotheses. Age and Gender are designed as independent variables with other variables regarding household characteristics (Job status, Education level and Income), external funding sources (Informal loan), factors for financial exclusion (Endogenous and exogenous) and Country dummies as control variables (Appendix Table A1) for the overall sample. In the second place, Age and Gender variables are used to extract two sub-samples with respect to youth and to females. Last, we estimate these three models on these two sub-samples for each year, in order to test two other hypotheses (H_3 , and H_4) respectively related to self-selection vs discrimination behaviour, and to better focus on certain determinants of financial inclusion specific to youth and females.

RESULTS

ACCOUNT HOLDING

Regarding the first dimension of financial inclusion (Account holding) in Table 4, the sign of Gender variable changed and became negative during the pandemic (model 211a). This result confirms hypothesis H_2 and corroborates the findings of Kazemikhasragh et al. (2022) and Cicchiello et al (2021), addressing the pre-pandemic period: Being a woman reduces the probability of holding an account at a financial institution or via a mobile money provider. It contradicts the declining trend observed in the gender gap with respect to bank accounts in developing economies from 9 to 6 in 2022 (Demirgüç-Kunt et al. 2022). The pandemic enlarged the gender gap with respect to account holding in the five MENA countries. Young people (Youth) hold less bank accounts or from mobile money service providers before and during the pandemic (model 1: 111a, 141a, 171a, 211a). It confirms hypothesis H_1 , according to which there is an age gap as regards account holding, and also confirms that of Mouna & Jarboui (2022): Young people are disproportionately exposed to financial exclusion in these MENA countries. Noteworthy is that legal restrictions on young people (Skykes et al. 2016) may also prevent them from being financially included.

The probability of holding an account is high for self-employed for the four years (model 1: 111a, 141a, 171a and 211a), as well as for employees but only during the pandemic (model 1: 211a): Employee and Self-employed are significant and positive. Other determinants of account holding are significant. Education (Primary and Secondary levels) and Income (Poorest Q1) are negative while Country dummies (Egypt and Lebanon) become positive since 2017: Whatever the period, before or during the pandemic, access to accounts is limited for less educated and for poor populations but higher for other MENA countries than Tunisia. Informal loan is positive and significant only in 2014. Exogenous variable is positive and significant in 2017: This result is surprising because although the individuals in our sample encounter exogenous obstacles due mainly to the high costs of financial institutions, they have both bank and mobile money accounts. However, this variable becomes insignificant during the pandemic.

| Year Model | 2011 (111a) | 2014 (141a) | 2017 (171a) | 2021 (211a) |
|--|-------------------------|-------------------------|-------------------------|-------------------------|
| Gender: Female (ref.: Male) | 0.4655*** (7.0040) | -0.1253 (-1.2753) | 0.2514** (2.5687) | -0.2097*** (-2.6002) |
| Age: Youth (15-34) (ref.: Mature ≥ 35) | -0.4541*** (-6.6769) | -0.2430** (-2.3284) | -0.1349 (-1.5079) | -0.2370*** (-3.1734) |
| Job status: Self-employed (ref.: Unemployed) | | 0.4698*** (3.7032) | 0.2623** (2.2791) | 0.4603*** (2.7230) |
| Job status: Employee (ref.: Unemployed) | | -0.0032 (-0.0308) | 0.1088 (0.8672) | 0.2775*** (2.9149) |
| Education: Primary (ref.: Tertiary) | -0.8632*** (-6.6818) | -0.1258 (-0.5689) | -0.0474 (-0.2980) | -0.2581** (-2.0657) |
| Education: Secondary (ref.: Tertiary) | -0.7065*** (-6.2147) | 0.0480 (0.2392) | -0.2344 (-1.5558) | -0.2746** (-2.4244) |
| Income: Poorest Q1 (ref.: Richest Q5) | -0.9182*** (-8.1238) | -0.3457** (-2.2001) | -0.2949** (-2.2368) | 0.0481 (0.4259) |
| Income: Middle (Q2+Q3+Q4) (ref.: Richest Q5) | -0.4764*** (-6.0357) | -0.0935 (-0.8324) | -0.1641 (-1.5241) | -0.1043 (-1.1034) |
| Endogenous factors^a (ref.: No endogenous factors) | | 0.1515 (0.8664) | 0.1052 (0.6107) | 0.2154 (1.2172) |
| Exogenous factors (ref.: No exogenous factors) | | 0.0425 (0.4407) | 0.2866*** (2.9141) | 0.0439 (0.5701) |
| Informal loan: (ref.: No informal loan) | 0.1429* (1.7921) | 0.2345** (2.1910) | 0.0418 (0.4675) | 0.0404 (0.5287) |
| Country: Egypt (ref.: Tunisia) | -0.0599 (-0.3777) | -0.5167*** (-3.6321) | 0.3653*** (2.5919) | -0.4086*** (-3.2945) |
| Country: Jordan (ref.: Tunisia) | 0.0860 (0.8671) | -0.9585*** (-4.4256) | 0.5307*** (3.9522) | 0.4392*** (4.0350) |
| Country: Lebanon (ref.: Tunisia) | 0.7138*** (5.9987) | -0.2226 (-1.5027) | -0.2122 (-1.1455) | -0.4949*** (-4.0230) |
| Country: Palestine (ref.: Tunisia) | -0.3554*** (-3.9400) | 0.0295 (0.2383) | -0.1090 (-0.6214) | -0.0267 (-0.2315) |
| Constant | 1.8409*** (13.2000) | -1.6924*** (-5.6169) | -1.9651*** (-6.8647) | -1.2746*** (-5.5103) |
| Observations | 2,305 | 3,440 | 3,045 | 3,182 |

Table 4. Estimation of financial inclusion model 1: Account holding.

Note: ^a Endogenous and exogenous factors are omitted in model 111a. In 2011, no information about Job status. In 2021, Self-employed include only farmers. Robust z-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.1. **Source:** Authors from Global Findex (2011, 2014, 2017 and 2021).

USE OF TRADITIONAL SERVICES FROM FINANCIAL INSTITUTIONS.

Table 5 reports the use of traditional services from financial institutions. In 2011, the use of savings or loan services from financial institutions depends positively on Gender (Female), Informal loan and Country dummy (Jordan, Palestine and Lebanon) but negatively on Age (Youth), Education (Primary) according to model 112b. In 2014 and 2017, Gender and Education (Primary) lose significance. The impact of Job status (Self-employed), Age (Youth) and Informal loan remains robust while Job status (Employees), Endogenous factors and all countries dummies variables become significantly positive: Employees and Self-employed are the main users of traditional services (model 142b and 172b). Our results do not match those of Shihadeh (2022), reporting that women and the poor in Palestine are less likely to be involved in loans and formal accounts ownership.

During the pandemic (2021), the sign of Job status (Employee), Endogenous factors and Education (Primary) remained the same: Using traditional services rises for employees and for those who face endogenous factors (mainly lack of money) when opening accounts but drops for less educated (model 212b). The sign of Country dummies changes while Age, Gender, and Country dummy (Jordan) lose their significance. The use of these services is very limited for poor or middle-income people. There is no age gap and no gender gap. Although the use of traditional services prior the pandemic declined for young people and rose for women, their use during the pandemic becomes unclear. Hypotheses H_1 and H_2 with respect to that use are partially rejected. The use of traditional services rises for Employees whatever the period (model 142b, 172b and 212b) and for Self-employed before the pandemic (model 142b and 172b).

| Year Model | 2011 (112b) | 2014 (142b) | 2017 (172b) | 2021 (212b) |
|--|--------------------------|-------------------------|-----------------------|-------------------------|
| Gender: Female (ref.: Male) | 0.1390*** (2.7926) | 0.0801 (1.2372) | -0.1215 (-1.2886) | 0.0837 (0.8548) |
| Age: Youth (15-34) (ref.: Mature ≥ 35) | -0.2124*** (-4.1229) | - (-5.3184) | - (-3.1445) | -0.1467 (-1.5821) |
| Job status: Self-employed (ref.: Unemployed) | | 0.3830*** (7.8341) | 0.2700*** (6.0585) | 0.2886 (1.5270) |
| Job status: Employee (ref.: Unemployed) | | -0.0545 (-0.7316) | 0.3627*** (3.0815) | 0.2448** (2.1511) |
| Education: Primary (ref.: Tertiary) | -0.3104*** (-3.7832) | -0.2529* (-1.8677) | -0.0067 (-0.0406) | -0.3223** (-2.1500) |
| Education: Secondary (ref.: Tertiary) | -0.2078*** (-3.1914) | -0.1715 (-1.3760) | 0.0021 (0.0131) | -0.3299** (-2.4154) |
| Income: Poorest Q1 (ref.: Richest Q5) | -0.5096*** (-5.2295) | -0.0289 (-0.2738) | 0.0503 (0.3950) | 0.0842 (0.6184) |
| Income: Middle (Q2+Q3+Q4) (ref.: Richest Q5) | -0.2092*** (-3.8522) | 0.0198 (0.2308) | -0.0078 (-0.0709) | -0.0560 (-0.4828) |
| Endogenous factors (ref.: No endogenous factors) | -1.2040*** (-21.6184) | -0.0781 (-0.7024) | 0.3190* (1.7533) | 0.6356* (1.7357) |
| Exogenous factors (ref.: No exogenous factors) | -0.1794* (-1.9146) | 0.0773 (1.1279) | -0.0594 (-0.6730) | 0.2021** (2.2364) |
| Informal loan: (ref.: No informal loan) | -0.0772 (-1.2136) | 0.4089*** (5.5309) | 0.1417* (1.6482) | 0.3100*** (3.5172) |
| Country: Egypt (ref.: Tunisia) | 0.1320 (1.3021) | 0.0980 (0.9980) | 0.3897** (2.3909) | -0.2297* (-1.8607) |
| Country: Jordan (ref.: Tunisia) | 0.4911*** (6.6086) | 0.3808*** (3.8141) | 0.8350*** (5.4486) | -0.1287 (-0.9989) |
| Country: Lebanon (ref.: Tunisia) | 0.8530*** (11.8077) | 0.1789 (1.6254) | 0.3513** (2.0400) | - (-4.3709) |
| Country: Palestine (ref.: Tunisia) | 0.2710*** (3.4661) | - (-3.1309) | 0.3775** (2.2455) | -0.6175*** (-4.0609) |
| Constant | -0.5545*** (-6.2769) | -1.2831*** (-7.0588) | - (-9.6190) | -2.0812*** (-5.2757) |
| Observations | 5,942 | 3,440 | 3,044 | 3,181 |

Table 5. Estimation of the financial inclusion model 2: Use of traditional services from financial institutions.

Note: Robust z-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.1.
Source: Authors from Global Findex (2011, 2014, 2017 and 2021).

USE OF DIGITAL SERVICES FROM FINANCIAL INSTITUTION AND/OR MOBILE MONEY PROVIDERS.

Regarding the third dimension of financial inclusion, using digital services (Fintech), Age and Employee are significant and positive whatever the period: Being a youth and employee reinforces the use of Fintech during the pandemic (model 143c, 173c, 213c). The non-significance of Gender during the pandemic does not validate hypothesis H₂ and is consistent with the results of Demirgüç et al. (2018), Breza et al. (2020) and Tripathi & Rajeev (2023), according to which fintech promotes financial inclusion and reduce the gender gap in accessing financial services. On the other hand, the use of more digital services improves the financial inclusion of youth especially during the pandemic (model 213c). This result is consistent with hypothesis H₁ and Adair Ed. (2023) for three MENA countries (Egypt, Jordan and Tunisia): In contrast, there is no age gap for Fintech, thus. H₁ is not validated in this respect.

| Model | (113c) | (143c) | (173c) | (213c) |
|--|--------------------------|-------------------------|-------------------------|-------------------------|
| Gender: Female (ref.: Male) | 0.1172** (2.5258) | 0.0211 (0.2390) | 0.1755 (1.5395) | 0.1146 (1.6244) |
| Age: Youth (15-34) (ref.: Mature ≥ 35) | 0.1656*** (3.4331) | 0.0156 (0.1684) | 0.1979* (1.9052) | 0.3624*** (5.2101) |
| Job status: Self-employed (ref.: Unemployed) | | 0.3843*** (3.1048) | 0.1285 (0.8541) | 0.2734 (1.5162) |
| Job status: Employee (ref.: Unemployed) | | -0.0972 (-0.9675) | 0.1385 (0.9662) | 0.2034** (2.3191) |
| Education: Primary (ref.: Tertiary) | -0.3987*** (-5.2353) | -0.0435 (-0.2170) | -0.2710 (-1.5100) | -0.7924*** (-6.9944) |
| Education: Secondary (ref.: Tertiary) | -0.3626*** (-5.4665) | 0.2082 (1.1334) | -0.0830 (-0.5408) | -0.3322*** (-3.5353) |
| Income: Poorest Q1 (ref.: Richest Q5) | -0.5451*** (-6.4608) | 0.0402 (0.2749) | -0.3185** (-2.1157) | -0.5710*** (-5.2033) |
| Income: Middle (Q2+Q3+Q4) (ref.: Richest Q5) | -0.2661*** (-5.0424) | 0.0923 (0.7960) | -0.1967* (-1.7012) | -0.3030*** (-3.7107) |
| Endogenous factors (ref.: No endogenous factors) | -0.8991*** (-17.7079) | 0.0871 (0.5579) | -0.2208 (-1.4706) | 0.1624 (1.1257) |
| Exogenous factors (ref.: No exogenous factors) | -0.4681*** (-5.9621) | -0.1105 (-1.2156) | 0.1790 (1.6152) | 0.0410 (0.5977) |
| Informal loan: (ref.: No informal loan) | 0.0637 (1.1362) | 0.1513 (1.4787) | 0.0189 (0.1737) | 0.2643*** (3.9285) |
| Country: Egypt (ref.: Tunisia) | -1.2178*** (-12.6798) | 0.2070 (1.6322) | 0.3149* (1.9032) | -0.9686*** (-8.2898) |
| Country: Jordan (ref.: Tunisia) | -0.9346*** (-13.3039) | -0.0428 (-0.3115) | 0.1363 (0.8155) | 0.0387 (0.4015) |
| Country: Lebanon (ref.: Tunisia) | -0.6411*** (-9.6130) | 0.2411* (1.7137) | -0.0687 (-0.3285) | -0.1207 (-1.1069) |
| Country: Palestine (ref.: Tunisia) | -0.8015*** (-11.0450) | -0.5291*** (-2.8807) | 0.3148* (1.8455) | -0.2243** (-2.3556) |
| Constant | 0.2575*** (3.0686) | -2.1819*** (-8.0593) | -1.8918*** (-7.1009) | -0.7945*** (-4.0933) |
| Observations | 5,917 | 3,435 | 3,041 | 2,727 |

Table 6. Estimation of the financial inclusion model 3: Use of digital services

Note: Digital services from financial institutions and/or mobile money service providers. Robust z-statistics in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. **Source:** Authors from Global Findex (2011, 2014, 2017 and 2021).

Having a high level of education and earning a large income (not belonging to the poorest and middle quintiles) reinforces the use of Fintech regardless it takes place before or during the pandemic. Country dummies (Egypt and Palestine) are significantly negative: Despite the development of digital services, especially during the pandemic, the use remains limited in the sample. Our result concerning Education is consistent with that of Tripathi & Rajeev (2023). However, our result concerning the Income variable does not suggest that Fintech proves instrumental in struggling against income inequalities: Disadvantaged groups cannot benefit from this technical progress. According to Agur et al. (2020), the sudden shift to digital financial services could worsen not only the income group but also gender disparity.

FINANCIAL INCLUSION OF YOUTH AND FEMALES FACING SELF-SELECTION VS. DISCRIMINATION.

Table 7 and Table 8 report the results of marginal effects when estimating the three models of financial inclusion respectively on the “youth” and “females” sub-samples. These results allow us to check the robustness of H_1 and H_2 hypothesis and to verify hypothesis H_3 and H_4 . According to Table 7, Gender becomes negative during the pandemic: Young women hold less accounts during the pandemic (model 211a). Hence, we confirm hypothesis H_1 and H_2 only for account holding. Job status variables are positive and significant in model 211a and 211b): The younger employees and entrepreneurs are, the more they own accounts and use traditional services.

Whatever the period, Self-employed is positive and significant for Account holding (model 141a, 171a, and 211a) and the Traditional services use (model 142b, 172b, and 212b). No Endogenous factors or Exogenous factors are significant during the pandemic (model 211a, 212b and 213c). Hypotheses H_3 and H_4 are not validated in this respect. According to Table 8, the younger women are, the more their probability of holding an account declines by 3.72% during the pandemic (model 211a). Youth exerts a negative impact on the use by women of traditional services before the pandemic (model 112b 142b and 172b) and a positive impact on their use of digital services during the pandemic (model 213c). Although we cannot confirm hypothesis H_1 and H_2 for all dimensions of financial inclusion, younger women are less financially included with respect to account holding and traditional use.

According to Özşuca (2019), gender differences in youth age groups explain almost 2% of the gap between account ownership and formal saving. Age is a significant determinant of the existing financial inclusion gap between women and men, which may be the result of youth unemployment rates, which stand dramatically high in the MENA region (OECD 2022). With respect to the estimates on the female subsample, Gender confirms this relationship: The more females are employees, the more they own accounts, whereas their use of traditional or digital services is unknown.

Whatever the period, Self-employed is positive and significant for Account holding (model 141a, 171a, and 211a) and the Traditional services use (model 142b, 172b, and 212b). The estimates on the female subsample display the opposite effect: Gender improves this effect only for account ownership and the use of traditional services. Noteworthy is that self-employed surveyed are only farmers during the pandemic. Their use of fintech services is limited and it does not depend on their gender. The positive impact of Exogenous factors is not robust, because it changes according to the measure of financial inclusion and the period. Hypothesis H_3 is partially validated. Endogenous factors are insignificant for all financial inclusion models and hypothesis H_4 is thus rejected.

| Year | 2011 | | | 2014 | | | 2017 | | | 2021 | | |
|---|-----------------------------|-----------------------------------|--------------------------------|------------------------------|-----------------------------------|-------------------------|------------------------------|-----------------------------------|-------------------------|------------------------------|-----------------------------------|-------------------------|
| | (11a) Account holding | (112b) Traditional Services | (113c) ^o Fintech | (141a) Account holding | (142b) Traditional Services | (143c) Fintech | (171a) Account holding | (172b) Traditional services | (173c) Fintech | (211a) Account holding | (212b) Traditional Services | (213c) Fintech |
| Gender: Female (ref.: Male) | 0.0532** (2.2838) | 0.0171* (1.7252) | 0.0223* (1.9319) | -0.0093 (-1.4135) | -0.0040 (-0.4044) | 0.0194** (2.3570) | 0.0093 (1.0543) | 0.0046 (0.3650) | 0.0128 (1.3153) | -0.0198* (-1.7841) | 0.0071 (0.7960) | -0.0155 (-0.2905) |
| Job status: Self-employed (ref.: Unemployed) | | | | 0.0369*** (4.0374) | 0.0668*** (4.8806) | 0.0204* (1.6484) | 0.0020 (0.1442) | 0.0257 (1.2666) | -0.0082 (-0.5340) | 0.0871*** (3.4372) | -0.0031 (-0.1091) | |
| Job status: Employee (ref.: Unemployed) | | | | 0.0090 (1.0945) | 0.0053 (0.4266) | -0.0011 (-0.1000) | 0.0127 (1.1451) | 0.0098 (0.5362) | 0.0024 (0.1942) | 0.0509*** (4.3065) | 0.0243*** (2.7784) | |
| Education: Primary (ref.: Tertiary) | -0.2250*** (-5.0939) | -0.0294* (-1.7730) | -0.0506** (-2.5463) | 0.0102 (0.6364) | 0.0093 (0.4462) | -0.0508*** (-3.2056) | -0.0021 (-0.1326) | -0.0024 (-0.1151) | -0.0035 (-0.2087) | -0.0484*** (-2.7722) | -0.0178 (-1.2786) | -0.1240** (-2.0056) |
| Education: Secondary (ref.: Tertiary) | -0.2438*** (-6.7450) | -0.0525*** (-4.5360) | -0.0609*** (-3.7103) | 0.0197 (1.3475) | -0.0015 (-0.0812) | -0.0268** (-2.1886) | -0.0074 (-0.5337) | -0.0232 (-1.2758) | 0.0026 (0.1903) | -0.0325*** (-2.5870) | -0.0158 (-1.4338) | -0.1444*** (-2.8321) |
| Income: Poorest Q1 (ref.: Richest Q5) | -0.2068*** (-4.8270) | -0.0583*** (-2.7037) | -0.0889*** (-4.1044) | -0.0265** (-2.2047) | -0.0155 (-0.9788) | -0.0104 (-0.8426) | -0.0310** (-2.1660) | 0.0145 (0.7063) | -0.0516*** (-3.1775) | -0.0173 (-1.1128) | -0.0162 (-1.3308) | -0.0079 (-0.1130) |
| Income: Middle (Q2+Q3+Q4) (ref.: Richest Q5) | -0.1351*** (-5.2957) | -0.0158 (-1.5575) | -0.0381*** (-2.9340) | -0.0089 (-1.2250) | -0.0114 (-0.9276) | -0.0182* (-1.9030) | -0.0070 (-0.6875) | 0.0142 (0.8511) | -0.0300*** (-2.9682) | -0.0240** (-2.0901) | -0.0191** (-1.9785) | 0.0118 (0.2384) |
| Endogenous factors (ref.: No endogenous factors) | | -0.1812*** (-16.6243) | -0.1649*** (-13.6346) | 0.0030 (0.2948) | -0.0092 (-0.6103) | -0.0047 (-0.3957) | -0.0015 (-0.1500) | -0.0049 (-0.3400) | -0.0231** (-2.3451) | 0.0079 (0.4011) | 0.0198 (1.0671) | 0.0723 (0.7526) |
| Exogenous factors (ref.: No exogenous factors) | | -0.0342* (-1.8990) | -0.0870*** (-4.9283) | -0.0020 (-0.3043) | 0.0096 (0.9316) | -0.0102 (-1.1781) | 0.0221** (2.5046) | -0.0146 (-1.0525) | 0.0213** (2.3295) | 0.0085 (0.8376) | 0.0099 (1.2078) | 0.0412 (1.0988) |
| Informal loan: (ref.: No informal loan) | 0.0333 (1.1859) | -0.0146 (-1.1445) | 0.0146 (1.0521) | 0.0134* (1.7227) | 0.0528*** (4.5596) | 0.0160 (1.6063) | 0.0136 (1.6343) | 0.0248* (1.8864) | 0.0057 (0.5882) | 0.0076 (0.7347) | 0.0316*** (3.8337) | -0.0480 (-1.1978) |
| Country: Egypt (ref.: Tunisia) | 0.1329* (1.8153) | 0.0455** (2.0542) | -0.2341*** (-9.3815) | -0.0230** (-2.1110) | 0.0132 (0.9229) | -0.0059 (-0.5573) | 0.0333*** (2.6263) | -0.0926*** (-4.2342) | 0.0282** (2.1584) | -0.0079 (-0.4635) | -0.0034 (-0.3175) | -0.1047* (-1.8575) |
| Country: Lebanon (ref.: Tunisia) | -0.0230 (-0.6864) | 0.0901*** (6.1866) | -0.1968*** (-11.3417) | -0.0438*** (-3.1853) | 0.0430*** (2.8948) | -0.0261* (-1.9565) | 0.0429*** (3.6497) | -0.0324** (-2.0287) | 0.0103 (0.7988) | 0.0661*** (4.4293) | -0.0103 (-0.8931) | 0.0233 (0.4941) |
| Country: Palestine (ref.: Tunisia) | 0.2201*** (5.0912) | 0.1507*** (11.2666) | -0.1140*** (-6.6984) | -0.0210 (-1.6073) | 0.0319** (1.9865) | -0.0178 (-1.2430) | -0.0118 (-0.5979) | -0.0835*** (-3.4875) | -0.0141 (-0.7505) | -0.0185 (-1.1273) | -0.0291** (-2.1978) | |
| Country: Jordan (ref.: Tunisia) | -0.0789** (-2.4861) | 0.0626*** (4.0299) | -0.1500*** (-8.6159) | 0.0059 (0.7133) | -0.0444** (-2.3209) | -0.0375*** (-2.7728) | -0.0083 (-0.5129) | -0.0329* (-1.9449) | 0.0248** (2.0012) | 0.0246 (1.6243) | -0.0236* (-1.9074) | -0.0708 (-1.2810) |
| Observations | 1,139 | 3,165 | 3,156 | 2,075 | 2,074 | 2,073 | 1,784 | 1,628 | 1,781 | 1,852 | 1,851 | 244 |

Table 7. Estimation of the financial inclusion models on the subsample: "Youths"

Note: Robust z-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Source: Authors from Global Findex (2011, 2014, 2017 and 2021).

| Year | 2011 | | | 2014 | | | 2017 | | | 2021 | | |
|--|-----------------------------|-----------------------------------|----------------------------|------------------------------|-----------------------------------|-------------------|------------------------------|-----------------------------------|-------------------|------------------------------|-----------------------------------|-------------------|
| | (11a) Account holding | (112b) Traditional Services | (113c) ^o Fintec | (141a) Account holding | (142b) Traditional Services | (143c) Fintech | (171a) Account holding | (172b) Traditional services | (173c) Fintech | (211a) Account holding | (212b) Traditional Services | (213c) Fintech |
| Age: Youth (15-34) | -0.1401*** | -0.0393*** | 0.0362*** | -0.0113 | -0.0719*** | 0.0037 | -0.0219 | -0.0338** | 0.0103 | -0.0372*** | -0.0066 | 0.0844*** |
| (ref.: Mature ≥ 35) | (-7.7609) | (-3.1351) | (2.7192) | (-1.0468) | (-4.5877) | (0.3787) | (-1.5801) | (-2.4565) | (0.9222) | (-3.3172) | (-0.7227) | (4.8120) |
| Job status: Self-employed | | | | 0.0227* | 0.1112*** | 0.0186 | 0.0330* | 0.0694*** | -0.0029 | 0.0529** | 0.0331* | 0.0432 |
| (ref.: Unemployed) | | | | (1.9540) | (6.3127) | (1.4542) | (1.9502) | (4.2251) | (-0.1928) | (2.0517) | (1.7779) | (0.9259) |
| Job status: Employee | | | | -0.0153 | -0.0405** | -0.0121 | -0.0004 | 0.0205 | -0.0163 | 0.0585*** | 0.0174 | -0.0134 |
| (ref.: Unemployed) | | | | (-1.3093) | (-2.2517) | (-1.0766) | (-0.0247) | (1.3869) | (-1.2281) | (3.4389) | (1.1565) | (-0.4150) |
| Education: Primary | -0.1408*** | -0.0643*** | -0.0583*** | -0.0100 | 0.0032 | 0.0021 | -0.0129 | 0.0024 | -0.0256 | -0.0485*** | -0.0192 | -0.1939*** |
| (ref.: Tertiary) | (-4.1571) | (-3.2373) | (-2.8058) | (-0.4732) | (0.0966) | (0.0886) | (-0.5284) | (0.0905) | (-1.2263) | (-2.8368) | (-1.2687) | (-6.3171) |
| Education: Secondary | -0.1176*** | -0.0453*** | -0.0598*** | -0.0039 | 0.0225 | 0.0236 | -0.0416* | 0.0038 | -0.0044 | -0.0414*** | -0.0175 | -0.0673*** |
| (ref.: Tertiary) | (-3.9772) | (-2.8633) | (-3.3564) | (-0.2074) | (0.7056) | (1.0758) | (-1.7743) | (0.1512) | (-0.2506) | (-2.9594) | (-1.3389) | (-3.0688) |
| Income: Poorest | -0.1699*** | -0.1124*** | -0.1394*** | -0.0315** | 0.0058 | 0.0036 | -0.0478** | 0.0344* | -0.0289* | 0.0195 | 0.0154 | -0.1236*** |
| Q1 (ref.: Richest Q5) | (-5.6052) | (-4.3982) | (-5.6494) | (-2.0068) | (0.2410) | (0.2289) | (-2.1583) | (1.6609) | (-1.6746) | (1.1894) | (1.1069) | (-4.0485) |
| Income: Middle (Q2+Q3+Q4) | -0.0875*** | -0.0340*** | -0.0614*** | -0.0116 | 0.0119 | 0.0050 | -0.0119 | 0.0187 | -0.0103 | 0.0034 | 0.0049 | -0.0376* |
| (ref.: Richest Q5) | (-4.2973) | (-2.5778) | (-4.4047) | (-1.0540) | (0.6027) | (0.4051) | (-0.6956) | (1.0146) | (-0.7657) | (0.2583) | (0.4217) | (-1.7658) |
| Endogenous factors | | -0.2207*** | -0.2120*** | 0.0386 | 0.0018 | -0.0017 | 0.0273 | 0.0405 | -0.0238 | 0.0211 | 0.0331 | 0.0158 |
| (ref.: No endogenous factors) | | (-14.5629) | (-16.0225) | (1.5808) | (0.0736) | (-0.1174) | (0.9299) | (1.3318) | (-1.3668) | (0.8691) | (1.1877) | (0.4424) |
| Exogenous factors | | -0.0785*** | -0.0656** | -0.0005 | 0.0369** | -0.0012 | 0.0379** | -0.0003 | 0.0296** | 0.0159 | 0.0221** | 0.0004 |
| (ref.: No exogenous factors) | | (-3.3230) | (-2.4466) | (-0.0496) | (2.4107) | (-0.1246) | (2.4662) | (-0.0216) | (2.4196) | (1.5039) | (2.4684) | (0.0206) |
| Informal loan: (ref.: No informal loan) | 0.0207 | -0.0331** | 0.0358** | 0.0145 | 0.0589*** | 0.0149 | 0.0035 | -0.0006 | 0.0023 | 0.0083 | 0.0353*** | 0.0360** |
| | (1.0156) | (-2.1894) | (2.3450) | (1.3264) | (3.5818) | (1.3366) | (0.2389) | (-0.0449) | (0.1929) | (0.8024) | (3.8973) | (2.0752) |
| Country: Egypt | -0.0234 | 0.0307 | -0.2300*** | -0.0132 | 0.0302 | 0.0099 | 0.0624*** | 0.0519** | 0.0622*** | -0.0254 | -0.0304** | -0.2168*** |
| (ref.: Tunisia) | (-0.5671) | (1.2833) | (-8.3427) | (-1.0433) | (1.4748) | (0.7691) | (2.7707) | (2.1885) | (3.1164) | (-1.3856) | (-2.3321) | (-6.4106) |
| Country: Lebanon | -0.0029 | 0.0790*** | -0.1651*** | 0.0009 | 0.0150 | 0.0111 | 0.0135 | 0.0469* | 0.0094 | -0.0346* | -0.0500*** | 0.0190 |
| (ref.: Tunisia) | (-0.1134) | (4.5333) | (-8.6831) | (0.0614) | (0.5715) | (0.7216) | (0.4887) | (1.8476) | (0.3555) | (-1.8717) | (-3.4404) | (0.6486) |
| Country: Palestine | 0.1110*** | 0.1653*** | -0.0549*** | 0.0179 | -0.0784*** | -0.0299* | 0.0193 | 0.0348 | 0.0560*** | 0.0069 | -0.0377*** | -0.0415* |
| (ref.: Tunisia) | (3.4251) | (9.8767) | (-2.9458) | (1.4634) | (-2.7591) | (-1.7592) | (0.6809) | (1.2889) | (2.6547) | (0.4164) | (-2.7777) | (-1.6587) |
| Country: Jordan | -0.0476* | 0.0628*** | -0.1167*** | | 0.0607*** | -0.0074 | 0.0907*** | 0.0712*** | 0.0604*** | 0.0401** | -0.0230* | -0.0202 |
| (ref.: Tunisia) | (-1.9177) | (3.3273) | (-5.8259) | | (2.7363) | (-0.5172) | (3.8452) | (2.8501) | (2.8893) | (2.4717) | (-1.7909) | (-0.8037) |
| Observations | 1,391 | 2,900 | 2,885 | 1,185 | 1,454 | 1,452 | 1,184 | 1,184 | 1,181 | 1,765 | 1,764 | 1,490 |

Table 8. Estimation of the financial inclusion models on the subsample: "Females"

Note: Robust z-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Source: Authors from Global Findex (2011, 2014, 2017 and 2021)..

CONCLUSION AND POLICY IMPLICATIONS

CONCLUSION: AGE AND GENDER ARE KEY IN PROMOTING FINANCIAL INCLUSION

Probit regression models on four pooled samples of households in Egypt, Tunisia, Jordan, Lebanon and Palestine tested four hypotheses on the role of age, gender, and workforce in financial inclusion (access and uses), before and during the pandemic. The estimation of these models on two subsamples of youths and females checks the robustness of hypotheses not addressed elsewhere in the literature on MENA countries. Our results show that the age gap persists in terms of account ownership although young people are using more fintech services during the pandemic. The pandemic worsened the gender gap regarding account ownership without any effect on the use of traditional services. It is consistent with the results of Shihadeh (2022), Cicchiello et al. (2021) and Kazemikhasragh et al. (2022). Workforce status (employee or self-employed) promotes financial inclusion whatever its dimension and the survey period. Although young age improves the use of digital services by women during the pandemic, young women remain less financially included. This result contradicts that of Berguiga & Adair (2024) but confirms that of Ozsuca (2019). Gender improves the financial inclusion (account ownership) of employees during the pandemic. However, when self-employed are only farmers, their gender has no impact on their use of traditional and fintech services during the pandemic.

Being financially included by using digital services, especially for females, requires a higher level of education and high income. The lack of financial inclusion may be due to exogenous factors on the supply side (discrimination from financial institutions) and mostly to endogenous factors on the demand side (self-selection) especially for women, consistent with the result of Damra et al (2023). The 2016 Sahwa youth survey covering 3,027 active individuals aged 15–29 from four MENA countries (Algeria, Morocco, Tunisia and Egypt) provides evidence on gender gaps. Despite an even gender distribution, participation rate is more than twice as high for males (54.5%) as it is for females (23.1%). One quarter of the labour force is unemployed, including a disproportionate share of women. Two in three men and one in three women are employed as informal workers. Gender pay gap is over 20% among both formal workers and informal workers (Gherbi & Adair 2020).

Financial inclusion promotes equality and is conducive to growth (OECD 2022). Although financial inclusion improved for youths and women before the pandemic, gaps remain, especially for less educated youths, who are out of the workforce. Factors of financial exclusion are both exogenous and endogenous, a distinction that must be better investigated in order to remove the barriers.

POLICY IMPLICATIONS: EXTENDING ACHIEVEMENTS AND FOSTERING ON YOUTHS AND FEMALES

OECD (2020) advocates an evidence-based approach, based on the collection and use of anonymised youth-specific financial inclusion data on the demand side. On the supply side, it emphasizes interoperable digital financial ecosystems, securing friendly digital identity systems and leverage technology to promote financial and digital literacy of young people. GIZ implemented the project Promotion of Access to Financial Services for Small and Medium Enterprises on behalf the European Union, aiming to improve access to financial services for small and medium-sized enterprises (SMEs) as well as young entrepreneurs in Egypt. Although this initiative is good news for formal enterprises, it does not address the informal sector, which encapsulates most micro and small enterprises (Adair Ed. 2023).

The World Bank (2023) supported financial inclusion on the supply-side, by working mostly upstream through regulators, public agencies, and service providers. One rare example is an advisory project in Egypt that aimed at enhancing women's economic participation by strengthening legislation prohibiting gender-based discrimination in access to finance. In this respect, Egypt stands as a benchmark that should be duplicated in other MENA countries in order to overcome conservative cultural norms (Perrin & Hyland 2023). Downstream, the implemented policies targeted micro, small, and medium enterprises and very limited attention given to women or other financially excluded groups of individuals. Although Egypt was among the field-based case study countries, methodology was unfortunately based upon interviews with stake holders -government, banks and enterprises, and not upon focus groups, whereas outcomes were not quantified.

On the demand side Global Findex Achievement Variability displays medium and low improvement respectively for access and use, strong and medium improvement respectively for gender equality and digital transactions in Egypt. On the supply side, policymakers and financial institutions including the Central Bank should encourage formal borrowings from households on the demand side by removing the hurdles that refrain people from obtaining loans from financial institutions such as the burdensome loan documentation requirement and the lengthy loan application process, and design a loan guarantee (pooling) mechanism. Policymakers should encourage financial institutions to increase the interest rate on savings to attract formal savers. Policymakers should promote debit or credit card ownership by requiring financial institutions to reduce card fees. Policymakers should also support financial institutions in increasing the supply of ATMs, Place of sale (POS) terminals and other financial access points. They should also develop digitalisation as a complimentary rather than a substitute to fixed financial access points, thus cutting-off costs and enlarging the spectrum of their customers. Policymakers should foster financial literacy programs that teach people about the benefits of account ownership. Banks and Microfinance Institutions would be very instrumental in this respect.

Supply-side disaggregated data (Alonso & Dezso, 2024) should focus on average banking conditions, which discriminate according to age and gender. Policies should address underserved youth categories to make financial inclusion more wide-ranging, which is somehow the role of microfinance. Tailored digital or traditional financial services (WEF 2024) should adjust to youth categories and gender, including a full payment system, enhanced banking infrastructure, appropriate regulations and efficient user protection safeguards. Policies promoting financial inclusion for youth and aiming at closing the gender gap require both supply-side and demand-side disaggregated data, as well as focus groups and experiments-based investigations. They should build upon current achievements. However, financial inclusion is no panacea and cannot substitute for inclusive labour market policies, in as much as income is the main condition fostering financial inclusion.

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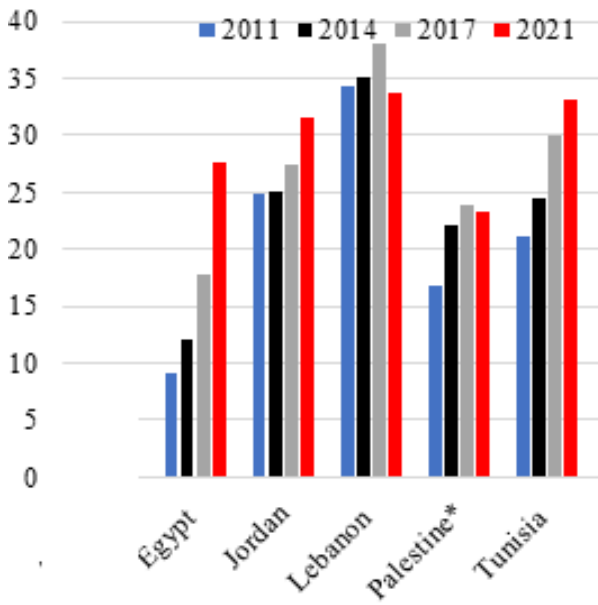
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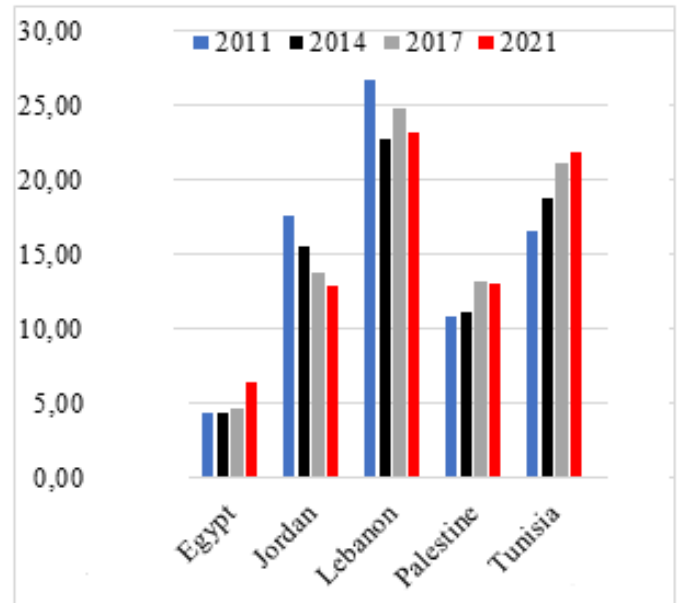
APPENDIX

Figure A1. Banking infrastructure: ATMs



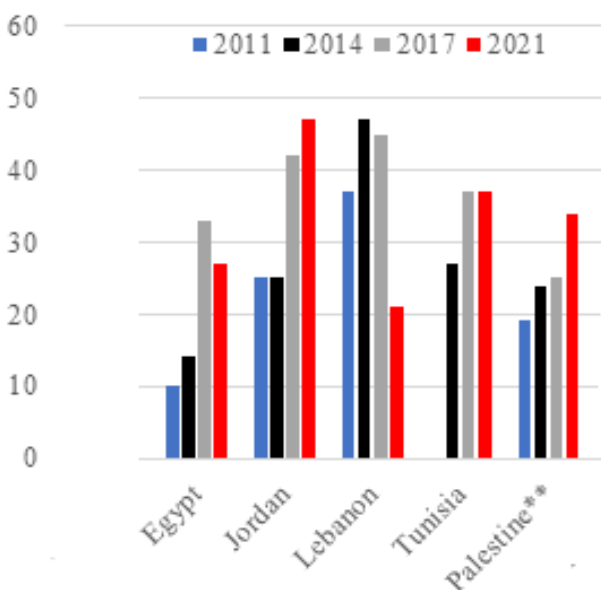
Note: Automated Teller Machines per 100,000 adults.
 * West Bank and Gaza.
Source: Authors from World Bank Development Indicators.

Figure A2. Banking infrastructure: Bank branches



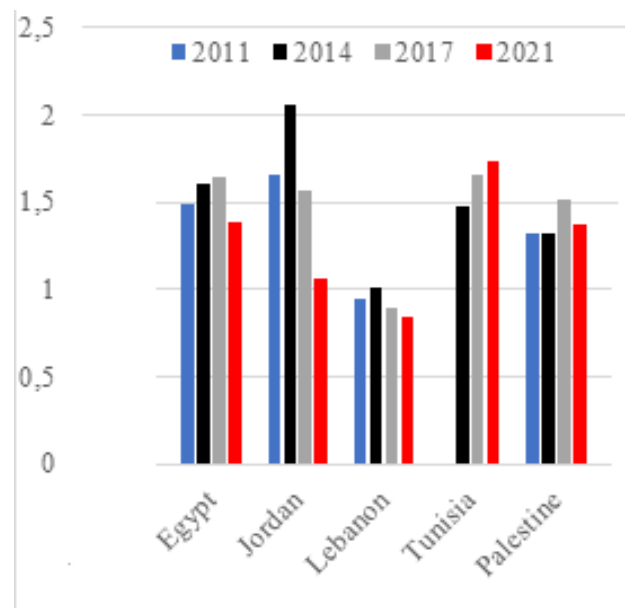
Commercial branches per 100,000 adults

Figure A3. Account ownership in MENA countries*



Note: * % population aged 15+. ** West Bank and Gaza.
Source: Authors from World Bank Development Indicators.

Figure A4. Mobile cellular subscriptions



Ratio subscriptions / Adult population (aged 15+)

Table A1. Dictionary of variables.

| | Name | Type | Definition | Units |
|-------------------------------------|---|-------------|---|----------------------------|
| Financial inclusion measures | <i>Account holding</i> | Discrete | <i>Has an account at a formal financial institution, a mobile money account or both =1 No=0</i> | Dummy (0,1) |
| | <i>Traditional services at financial institution</i> | Discrete | <i>Yes if Saving or Borrowings or both =1 No=0</i> | Dummy (0,1) |
| | <i>Fintech services by financial institution and/o Mobile money service providers</i> | | <i>Withdrawals, check account, pay bills, send or receive money, wages, public or private transfers, Savings and loans via mobile money account and other fintech services=1 No=0</i> | Dummy (0,1) |
| External funding sources | <i>Informal loan</i> | Discrete | <i>Borrowed from family or friends, an informal savings club or private lenders =1 No=0</i> | Dummy (0,1) |
| Household characteristics | <i>Gender</i> | Discrete | <i>Female = 1 Male = 2</i> | Binary (1, 2) |
| | <i>Education level</i> | Discrete | <i>Primary or less= 1 Secondary =2 Tertiary or higher= 3</i> | Ordinal (1, 2, 3) |
| | <i>Income</i> | Discrete | <i>Poorest 1st quintile Q1 = 1 Middle (2nd +3rd+4th quintiles)=2 Richest 5th quintile Q5 = 3</i> | Ordinal (1, 2, 3) |
| | <i>Job status</i> | Discrete | <i>Employee=1 Unemployed = 2 Self-employed = 3</i> | Ordinal (1, 2, 3) |
| | <i>Age</i> | Discrete | <i>Youth 15<Age<35 = 1 Mature: Age >=35 = 0</i> | Dummy (0, 1) |
| Exclusion factors | <i>Exogenous factors</i> | Discrete | <i>Yes, if Exogenous=1 (dominated by lack of money) No=0</i> | Dummy (0, 1) |
| | <i>Endogenous factors</i> | Discrete | <i>Yes if Endogenous =1 (dominate by financial costs too expensive in 2017and 2021, and cannot open an account (in 2014) No=0</i> | Dummy (0, 1) |
| Control variables | <i>Country Dummies</i> | Discrete | <i>Egypt=1 Tunisia=2 Jordan=3 Lebanon=4 Palestine =5</i> | Ordinal (1, 2, 3, 4, 5, 6) |

Source: Authors from the Global Findex database (2011, 2014, 2017 and 2021).



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