



**ENHANCING DECENT JOBS CREATION
AND ACCESS TO FUNDING FOR YOUTH:**

Employment Formalisation and Financial Inclusion
Foster Growth in MENA Countries

Philippe Adair, Imène Berguiga and Adrien Frontenaud



FEMISE CONFERENCE PAPER

SHIFTING PARADIGMS:

Opportunities for a Deeper EU-Mediterranean Integration in a Changing World

**ENHANCING DECENT JOBS CREATION AND ACCESS TO FUNDING FOR YOUTH:
Employment Formalisation and Financial Inclusion Foster Growth in MENA Countries**

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EXECUTIVE SUMMARY

Informal employment (informality) and financial exclusion are linked and prove detrimental to inclusive growth. Informality is characterised by low productivity, which hampers growth and harms the welfare of workers. Financial exclusion slows down household savings and consumption, deteriorating well-being and holding back the growth of micro (informal) businesses due to shortage in funding working capital. Hence, promoting formalisation and financial inclusion is a means of fostering youth economic empowerment, especially for women.

In MENA countries wherein informality exceeds 50 per cent of the labour force, 24 per cent of the population is aged 15-29 and unemployment is the highest worldwide, whereas female participation to the labour force is the lowest. Two youths out of three are financially excluded.

The paper aims at investigating the following threefold issues: Why youths in MENA countries (i) face pervasive informal employment and unemployment, and (ii) lack financial inclusion? and (iii) What are the relevant policies formalising informality and promoting financial inclusion? With respect to inclusive growth for youths, all three issues are linked.

The first section is addressing employment dynamics in terms of transitions between employment, unemployment, and inactivity in Egypt and Jordan for the youth aged 15-34 years old. Job categories include formal/informal wage employment and formal/informal self-employment. Logistic regressions focus upon individual characteristics (gender and education) and industries. Last, it tackles the job quality issue. In Egypt, persistent informal jobs and low occupational mobility remain, whereas shifts towards formality, self-employment, unemployment, and inactivity depend on gender. In Jordan, labour market dynamics is strongly affected by female inactivity.

The second section is dedicated to financial inclusion for youths aged 15-34 from Egypt, Jordan and Tunisia as for 2014, 2017 and 2021. Two probit regressions address financial inclusion regarding account holding and the use of digital services (fintech). According to outcomes from the analysis, prior to the pandemic, young employees and entrepreneurs are financially included. During the pandemic, the financial gender gap declines, while there is no age gap for fintech use. However, gender and countries variables reduce account holding by young entrepreneurs, whereas middle income and low education level lessen fintech use.

In the third section, persistent labour market segmentation is evidenced by income gaps with respect to gender and job status. Policies include those influencing formalisation (growth and education strategies) vs those carrying explicit formalisation objectives, which use transversal drivers (enforcing labour regulations and social protection), targeting categories (micro businesses), bringing workers under the scope of labour regulations (young entrepreneurs, female workers). Schemes include incentives such as social protection, vocational training and financial services that prove effective, together with enforcing the law and regulations. Impact assessment displays rather modest outcomes. The EU may provide assistance in several ways.

Noteworthy is that this note is using both representative panel data sets for Egypt (2012-2018) and Jordan (2010-2016) as well as cross-sectional surveys that are representative for the two aforementioned countries, plus Tunisia, addressing the same youth categories within a similar time-frame over the 2010s.

Keywords: Entrepreneurship; Financial inclusion; Formalisation policies; Gender; Impact assessment; Labour market; Logistic regressions; Occupational mobility; Probit regressions; Segmentation.

RÉSUMÉ

L'emploi informel (informalité) et l'exclusion financière sont liés et nuisent à la croissance inclusive. L'informalité se traduit par une faible productivité, qui entrave la croissance et détériore le bien-être des travailleurs. L'exclusion financière ralentit l'épargne et la consommation des ménages, détériore le bien-être et freine la croissance des microentreprises (informelles) en raison du manque de fonds de roulement. Par conséquent, promouvoir la formalisation et l'inclusion financière sont deux moyens conjoints de favoriser l'autonomisation économique des jeunes, en particulier des femmes.

Dans les pays de la région MENA où l'informalité dépasse 50% de la population active, 24% de la population est âgée de 15 à 29 ans et le chômage est le plus élevé au monde, tandis que la participation des femmes à la population active est la plus faible. Deux jeunes sur trois sont financièrement exclus.

Cette note examine les trois questions suivantes qui sont liées concernant la croissance inclusive des jeunes de la région MENA. Pourquoi les jeunes (i) sont-ils confrontés à l'emploi informel et au chômage omniprésents, et (ii) manquent d'inclusion financière? (iii) Quelles sont les politiques pertinentes pour formaliser l'informalité et promouvoir l'inclusion financière ?

La première section traite de la dynamique de l'emploi en termes de transitions entre emploi, chômage et inactivité en Égypte et en Jordanie des jeunes âgés de 15-34 ans. Les catégories d'emploi comprennent l'emploi salarié formel/informel et l'emploi non-salarié formel/informel. Les régressions logistiques portent sur les caractéristiques individuelles (genre et éducation) et les secteurs ; elles abordent la qualité de l'emploi. En Égypte, les emplois informels et la faible mobilité professionnelle sont persistants, tandis que les mouvements vers la formalité, l'emploi non salarié, le chômage et l'inactivité dépendent du sexe. En Jordanie, la dynamique du marché du travail est fortement affectée par l'inactivité féminine.

La deuxième section est consacrée à l'inclusion financière des jeunes de 15-34 ans en Égypte, Jordanie et Tunisie pour 2014, 2017 et 2021. Deux régressions probit portent sur l'inclusion financière relative à la détention de comptes et l'utilisation de services numériques (fintechs). Selon les résultats, avant la pandémie, les jeunes salariés et les entrepreneurs sont financièrement inclus. Pendant la pandémie, l'écart entre les sexes sur le plan financier diminue, tandis qu'il n'y a pas d'écart d'âge pour l'utilisation des technologies financières. Cependant, les variables de genre et de pays diminuent la détention de comptes par les jeunes entrepreneurs, tandis que les revenus moyens et le faible niveau d'éducation réduisent l'utilisation des fintechs.

Dans la troisième section, la segmentation persistante du marché du travail est mise en évidence par les écarts de revenu concernant le sexe et la situation d'emploi. Les politiques de formalisation recouvrent celles qui exercent une influence (stratégies de croissance et d'éducation) par rapport à celles qui poursuivent des objectifs de formalisation explicites, utilisant des vecteurs transversaux (application des réglementations du travail et protection sociale), ciblant des catégories (microentreprises), et plaçant les travailleurs dans le champ d'application des réglementations du travail (jeunes entrepreneurs, travailleuses). Les dispositifs incluent des incitations relatives à la protection sociale, la formation professionnelle et les services financiers qui s'avèrent efficaces, ainsi que l'application de la loi et de la réglementation. L'évaluation d'impact affiche des résultats plutôt modestes. L'UE peut apporter son aide à divers égards.

Il faut observer que cette note utilise à la fois des ensembles de données de panel représentatifs de l'Égypte (2012-2018) et la Jordanie (2010-2016) ainsi que des enquêtes transversales représentatives des deux pays susmentionnés, et de la Tunisie, qui a visé les mêmes catégories de jeunes dans une période similaire au cours des années 2010.

Mots-clés : entrepreneuriat, évaluation d'impact, genre, inclusion financière, mobilité professionnelle, politiques de formalisation, régressions logistiques, régressions probits, segmentation du marché du travail.

ملخص تنفيذي

تعزيز خلق فرص العمل اللائق وتوفير التمويل للشباب:

إضفاء الطابع الرسمي على التوظيف والشمول المالي لتعزيز النمو في بلدان الشرق الأوسط وشمال أفريقيا

يرتبط العمل غير الرسمي (القطاع غير الرسمي) بالاستبعاد المالي وكلاهما يضران بالنمو الشامل. يتسم القطاع غير الرسمي بانخفاض الإنتاجية، مما يعوق النمو ويضر برفاهية العمال. يؤدي الاستبعاد المالي إلى تباطؤ مدخرات الأسر واستهلاكها، مما يؤدي إلى تدهور رفاهيتها وإعاقة نمو الشركات الصغيرة (غير الرسمية) بسبب النقص في تمويل رأس المال العامل. ومن ثم، فإن تعزيز إضفاء الطابع الرسمي والشمول المالي هو وسيلة لتعزيز التمكين الاقتصادي للشباب، ولا سيما بالنسبة للنساء. في بلدان الشرق الأوسط وشمال أفريقيا، حيث تتجاوز نسبة العمل غير الرسمي 50 في المئة من القوى العاملة، وتتراوح أعمار 24 في المئة من السكان ما بين 15 و 29 عاماً، وتعد البطالة هي الأعلى في جميع أنحاء العالم، في حين أن مشاركة الإناث في القوى العاملة هي الأدنى. اثنان من كل ثلاثة شباب مستبعدون مالياً.

تهدف هذه الورقة إلى دراسة القضايا الثلاثة التالية:

- لماذا يواجه الشباب في بلدان الشرق الأوسط وشمال أفريقيا انتشار العمالة غير الرسمية والبطالة؟
- لماذا يواجه الشباب في بلدان الشرق الأوسط وشمال أفريقيا مشكلة الافتقار إلى الشمول المالي؟
- ما هي السياسات ذات الصلة التي تضيف الطابع الرسمي على القطاع غير الرسمي وتعزز الشمول المالي؟ وفيما يتعلق بالنمو الشامل للشباب، فإن القضايا الثلاث مترابطة.

يتناول القسم الأول من الورقة ديناميكيات التوظيف من حيث التحولات بين التوظيف والبطالة وعدم النشاط في مصر والأردن للشباب الذين تتراوح أعمارهم ما بين 15 و34 عامًا. تشمل فئات الوظائف العمل بأجر رسمي/غير رسمي، والعمل الحر الرسمي/غير الرسمي. تركز الانحدارات اللوجستية على الخصائص الفردية (الجنس والتعليم) والصناعات. وأخيرًا، فهو يعالج مشكلة جودة الوظيفة. في مصر، لا تزل الوظائف غير الرسمية وانخفاض الحراك المهني مشكلة مستمرة، في حين تعتمد التحولات نحو القطاع الرسمي والعمل الحر والبطالة وعدم النشاط على النوع الاجتماعي. وفي الأردن، تتأثر ديناميكيات سوق العمل بشدة بعدم نشاط الإناث.

أما القسم الثاني فهو مخصص للشمول المالي للشباب الذين تتراوح أعمارهم بين 15 و34 عامًا من مصر والأردن وتونس للأعوام 2014 و2017 و2021. ويعالج انحداران للاحتمالات الشمول المالي فيما يتعلق بامتلاك الحسابات واستخدام الخدمات الرقمية (التكنولوجيا المالية). وفقًا لنتائج التحليل، قبل الوباء، تم تضمين الموظفين ورواد الأعمال الشباب ماليًا. خلال انتشار الوباء، تتراجع الفجوة المالية بين الجنسين، في حين لا توجد فجوة عمرية لاستخدام التكنولوجيا المالية. ومع ذلك، فإن متغيرات النوع الاجتماعي والبلدان تقلل من امتلاك رواد الأعمال الشباب للحسابات، في حين أن الدخل المتوسط ومستوى التعليم المنخفض يقللان من استخدام التكنولوجيا المالية.

وفي القسم الثالث، يتضح استمرار تجزئة سوق العمل بسبب فجوات الدخل فيما يتعلق بالجنس والوضع الوظيفي. تشمل السياسات تلك التي تؤثر على إضفاء الطابع الرسمي (استراتيجيات النمو والتعليم) مقابل تلك التي تحمل أهدافًا واضحة لإضفاء الطابع الرسمي، التي تستخدم الدوافع المستعرضة (إنفاذ لوائح العمل والحماية الاجتماعية)، واستهداف الفئات (الشركات الصغيرة)، وإخضاع العمال لنطاق لوائح العمل (رواد الأعمال الشباب، العاملات). وتشمل البرامج حوافز مثل الحماية الاجتماعية والتدريب المهني والخدمات المالية التي تثبت فعاليتها، إلى جانب إنفاذ القانون واللوائح. يعرض تقييم الأثر نتائج متواضعة إلى حد ما. قد يقدم الاتحاد الأوروبي المساعدة بعدة طرق.

الجدير بالذكر أن هذه المذكرة تستخدم مجموعات البيانات التمثيلية لمصر (2012-2018) والأردن (2010-2016) بالإضافة إلى المسوحات المقطعية التي تمثل البلدين المذكورين أعلاه، بالإضافة إلى تونس، التي تتناول نفس فئات الشباب. في إطار زمني مماثل خلال 2010.

الكلمات المفتاحية: ريادة الأعمال؛ الشمول المالي؛ سياسات إضفاء الطابع الرسمي؛ النوع الاجتماعي؛ تقييم الأثر؛ سوق العمل؛ الانحدار اللوجستي، الحراك المهني؛ خط الانحدار الاحتمالي، تراجعات بروببات. التجزئة.

INTRODUCTION

Informal employment and the lack of financial inclusion are linked as regards inclusive growth. The former is characterised by low productivity, which hampers growth and harms the welfare of workers to the extent that they do not receive social protection. The latter is slowing down household savings and consumption, which is also holding back the growth of micro (informal) businesses due to shortage in working capital investment and little turnover. Hence, promoting formalisation and financial inclusion is a means of reducing a waste of resources, enhancing both the labour market and the money market, and fostering youth empowerment, especially for women.

In MENA countries wherein informal employment exceed 50 per cent of the labour force (Charmes 2019), 24 per cent of the population is aged 15-29 and unemployment is the highest worldwide, whereas female participation to the labour market is the lowest (OECD 2022). In addition, two out of three youth remain financially excluded.

The paper aims at investigating the following threefold issues: Why youths in MENA countries (i) face pervasive informal employment and unemployment (the job status issue), and (ii) lack financial inclusion (the financial inclusion issue)? (iii) What are the relevant policies formalising informality and promoting financial inclusion? These issues are linked with regard to inclusive growth for youths in MENA countries

Hereafter, we adopt a job-based concept of informality, i.e. informal employment, consisting of 'all remunerative work (i.e., both self-employment and wage employment) that is not registered, regulated or protected by existing legal or regulatory frameworks, as well as non-remunerative work undertaken in an income-producing enterprise' (ILO, 2019).

Beyond simple dualism, the formal/informal divide is segmented into six categories according to work status and earnings: Formal self-employed, Upper-tier informal self-employed and Lower-tier informal self-employed vs Formal wage-employees, Upper-tier informal wage-employees and Lower-tier informal wage-employees (Fields et al, 2023). In addition, Flabbi & Tejada (2023) document why informal employment should be sharply disentangled, in order to avoid conflating (informal) self-employment with (informal) wage employment.

Two competing explanations address why people are working informally. The free-choice approach view is that all workers can choose whether to work formally, depending on comparative advantage, preferences for independent work, and avoidance of payroll taxes and regulations. The segmented labour approach contends that the number of wage-employment jobs is rationed relative to the size of the labour force.

Two approaches oppose one another as regards the distinction between upper-tier and lower-tier informal work. The first one takes upper-tier informal employment as being 'voluntary', workers choosing jobs that offer more independence and better earnings and working conditions as compared to working

in the formal sector. In contrast, lower-tier informal work is 'involuntary' and employment of last resort, when individuals cannot find employment in formal or upper-tier informal work (Fields, 2023).

There is a straightforward link between informality, which is stamped by little earnings due to a lack in human capital, and financial exclusion defined as the absence of account holding and use of financial services. Hence, money transactions are mostly cash transfers fueled with wages and sales that result to a large extent from informal employment. As a result, transactions do not transform easily into savings and loans as it would be the case with financial inclusion, hindering accumulation. Informality and financial exclusion keep youths within a poverty trap.

Official transactions such as receipts and payments as well as savings and credit operations, including remittances and transfers, are channelled within the banking system and financial services companies. Informal transactions deal with the same operations using only cash, which proves uneasy to track. Taming the use of cash or substituting it with financial technologies is the current challenge of promoting inclusion.

The segmentation of financing devices is characterised by the coexistence of an official banking system and informal or semi-official financing vehicles.

The official banking system combines high transaction costs and low (capped) interest rates, which induce a default risk from the borrower. Informal funding combines weaker transaction costs and higher interest rates, thus minimising the default risk. It includes third party loans (family and friends, but also moneylenders such as pawnshops), supplier's credit, and down payments. Micro Credit Institutions (MCIs) are semi-official or quasi-banking financing vehicles, albeit informal as regards their lending practices, which are inspired by credit unions or ROSCAs (Rotative Savings and Credit Associations). Direct financing concerns personal savings, if any and crowdfunding.

Persistent labour market segmentation is evidenced by income gaps with respect to gender and job status patterns. Financial exclusion remains a strong concern for youths in the Middle East and North Africa (MENA) countries.

Issues and outcomes of formalisation policies are discussed regarding targets (businesses versus workers), 'carrot and stick' policies (incentives and constraints), short and long run strategies and action levers to assess the rather modest impact of policies.

The impact assessment before and during the pandemic address policies providing: (i) skills training in Tunisia (ii) support for enterprise development including microfinance services. (iii) employment services on employment outcomes in Jordan. (iv) subsidised employment in Jordan and Tunisia on sustainable jobs creation. In addition, the impact of microcredit upon microenterprise in Egypt is examined. Promoting social and solidarity enterprises, and extending microfinance to informal enterprises, are promising policies for fostering both decent jobs and financial inclusion.

MOTIVATION

In MENA countries there are strong patterns with respect to large informal employment exceeding half the labour force, a quarter of which is aged 15-29 and strongly affected by informality and unemployment is the highest worldwide, whereas female participation to the labour market is the lowest.

We address the following issue linking the patterns of financial inclusion and job status: Why youths in MENA countries lack financial inclusion and what is the role of job status, especially informal employment and unemployment? In this respect, what are the relevant policies formalising informality and promoting financial inclusion?

RESEARCH METHODOLOGY

We focus on the youth age group 15-34 years old, which faces both pervasive job informality (not affiliated with Social Security) and financial exclusion (absence of account holding and/or access to credit). Hence, we address both the labour market, in terms of employment status, and the money market, in terms of account holding and services using, including fintech.

We provide a dynamic overview of the dual labour market across three MENA countries (Egypt, Jordan and Tunisia) in the pre-COVID-19 period spanning throughout the 2010 decade. We decompose jobs into three categories: formal jobs in the public sector and formal jobs in the private sector, on the one hand, and informal jobs, on the other hand. We differentiate employees from self-employed, the latter being mostly entrepreneurs and to a lesser extent family helps. Youth employment refers to the population aged 15 to 34 years old engaged in an economic activity.

On the one hand, the comparison of these MENA non-oil exporting countries is consistent for several reasons. (i) They enjoy a similar GDP per capita in 2019 (2017 PPA) accounting for \$11,781 in Egypt, \$9,534.661 in Jordan and \$11,114 in Tunisia according to the World Bank. (ii) The sample size of panel datasets is roughly the same for Egypt and Jordan (i.e. over 10,000 individuals each year). (iii) The time span for observation in these two countries amounts to six years in the same decade prior to the outbreak of the pandemic. (iv) Informal employment has been on rise since the past decade in Egypt, Jordan and Tunisia, amounting respectively to 59%, 50.1% and 30.3% of non-agriculture total employed population, according to 2021 Labour Force Surveys (ILOSTAT). On the other hand, the context is different in that Tunisia and Egypt experienced strong social unrest and political upheaval in 2011, while Jordan demonstrated resilience in maintaining political stability.

First of all, it is worth noticing that panel data has been scarcely used in order to capture labour market dualism, and those three countries are the only one in the MENA region wherein such databases (Integrated Labour Market Panel Surveys -ILMPS) are available over a time span extending from 2010 to 2018. These panel surveys were designed by the International Labour Organisation -ILO and the Economic Research Forum -ERF from data collected by national statistical offices. We focus on workers' occupational mobility (transition matrices) regarding prior job status vs. current job status, age cohort, gender... Distinction is made between wage earners and non-wage earners that highlights the income gap. The probability of being in informal employment is estimated by applying logistic regressions upon large size samples (over 10,000 workers).

Second, we study the determinants of the financial inclusion of young labour force, and analyse their differences according to their employment status (employees, self-employed and unemployed) prior and during the COVID-19 pandemic. We select our samples from the Global Findex Database in 2014, 2017 and 2021 as for three MENA countries (Egypt, Jordan and Tunisia): young people aged 15-34

account respectively for 483 (2014), 1,354 (2017) and 1,282 in 2021. The 2017 sample includes 97 young entrepreneurs compared with 91 in 2014.

A probit regression model determines the factors influencing financial inclusion, first defined as account holding to which we add the effective use of financial services, fintech especially, in the last 12 months.

The methodology is threefold and is structured as follows:

Section 1 addresses youth employment dynamics (aged 15-34 years old), with representative panel data surveys for Egypt (2012-2018) and Jordan (2010-2016), analysing transition matrices in and from formal/informal labour market segments. Logistic regressions focus upon individual characteristics (gender and education) and industries. The job quality index displays increasing poor quality for informal jobs and specific gender patterns in Egypt and Jordan. Tunisia is not included in this analysis for transition due to lack of panel data.

Section 2 addresses the financial inclusion determinants of MENA youths and the role of job status in this respect before and during the pandemic. Three household samples (2014, 2017 and 2021) include youths aged 15-34 from Egypt, Jordan and Tunisia. According to probit regressions, young male employees and entrepreneurs are financially included (account holding and fintech use) before the pandemic, while account holding is limited for female young entrepreneurs, and middle income together with lack of human capital (i.e., low education level) lessen fintech use. During the pandemic, financial inclusion shrinks the gender gap, while fintech use bears no age gap.

Section 3 recalls persistent labour market segmentation, documented by substantial income gaps in North Africa with respect to the formal/informal divide, gender and job status. It compares macro policies influencing formalisation and explicit formalisation policies enforcing labour regulations and social protection, targeting micro businesses, bringing young entrepreneurs and female workers under the scope of labour regulations. Schemes include incentives such as social protection, training and financial services that prove effective, alongside law and regulations enforcement. Impact assessment displays rather modest outcomes. Several ways whereby the EU may provide assistance are suggested.

LABOUR MARKET DUALISM, TRANSITIONS AND JOB QUALITY: DECENT JOBS FOR YOUTH

Section 1 hereafter addresses youth employment dynamics (aged 15-34 years old), using representative panel data surveys for Egypt (2012-2018) and Jordan (2010-2016). Transition matrices analyse changes between employment statuses, unemployment, and inactivity. Job categories include formal/informal wage employment and formal/informal self-employment. Logistic regressions focus upon individual characteristics (gender and education) and industries. Tackling the job quality issue in Egypt, there is persistent informal employment and low occupational mobility, whereas gender drives shifts towards formality, self-employment, unemployment, and inactivity. In Jordan, female inactivity shapes labour market dynamics.

ISSUE, DATA SOURCE, SAMPLING AND METHODOLOGY

Over the past decade, the labour market in Egypt has undergone significant changes, as highlighted by the social demands of the 2011 upheaval. Among these changes, the lack of job security and the low level of associated social coverage have particularly affected youth. We provide an overview of the dual labour market across two MENA countries (Egypt and Jordan). We decompose jobs statuses into four categories: formal jobs for employees (in the public sector and in the private sector), formal self-employment, informal wage employment and informal self-employment. Youth employment refers to the population aged 15 to 29, and 30-34 years old engaged in an economic activity.

According to the guidelines established in 2003, informal jobs are identified with the characteristics of the occupied job. We restrict informal jobs as those identified solely by the criterion of non-affiliation with social security.

We use microdata from the Egypt Labor Market Survey (in years 2012 and 2018; OAMDI, 2019) and from the Jordan Labor Market Survey (in years 2010 and 2016; OAMDI, 2018).¹ Despite attrition, these surveys are nationally representative and provide information on employment according to job status (wage employees vs self-employed and formal vs. informal sector), as well as on the individual and professional characteristics of workers: age, gender, education level, marital status and geographical location (Assaad et al, 2021).

¹ As aforementioned, these panel data surveys were designed by the ILO and ERF. Tunisia is not included in the analysis of transition matrices and probit regressions. Actually, there is no panel data available for Tunisia as for Egypt and Jordan. Tunisian data are encapsulated in a lagged panel (one wave), which contains its own set of approximations. Hence, for a clearer analysis, it was preferable not to take Tunisia into account and avoid misleading readers.

We focus on workers' occupational mobility regarding prior job status vs. current job status, age cohort, gender... Distinction between employees (wage earners) and self-employed (non-wage earners) highlights income inequality.

We exclude agriculture because, as highlighted by international experts from the Delhi Group on Informal Sector Statistics (ILO, 2013), and as observed in other Mediterranean countries, developments occurring in this sector may conceal those specific to informal employment.

A multidimensional approach allows for the completion of the descriptive analysis by mitigating composition effects: probabilities of occupying formal wage employment, informal wage employment, formal self-employment or informal self-employment are modelled to identify, holding all other factors constant, the effects of each individual or occupational characteristic (multinomial logit).

We examine how job quality has evolved in these countries, considering that informal employment is a variable of poor job quality (Deguilhem & Frontenaud, 2016).

The eruption of the January 25th, 2011 revolution highlighted the fact that the prospects in the job market were far from favourable for a substantial segment of the population. Although the unemployment rate remained stable, it did not constitute an adequate indicator, as observed by Krafft & Assaad (2014) to assess the overall state of the labour market. Indeed, factors such as the quality of jobs, their stability, and the extent of social protection they provided proved more appropriate for anticipating their impact on individuals' career aspirations.

We first sketch an overview of employment in Egypt between 2012 and 2018, with a focus on the evolution of informal employment, using microeconomic data available for 2012 and 2018, a period encompassing both post-2011 upheaval and pre-COVID 19 developments (Krafft et al, 2021).

Multiple characteristics are examined to determine whether these evolutions affect especially youth. The year 2012 (2.2%) was marked by the aftermath of the 2008 financial crisis, which led to an economic slowdown starting in 2009 (4.7%), as well as the repercussions of the 2011 upheaval, which caused a severe growth decline (1.8%).

Jordan, a small nation located in the Middle East, faces unique economic challenges. Despite its limited natural resources, the country has made significant progress: In 2016, real gross domestic product (GDP) reached USD 95.9 billion (PPP constant 2017 international \$) with a growth rate of 2% (World Bank, 2023). However, the economy heavily relies on external financial inflows, including foreign aid, foreign debt, and remittances from overseas workers.

Jordan continues to face socio-economic challenges, particularly with regard to poverty and unemployment. A significant portion of the population lives below the poverty line, and the country's unemployment rate remains persistently high, averaging around 18% in 2017. Youth and women are particularly affected, with unemployment rates surpassing the national average.

TRANSITIONS IN AND FROM LABOUR MARKET SEGMENTS AND OCCUPATIONAL MOBILITY

We analyse transitions between different types of employment, unemployment, and inactivity using transition matrices separately for men and women for different periods: 2012-2018 (Egypt), 2010-2016 (Jordan). The issues of sample attrition, related to the establishment of longitudinal data, have been addressed to ensure national representativeness of the panel.

We split jobs into four categories: formal wage employment, informal wage employment, formal self-employment or informal self-employment. Employed population aged 15-34 is engaged in economic market activities.

Following the guidelines established in 2003 during the seventeenth International Conference of Labour Statisticians (ILO, 2003) to define informal employment, informal jobs are identified according to the characteristics of the occupied jobs. The lack of affiliation with social security together with the absence of employment contracts are defining features of informal employment. However, we dropped employment contracts and defined informal jobs according only to non-affiliation with social security. In Egypt, social security affiliation covers various situations. Although all workers are required to be affiliated, except for temporary, occasional, or foreign workers, the obligations and guarantees are subject to vary depending on their employment status or the size of the company they work for. For example, self-employed workers must contribute to retirement at their discretion but not to health insurance (Selwaness, 2012). Small and medium-sized enterprises (SMEs) are also not obliged to contribute to employees' health insurance. Although larger companies are required to contribute, they can restrict to 1% of their payroll and join alternative insurance plans (World Bank, 2006). Consequently, although they are affiliated with social security, some workers may not be covered by health insurance. As emphasized by the Delhi Group on Informal Sector Statistics (ILO, 2010), the agricultural sector is excluded, over 90% being composed of informal jobs.

The transitions between different states in the labour market are calculated from the panel derived from the two databases of the Economic Research Forum (ERF). The weights used are those that cover the two years and ensure, for each year, the maintenance of national representativeness despite attrition (Assaad & Krafft, 2013). For transitions between 2012 and 2018 in Egypt, excluding employment in agriculture, individuals aged 15-34 years in 2018 were selected.

The analysis of transitions between different job statuses (formal wage employment, informal wage employment, formal self-employment or informal self-employment), unemployment, and inactivity during 2012-2018 (Table 1) in Egypt reveals that around 61% of individuals initially in formal or informal wage employment remained in those categories. For women, 45.2% in informal wage employment in 2012 exited the labour force by 2018. More women than men kept formal wage employment, offering better security. Notably, within our panel of individuals aged 15 to 34, no women are in formal self-employment.

Table 1. Transitions between jobs, unemployment, and inactivity: Individuals aged 15-34 in Egypt (in %)

2012 ↓ 2018 →	Formal wage employee	Informal wage employee	Formal self-employed	Informal self-employed	Unemployment	Out of the labour force	Total
Formal wage employee	60.5	29.8	0.2	2.9	0.8	5.8	100
Informal wage employee	14.8	61.1	1.2	9.4	4.4	9.1	100
Formal self-employed	12.5	37.5	12.5	28.1	0	9.4	100
Informal self-employed	7.1	41.1	2.8	34	3.7	11.3	100
Unemployment	7.4	25.8	0.6	4.9	16.4	44.9	100
Out of the labour force	3	13.8	0.2	3.1	7.7	72.2	100
Total	7.8	21.8	0.5	5.0	7.2	57.7	100
2012 ↓ MEN 2018 →							
Formal wage employee	56.6	37.6	0.3	4.4	0.3	0.8	100
Informal wage employee	13.8	65.1	1.3	10.2	3.8	5.8	100
Formal self-employed	12.5	37.5	12.5	28.1	0	9.4	100
Informal self-employed	7.3	46.7	3	36.1	3.6	3.3	100
Unemployment	15.2	52.9	1	11	9.4	10.5	100
Out of the labour force	4.9	27.6	0.4	4.9	6.2	56	100
Total	10.9	38.4	0.8	8.0	5.3	36.6	100
2012 ↓ WOMEN 2018 →							
Formal wage employee	67.8	15.2	0	0	1.9	15.1	100
Informal wage employee	26.1	17.4	0	0.9	10.4	45.2	100
Formal self-employed	0	0	0	0	0	0	100
Informal self-employed	5.9	7.8	2	21.6	3.9	58.8	100
Unemployment	2.8	9.7	0.4	1.2	20.6	65.3	100
Out of the labour force	1.6	3.8	0.1	1.9	8.7	83.9	100
Total	4.7	4.9	0.1	1.9	9.2	79.2	100

Note: For transitions between 2012 and 2018, we selected 11,133 individuals aged 15-34 in 2018 and we excluded agricultural employment. The sample comprises 22,266 observations.

Source: Authors' own calculations using the Egypt Labor Market Panel Survey (ELMPS12 & ELMPS18).

Over 53% of men aged 15-34 unemployed in 2012 transitioned to informal wage employment in 2018, showing a lack of secure employment paths whereas most women who were respectively unemployed and out of the labour force in 2012 remain in these situations in 2018.

These findings underscore the complex dynamics of youth employment in Egypt. Informal jobs persist, but shifts to formal jobs, self-employment, unemployment, and inactivity highlight a changing job landscape.

Table 2. Transitions between jobs, unemployment, and inactivity: Individuals aged 15-34 in Jordan (in %)

2010 ↓ 2016 →	Formal wage employee	Informal wage employee	Formal self-employed	Informal self-employed	Unemployment	Out of the labour force	Total
Formal wage employee	64.2	18.6	0.2	2.2	5	10	100
Informal wage employee	20.4	37.9	0.5	15.2	11.8	14.2	100
Formal self-employed	0	0	0	0	0	0	100
Informal self-employed	22.6	17	0	26.4	13.2	20.8	100
Unemployment	26.4	17.7	0	6.2	29.2	20.5	100
Total	18.7	9.7	0.1	2.1	12.7	56.7	100
2010 ↓ MEN 2016 →							
Formal wage employee	64.8	20.5	0.2	2.3	4.2	8	100
Informal wage employee	20.6	40.8	0.5	17.4	9.8	10.9	100
Formal self-employed	0	0	0	0	0	0	100
Informal self-employed	22.9	18.7	0	29.2	14.6	14.6	100
Unemployment	31	25.7	0	8.2	23.4	11.7	100
Out of the labour force	19.9	12.3	0.1	1.9	13.9	51.9	100
Total	28.2	16.2	0.1	3.6	12.6	39.3	100
2010 ↓ WOMEN 2016 →							
Formal wage employee	60.7	6.7	0	1.2	10.1	21.3	100
Informal wage employee	18.5	18.5	0	0	25.9	37.1	100
Formal self-employed	0	0	0	0	0	0	100
Informal self-employed	20	0	0	0	0	80	100
Unemployment	19.7	6	0	3.4	37.6	33.3	100

In Jordan, the transition matrix (Table 2) displays labour market dynamics from 2010 to 2016. Our findings show that nearly 81% of women outside the labour force category in 2010 remained inactive in 2016. For men, this figure is around 52%. The majority of individuals aged 15-34 (64.2%) remained in formal wage employment indicating stable formal employment. A smaller proportion (18.6%) shifted to informal wage employment. A notable share (37.9%) stayed in informal wage employment, suggesting persistent informal jobs.

Around 20.4% transitioned from informal wage to formal wage employment. A substantial share (26.4%) shifted to informal self-employment, experiencing an increasing trend. Individuals unemployed in 2010 moved to formal wage employment (26.4%) over informal wage employment (17.7%) or informal self-employment (6.2%). A similar trend starts from “out of the labour force” category. A significant share (67.3%) of individuals aged 15-34 remained out of the labour force.

MODELLING THE PROBABILITY OF OCCUPATIONAL STATUS: LOGISTIC REGRESSIONS

A multidimensional approach complements the transition matrices by accounting for compositional effects: the probabilities of occupying formal wage, informal wage, formal and informal self-employment are modelled to identify, holding everything else constant, the effects of each individual or occupational characteristic. These correspond to age, education level, and gender for individual characteristics, and sector of activity for occupational characteristics. The estimations are conducted as cross-sections for each of the years 2012 and 2018 as for Egypt, 2010 and 2016 as for Jordan, excluding agriculture. The probabilities are modelled using a logistic distribution cumulative function. The logistic regression model is multinomial, as the dependent variable has four categories.

Noteworthy is that the employment structure differs between Egypt and Jordan for individuals aged 15 to 34. In Jordan, for the years 2010 and 2016, there is an absence of formal self-employed. This is why there are no reported results for this category in Table 4.

The results of these estimations largely align with the insights provided by the transition matrices.

Thus, for all two years (2012 and 2018 in Egypt), the probability of engaging in informal employment (wage and independent) is higher for the youth of 15-24 years old and individuals with limited education (primary school). When working in sectors such as mining, industry, manufacturing and utilities (industry sector) the probability of engaging in informal wage employment is notably higher in Egypt and Jordan (2010 & 2016) than working in services sectors (commerce, services, transport & communication, finance & business services, public administration and other services).

Regarding the estimations of the probability of having formal wage employment, the results show that for all years in Egypt, the likelihood of holding a formal wage employment increases with age; it is higher for those who have completed at least secondary education compared to those with limited education. It is also stronger for individuals engaged in services compared to the industry. We observe a similar trend for formal self-employment, except that this time men have a higher probability of being in this job category.

Individuals aged 15-24 in Jordan exhibit a lower likelihood of being formal wage employees and a significantly higher likelihood of being informal wage employees compared to the reference group (25-34) but the coefficients are not statistically significant. Women show a slightly higher likelihood of being formal wage employees and a slightly lower likelihood of being informal wage employees compared to men. Those with primary education demonstrate a higher likelihood of being formal wage employees and a lower likelihood of being informal wage employees compared to illiterate individuals. As education level rises to secondary and tertiary levels, these effects continue to increase, underlining the significance of education in accessing formal employment but the coefficients are not significant.

Urban individuals significantly face a lower likelihood of being formal wage employees and a higher likelihood of being informal wage employees compared to rural individuals in 2010 and 2016. These effects suggest urban-rural disparities in formal employment access.

Being in the services sector significantly increases the likelihood of being a formal wage employee and significantly decreases the likelihood of being an informal wage employee, compared to the reference category (industry manufacturing). These results underscore the sectoral differences in formal employment opportunities

The comparison of Egypt and Jordan displays two salient patterns. First, Persistent labour market segmentation and low mobility affect formal vs informal workers. The former do not give up their favourable status, whereas the latter do not easily overcome barriers to entry into formal employment. Second, young male workers are less mobile than females, the latter eventually exiting the labour force.

Table 3. Probability of formal and informal wage, formal and informal self-employment: Average marginal effects in Egypt (2012 and 2018)

	2012				2018				
	Formal wage employee	Informal wage employee	Formal self-employed	Informal self-employed	Formal wage employee	Informal wage employee	Formal self-employed	Informal self-employed	
Age (ref. : 25-34) 15-24	-0.186***	0.196***	-0.017***	0.008	-0.177***	0.193***	-0.011*	-0.005	
Sex (ref. : Men) Women	0.154***	-0.117***	-0.038***	0.001	0.110***	-0.137***	-0.012**	0.041***	
Education (ref. : Illiterate)									
Primary education	0.081**	-0.059**	0.018*	-0.041**	0.057*	-0.028	0.002	-0.030**	
Secondary education	0.271**	-0.180***	0.01	-0.101***	0.208***	-0.127***	0.001	-0.082***	
Tertiary education	0.431***	-0.278***	0.012	-0.166***	0.334***	-0.175***	0.005	-0.164***	
Urban (ref. : Rural)	0.036***	-0.016	0.002	-0.022**	0.017*	0.027**	-0.003	-0.041***	
Industry (ref. : Manufacturing)									
Services	0.026**	-0.185***	0.032***	0.127***	0.012	-0.186***	0.023***	0.150***	
Observations	5,812				6,037				

Notes: Outside agriculture. *** (p<0.01), ** (p<0.05), * (p<0.1).

Source: Authors' own calculations.

Table 4. Probability of formal and informal wage, formal and informal self-employment: Average marginal effects in Jordan (2010 and 2016)

	2010				2016			
	Formal wage employee	Informal wage employee	Formal self-employed	Informal self-employed	Formal wage employee	Informal wage employee	Formal self-employed	Informal self-employed
Age (ref. : 25-34) 15-24	-0.057	0.106		-0.040	-0.017	0.114		-0.040
Sex (ref. : Men) Women	0.061	-0.020		-0.032	0.120	-0.030		-0.035
Education (ref. : Illiterate)								
Primary education	0.122	-0.123		-0.008	0.173	-0.219		-0.011
Secondary education	0.256	-0.219		-0.046	0.261	-0.247		-0.069
Tertiary education	0.377	-0.307		-0.070	0.416	-0.378		-0.095
Urban (ref.: Rural)	-0.203***	0.178***		0.026**	-0.098***	0.043**		0.052***
Industry (ref. : Manufacturing)								
Services	0.166***	-0.165***		0.000	0.146***	-0.125***		-0.016
Observations	3,139				3,259			

Notes: Outside agriculture. *** (p<0.01), ** (p<0.05), * (p<0.1).

Source: Authors' own calculations.

JOB QUALITY MEASUREMENT: A MULTIDIMENSIONAL INDEX

Dimensions of job quality. Due to limited data availability on the quality of employment for self-employed workers in the labour market surveys conducted by the Economic Research Forum (ERF), the focus was directed towards wage employment. Taking into account these considerations, the multidimensional employment quality index for wage employment encompasses a standardized set of eight indicators distributed across three dimensions.

Table 5. The multidimensional employment quality index in Egypt and Jordan

Dimensions	Indicator (weight)	Suffering from deprivations if...
Benefits	Health insurance (1/3)	The job does not provide health insurance
	Annual paid leave (1/3)	The job does not offer paid holiday leave
	Paid sick leave (1/3)	The job does not offer paid sick leave
Stability	Tenure (1/2)	The wage employee aged 15-24 has been in its job for less than a year. The wage employee aged 25-34 has been in its job for less than three years.
	Permanent employment (1/2)	The job is temporary, not permanent
Working conditions	Social security (1/3)	The job is not associated with any type of social security
	Written contract (1/3)	The job is not bound by written contract
	Excessive working hours (1/3)	The wage employee exceed more than 48 weekly hours in his main job

Source: Authors from the Egypt Labor Market Panel Survey (ELMPS) and the Jordan Labor Market Panel Survey (JLMPS).

Job benefits encompass non-wage forms of compensation, including paid leave, health insurance. In today's labour market, employers attract workers by offering non-wage compensation alongside regular wages or salaries. Moreover, job benefits serve as a form of insurance against temporary income loss, such as unemployment, or unexpected expenses like healthcare costs.

This study also considers observed job tenure as another suitable indicator of stability, in as much as workers who have exerting the same job for several years are likely to continue in that job for a longer period. It is also a component of the permanency in employment indicator.

The dimension of working conditions includes a written contract, social security contributions and excessive work hours. Excessive work hours are defined by the International Labour Organization (ILO) as working over 48 hours per week.

Results from Multidimensional Employment Quality Index

Hereafter, we address multidimensional and one-dimensional measurements of employment quality in Egypt (2012-2018) and Jordan (2010-2016), using the Alkire-Foster method (See Box 1).

Box 1. The Alkire-Foster method

The Alkire-Foster (2011) theoretical framework, originally developed for measuring multidimensional poverty, is chosen for the quality of employment. This method assigns indicators to each dimension and defines deprivation cut-offs (threshold levels of each indicator).

Prieto et al (2022) summarize the construction of this index as follows:

First, the methodology applies a vector of deprivation cut-offs (denoted z) to identify those workers who are deprived in a given dimension. It then defines a counting vector $c_{it} = \sum_{j=1}^d w_j I(y_{ij} < z_j)$ as the weighted sum of labour deficiencies experienced by the worker i , where I_{ij} is a variable that takes the value 1 if the worker achievement y_{ij} is less than z_j in dimension j and 0 if not. w_j is the weight assigned to each dimension and d is the total number of deprivations analysed.

In a second step, it sets a multidimensional threshold (denoted k) to classify workers with low employment quality. Incidence of low employment quality is $H = \frac{q}{n}$, where $q = \sum_{i=1}^n I(c_i \geq k)$ is the number of workers in multidimensionally precarious employment quality and n is the total of the population. The intensity or the percentage of deprivations of the average low-quality employment, is defined as $A(k) = \frac{\sum_{i=1}^n c_i(k)}{\sum_{i=1}^n I(c_i \geq k)}$. The multidimensional employment quality adjusted ratio is $M_{ot}(k) = \frac{\sum_{i=1}^n c_i(k)}{n}$.

Tables 6 and 7 show low-quality employment incidence and intensity for Egypt and Jordan. They display values for each low-quality employment threshold (k), for men and women aged 15-34. In Table 6, Egyptian employed men experience lowest quality over 2012-2018 for all. In 2012, 66.7% of Egyptian wage employees aged 15-34 had one deprivation; 77.5% had at least one in 2018. Similar trends apply to two or three deprivations (H_2 and H_3 , respectively).

Intensity for one deprivation (A_1) was 70.2 in 2012, rising to 71.4% in 2018. Thus, $M_{ot}(k)$ increased from 0.47 in 2012 to 0.55 in 2018, translating to a deterioration in job quality.

Table 6. Aggregated Results for Egypt: Headcount Ratio $H(k)$, Average Intensity $A(k)$ and Adjusted Headcount Ratio $M_{ot}(k)$ between 2012-2018 for wage employees

Indicators	2012			2018		
	Total	Men	Women	Total	Men	Women
H_1	66.7%	73.1%	32.0%	77.5%	83.0%	47.8%
A_1	70.2%	70.7%	63.7%	71.4%	71.7%	69.3%
M_{1t}	0.47	0.52	0.20	0.55	0.59	0.33
H_2	50.3%	56.5%	17.4%	59.7%	64.8%	31.9%
A_2	76.6%	76.6%	77.6%	77.7%	77.6%	79.4%
M_{2t}	0.38	0.43	0.13	0.46	0.50	0.25
H_3	2.2%	2.4%	0.9%	4.2%	4.5%	3.0%
A_3	100%	100%	100%	100%	100%	100%
M_{3t}	0.02	0.02	0.09	0.04	0.04	0.03

Note: Agriculture excluded. Individuals aged 15-34.
Source: Authors' own calculations.

The index for two or three deprivations increased between 2012 and 2018, displaying worse quality of employment.

Similar trends to those in Egypt are observed in Jordan, although the decline in employment quality over a six-year period is less significant (refer to Table 7). In 2010, 34.2% of the wage employees experienced at least one deprivation with men at 36.5% and women at 24.1%. By 2016, H_1 had risen to 36.1% for the total population, 36.5% for men, and 34.1% for women.

The intensity of low-quality employment for wage employees aged 15-34 in Jordan who experienced at least one deprivation in their job (A_1) was 60% in 2010 with higher rates among men (61.5%) compared to women (53.2%). This intensity increased to 61.6% by 2016. By 2016, these rates increased to 61.6% for the total population.

Thus, $M_{ot}(k)$ increased from 0.20 in 2010 to 0.22 in 2016. This increase was consistent across all gender categories. The index for two or three deprivations increased between 2010 and 2016, showing declining quality of employment.

Table 7. Aggregated Results for Jordan: Headcount Ratio $H(k)$, Average Intensity $A(k)$ and Adjusted Headcount Ratio $M_{ot}(k)$ between 2010-2016 for wage employees

Indicators	2010			2016		
	Total	Men	Women	Total	Men	Women
H_1	34.2%	36.5%	24.1%	36.1%	36.5%	34.1%
A_1	60.0%	61.5%	53.2%	61.6%	62.6%	56.7%
M_{1t}	0.20	0.22	0.13	0.22	0.23	0.19
H_2	16.6%	18.7%	7.0%	17.6%	18.8%	12.0%
A_2	73.5%	73.6%	72.1%	77.2%	77.2%	77.5%
M_{2t}	0.12	0.14	0.05	0.14	0.01	0.1
H_3	0.6%	0.8%	0%	0.9%	0.1%	0.2%
A_3	100%	100%	0%	100%	100%	100%
M_{3t}	0.06	0.01	0	0.01	0.01	0.0

Note: Agriculture excluded. Individuals aged 15-34.
Source: Authors' own calculations.

CONCLUSIONS AND POLICY IMPLICATIONS

Over 50% of unemployed Egyptian men transitioned to informal wage jobs by 2018, highlighting unstable career paths. In contrast, most jobless or inactive women in 2012 remained in the same situation by 2018. Younger individuals (15-24) and those with basic education or less are more prone to informal work (both wage and self-employed). In Jordan, residing in rural areas increases the likelihood of securing formal wage employment. A multidimensional employment quality index reveals declining job quality, especially for Egyptian men. These insights call for policy actions to address job dynamics and enhance overall employment conditions. In the last section, we emphasize the role of vocational training increasing know-how (on the labour supply side) and regulation enforcement (on the labour demand side), which have significant and persistent impact.

YOUTH AND FINANCIAL INCLUSION IN THREE MENA COUNTRIES

Section 2 hereafter investigates the financial inclusion determinants of MENA youths and the role of employment status in this respect before and during the pandemic. Three households samples (2014, 2017 and 2021) including youths aged 15-34 are designed for Egypt, Jordan and Tunisia. Probit regressions address financial inclusion regarding account holding and fintech use. Prior to the pandemic, young employees and young entrepreneurs are financially included. Account holding is reduced for female young entrepreneurs, whereas middle income and low education level lessen the use of fintech. During the pandemic, financial inclusion decreases the gender gap, while the use of fintech bears no age gap.

ISSUE, DATA SOURCE, SAMPLING AND METHODOLOGY

Financial inclusion is a key factor in socio-economic development through the reduction of inequalities alongside inclusive and sustainable economic growth (Ayadi et al, 2021). It is often defined as having an account at a formal financial institution. This account ownership differs by age group and varies across developing economies. In Egypt, the age gap between the older age group (over 25) and the younger one (15- 24) with regard to account holding is nearly 25 percentage points. In Jordan and Tunisia, the age gap is not as high, but it is still in double digits (Demirgüç-Kunt et al, 2022).

Although the pandemic has significantly increased 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 has lower account ownership rates on average than older age group has (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 products offered by financial service providers that are not suitable or attractive to youth; and (iii) the limited financial capacity and experience of youth themselves. Hence, it is important to understand why young people in MENA countries 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 questions are the following: What role is played by the employment status (employees, self-employed and unemployed) in the financial inclusion of young people? In particular, what are the determinants of the financial inclusion of young entrepreneurs?

In this respect, we investigate three pooled households' samples, in three MENA countries (Egypt, Jordan and Tunisia): two panels before the pandemic for 2014 and 2017 respectively, as well as a panel during the pandemic for 2021.

Three samples, selected from the Global Findex Database for the three MENA countries, consist of 3,056 households in 2014, 3,013 in 2017 and 3,012 in 2021. Young people aged 15-34 represent respectively 1,483 (2014), 1,354 (2017) and 1,282 in 2021 (Table 8).

DESCRIPTIVE STATISTICS, SEQUENTIAL MODEL AND PROBIT REGRESSIONS

Almost one third of the youth population in these three countries hold an account at a formal financial institution. Although this figure remains low, it has increased from 21.04% in 2014 to 33.23% in 2021.

Table 8. Descriptive statistics: Financial inclusion and employment status of youths

Year	2014	%	2017	%	2021	%	Total
Access							
Account holding	312	21.04	418	30.87	426	33.23	1,156
No Account holding	1,171	78.96	936	69.13	856	66.77	2,963
Total	1,483	100.00	1,354	100.00	1,282	100.00	4,119
Reasons for No account holding							
Involuntary exclusion							
Too far away	89	7.60	160	17.09	82	9.58	331
Too expensive	134	11.44	361	38.57	191	22.31	686
Lack of documentation	120	10.25	166	17.74	105	12.27	391
Distrust	72	6.15	151	16.13	97	11.33	320
Voluntary exclusion							
Religious reasons	94	8.03	79	8.44	81	9.46	254
Lack money	772	65.93	756	80.77	725	84.70	2,253
Family member already has an account	167	14.26	190	20.30	218	25.47	575
No need for formal financial services	317	27.07	284	30.34	382	44.63	983
Total	1,171		936		856		2,963
Financial Traditional services*							
Savings	191	61.22	282	67.46	254	59.62	727
Borrowings	204	65.38	266	63.64	262	61.50	732
Total	312		418		426		1,156

Financial Digital services*

Credit card	63	20.19	64	15.31	43	10.09	170
Debit card	207	66.35	302	72.25	328	77.00	837
Mobile banking	65	20.83	120	28.71	193	45.31	378
Total	312		418		426		1,156

Employment status**

Employee	219	64.99	366	76.89	374	94.44	959
Self-employed	91	27.00	97	20.38			188
Unemployed	27	8.01	13	2.73	22	5.56	62
Total	337	100.00	476	100.00	396	100.00	1,209
Total	1,483		1,354		1,282		4,119

Note: * They are provided by a bank or at another type of financial institution, such as a credit union, a microfinance institution, a cooperative, or the post office (if applicable). **The employer may use four ways to pay wages: transfer into an account, through a mobile phone, to a card and in cash. However, there is no indication whether payment in cash is informal.

Source: Authors' own elaboration from the Global Findex database (2014, 2017 and 2021)

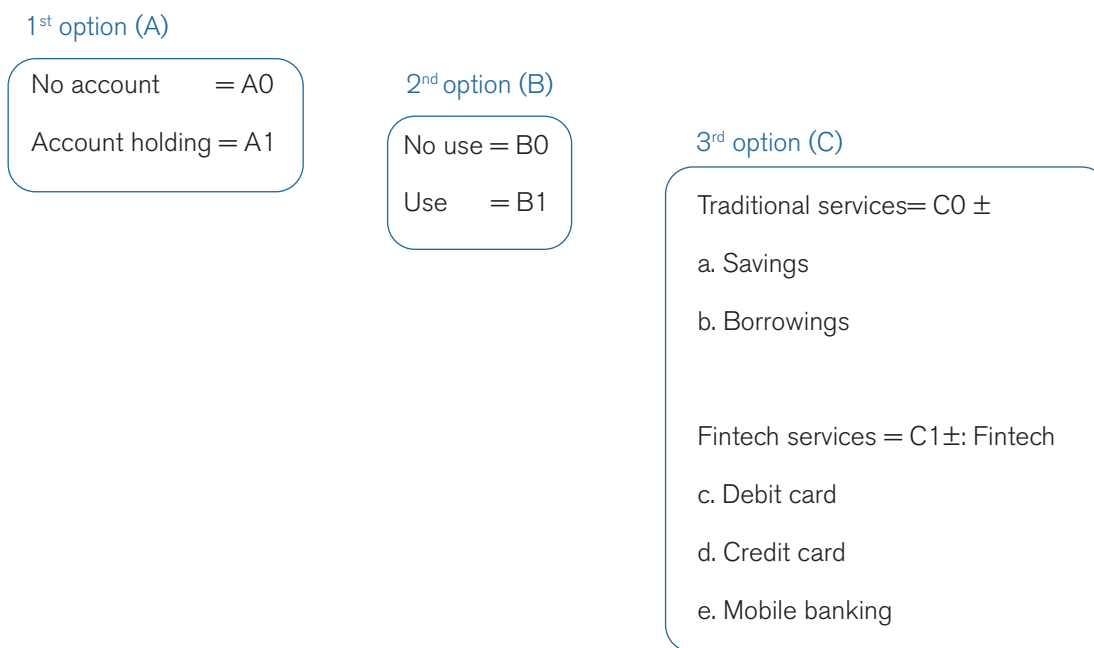
Table 8 reports voluntary reasons (religious beliefs, lack of money, family member already has an account and no need for financial services at a formal institution) and involuntary reasons (too far away, too expensive, lack of documentation and distrust) explaining why young people do not use formal financial services. Young people are increasingly self-selecting, mainly because of the lack of money and besides the drop in involuntary financial inclusion during the pandemic, the high cost of financial services remains the main reason reaching 22.31%.

Only 9.58% of young people who do not hold a bank account in 2021, compared to 17.09% in 2017, cite the distance to reach a financial institution as a cause of their absence of banking during the pandemic. This decline is explained by their progressive use of digital financial products, mainly credit cards and mobile banking. In 2021, 45.31% of young people with a telephone and access to the internet use "Mobile banking" to access formal financial services compared to 20.83% in 2014.

Over 60% of financially included young people hold both traditional savings and credit products. However, their use has declined during the pandemic.

The majority of active young people are employees. The percentage of entrepreneurs (Self-employed) fell in 2017 by 20.38% against 27% in 2014 while that of unemployed increased from 2.73% in 2017 to 5.56% in 2021 due to the pandemic.

In Figure 1, we design a sequential choice model best represented with a decision tree, which includes three binary options: (A) No account vs. account holding at a financial institution (bank, credit union, microfinance institution, a cooperative, or the post office), prior to (B) No use vs. Use and last, (C) Traditional services vs Fintech services.

Figure 1. Decision tree: the sequential financial inclusion models prior and during COVID-19

Note: ±. Several financial services can combine for people holding an account at a formal financial institution
Source: Authors' own elaboration

We use two probit regression models addressing only two aspects of financial inclusion. First, holding an account at a formal financial institution (*Account holding*). Second, financial services used, in particular the digital services (*Fintech*), such as debit cards, credit cards and the use of telephone and internet to access the bank account, check the balance, make payments, send or receive money. Each measure of these two aspects of financial inclusion constitutes the variable to be explained. The choice of the digital services aims at studying their trend before and during the pandemic. The explanatory variables include the characteristics of households (*Gender, Education level, Income, Employment status and Age*), external sources of financing (*Informal loan, Remittances and Government Financial support*) and *Country dummies* as control variables. These two probit regressions (model 1 and model 2) estimate the predicted probabilities of each financial inclusion aspect for the overall sample, then for the sub-sample of young people and eventually for the two sub-samples of young entrepreneurs and employees. Unfortunately, information related to formal vs informal work status is missing.

FINANCIAL INCLUSION OF YOUNG PEOPLE PRIOR AND DURING THE PANDEMIC

According to the first aspect of financial inclusion (*Account holding*) in Table 9, young people (*Youth*) hold fewer bank accounts compared to older people as for the three years (model 1a, 1a.b, 1a.bs). It

confirms the result of Mouna & Jarboui (2022): Young people are disproportionately excluded from the financial system in the MENA region.

Before the pandemic (2014 and 2017), there was no difference between the determinants of financial inclusion in terms of access between the overall sample (model 1a, model 1a.b) and the “youth” sub-sample (model 1b, model 1b.b). Coefficients of *Gender*, *Education (Primary or less and Secondary)*, *Income (Poorest and Middle quintiles)*, and *Country dummies (Egypt and Jordan)* are negative while those of *Employment status (Employee and Self-employed)*, *Remittances* and *Government financial support* are positive.

Access to accounts is lower among women, less educated, poor or middle quintiles populations. On the other hand, most transfers (sent or received) of domestic funds and government transfers received as financial support (payments for educational or medical expenses, unemployment benefits, subsidy payments, or any kind of social benefits) are made on accounts; which encourages the population, including young people, to open bank accounts.

In 2017, the *informal loan* variable becomes significant and negative only for the full sample (model 1b). Borrowing from family or friends or an informal savings club or private lenders reduces the likelihood of access to banking services. Hence, an informal loan may stand as a substitute to a banking loan.

The *Remittances* variable loses its significance for the “youth” sub-sample compared to the overall sample, otherwise receiving or sending domestic remittances has no effect on youth bank account access (model 1b.b). This result contradicts Kokorović et al (2020), who discuss financial inclusion of youth in South East Europe as for 2011. They found a controversial impact of remittances on youth financial inclusion that owners of formal financial accounts may enjoy, thanks to accessing a debit card, a credit card, savings and borrowing.

During the pandemic (2021), the *Gender* and *Country (Jordan)* variables changed sign and became positive for the overall sample and the young people (model 1a.bs and model 1b.bs). There is definitely a change in behaviour for the Jordanian government during the pandemic. Progress has also been made in helping women access financial services; confirming the decline in the gender gap with respect to bank accounts in developing economies from 9% to 6% as of 2022 (Demirgüç-Kunt et al, 2022).

As for the other variables, there is no difference in the determinants of financial inclusion between the full sample (model 1a.bs) and young people (model 1b.bs) prior and during the pandemic. Informal loan remains significant only for the full sample. Prior to the pandemic, the probability of holding an account is especially limited for women, less educated and poor people (including those with middle income), but it improved for women during the pandemic.

Table 9. Estimation of the financial inclusion model: Account holding (marginal effects)

Year Model Sample Variables	2014				2017				2021		
	(1a) Full	(1b) Youth	(1c) Youth self- employed	(1d) Youth employee	(1a.b) Full	(1b.b) Youth	(1c.b) Youth self- employed	(1d.b) Youth employee	(1a.bs) Full	(1b.bs) Youth	(1d.bs) Youth employee
Gender: Female (ref.: Male)	-0.0994*** (-6.7986)	-0.0342* (-1.7217)	0.1010 (0.8838)	0.0824 (1.1330)	-0.0963*** (-5.7020)	-0.0543** (-2.2875)	-0.1716* (-1.6683)	-0.0402 (-0.6924)	0.1025*** (6.2283)	0.0576** (2.3682)	-0.0907 (-1.5153)
Age: Youth (15-34) (ref.: Mature ≥ 35)	-0.1354*** (-9.2652)				-0.1854*** (-11.7586)				-0.1920*** (-12.1612)		
Education: Primary - (ref.: Tertiary +)	-0.2515*** (-10.5653)	-0.1695*** (-5.0934)	-0.1999 (-1.0246)	-0.2020* (-1.6858)	-0.2646*** (-10.3695)	-0.2101*** (-5.4962)	-0.1830 (-1.1862)	-0.4102*** (-5.5923)	-0.3048*** (-12.2335)	-0.3299*** (-8.1473)	-0.3988*** (-5.2541)
Education: Secondary (ref.: Tertiary +)	-0.1739*** (-8.1866)	-0.1450*** (-5.4183)	-0.1047 (-0.8182)	-0.1403* (-1.8721)	-0.1981*** (-8.5017)	-0.1375*** (-4.7611)	-0.1777 (-1.3972)	-0.2250*** (-3.9588)	-0.2292*** (-10.5259)	-0.1940*** (-7.3974)	-0.1885*** (-3.7687)
Income: Poorest Q1 (ref.: Richest Q5)	-0.2121*** (-8.7244)	-0.2231*** (-5.8808)	-0.0532 (-0.2540)	-0.4679*** (-3.9048)	-0.2560*** (-9.6516)	-0.1910*** (-4.8239)	-0.1205 (-0.7193)	-0.3539*** (-3.8686)	-0.2150*** (-8.2975)	-0.1226*** (-2.9971)	-0.2207** (-2.4166)
Income: Middle Q2+Q3+Q4 (ref.: Richest Q5)	-0.1164*** (-7.3995)	-0.1077*** (-5.3101)	-0.1717 (-1.5668)	-0.1969*** (-3.0689)	-0.1335*** (-7.2657)	-0.1177*** (-4.7659)	-0.1301 (-1.2274)	-0.0906* (-1.7290)	-0.1139*** (-6.3018)	-0.0612** (-2.4054)	-0.1293*** (-2.6687)
Job status: Employee (ref.: Out of the labour force)	0.1692*** (9.1465)	0.1699*** (6.8810)			0.1788*** (9.2135)	0.2496*** (10.3964)			0.1300*** (6.7755)	0.1454*** (5.8708)	
Job status: Unemploy. (ref.: Out of the labour force)	-0.0541 (-0.5632)	-0.0668 (-0.4818)			0.0174 (0.1844)	0.0771 (0.6089)			-0.1385** (-2.3391)	-0.3225*** (-3.2631)	
Job status: Self-employ (ref.: Out of the labour force)	0.1228*** (3.8395)	0.1470*** (3.5277)			0.1251*** (4.4094)	0.2134*** (5.2784)					
Informal loan (ref.: No informal loan)	-0.0345 (-1.2301)	-0.0393 (-0.9642)	-0.1037 (-0.9912)	-0.0787 (-0.8419)	-0.0284* (-1.6618)	-0.0131 (-0.5440)	-0.0560 (-0.5538)	-0.0622 (-1.3008)	-0.0534*** (-3.1428)	-0.0123 (-0.5204)	-0.0032 (-0.0716)
Remittances: (ref.: No remittance)	0.0608*** (3.3038)	0.0867*** (3.5993)	0.0537 (0.4783)	0.1111* (1.6933)	0.0460** (2.4912)	0.0391 (1.5547)	0.0121 (0.1176)	0.0196 (0.4103)	0.1343*** (7.2041)	0.1633*** (6.6571)	0.1448*** (3.2624)
Government support: Yes (ref.: No)	0.1565* (1.8070)	0.1668 (1.3813)	0.2045 (1.2426)	0.2447* (1.7116)	0.4105*** (11.8320)	0.4334*** (8.4097)	0.0731 (0.3129)	0.1190 (1.1663)	0.3696*** (11.2493)	0.4504*** (7.6426)	0.3305*** (3.5668)
Country : Egypt (ref.: Tunisia)	-0.1496*** (-8.2424)	-0.1421*** (-5.9163)	-0.2002* (-1.6953)	-0.2215*** (-2.8527)	-0.0449** (-2.2627)	-0.1630*** (-5.7594)	-0.4458*** (-3.9997)	-0.2606*** (-4.4990)	-0.0918*** (-4.7820)	-0.1647*** (-5.7174)	-0.2051*** (-3.6706)

Table 9. Estimation of the financial inclusion model: Account holding (marginal effects)

Year	2014				2017				2021		
	(1a)	(1b)	(1c)	(1d)	(1a.b)	(1b.b)	(1c.b)	(1d.b)	(1a.bs)	(1b.bs)	(1d.bs)
Model	Full	Youth	Youth self-employed	Youth employee	Full	Youth	Youth self-employed	Youth employee	Full	Youth	Youth employee
Country : Jordan	-0.0311*	-0.0773***	-0.2640**	-0.0443	0.0283	-0.0421*	-0.1295	-0.0508	0.0581***	0.0517**	0.0695
(ref.: Tunisia)	(-1.8118)	(-3.4533)	(-2.2033)	(-0.5581)	(1.4770)	(-1.6916)	(-1.1613)	(-0.8409)	(3.0032)	(2.0249)	(1.3588)
Observations	3,037	1,475	91	219	2,974	1,330	95	362	2,981	1,270	372

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

Source: Authors' own estimates

Table 10. Estimation of the financial inclusion model: Fintech (marginal effects)

Year	2014				2017				2021		
	(2a)	(2b)	(2c)	(2d)	(2a.b)	(2b.b)	(2c.b)	(2d.b)	(2a.bs)	(2b.bs)	(2d.bs)
Model	Full	Youth	Youth self-employed	Youth employee	Full	Youth	Youth self-employed	Youth employee	Full	Youth	Youth employee
Gender: Female	-0.0887***	-0.0602***	-0.0155	-0.0242	-0.0835***	-0.0575***	-0.1976**	-0.0555	0.0173	0.0701**	0.0234
(ref.: Male)	(-6.5403)	(-3.2636)	(-0.1391)	(-0.3437)	(-5.1881)	(-2.6535)	(-2.2059)	(-0.9619)	(0.8365)	(2.0947)	(0.5056)
Age: Youth											
(if <15Age<34)	-0.0941***				-0.1495***				-0.0111		
(ref.: Mature if Age ≥ 35)	(-6.9365)				(-9.9403)				(-0.4861)		
Education: Primary or less	-0.2209***	-0.1637***	-0.2708	-0.2651**	-0.2728***	-0.2404***	-0.4506***	-0.4381***	-0.1893***	-0.1777***	-0.0601
(ref.: Tertiary or higher)	(-10.2395)	(-5.2290)	(-1.4560)	(-2.1771)	(-11.9171)	(-6.6464)	(-3.6455)	(-5.8653)	(-5.9225)	(-2.9958)	(-0.7648)
Education: Secondary	-0.1260***	-0.1188***	-0.1233	-0.1336*	-0.1786***	-0.1369***	-0.2152**	-0.2525***	-0.0814***	-0.0622	-0.0480
(ref.: Tertiary or higher)	(-6.7538)	(-4.8973)	(-0.9689)	(-1.7980)	(-8.5792)	(-5.4746)	(-2.0369)	(-4.7667)	(-2.8331)	(-1.5418)	(-0.9983)
Income: Poorest Q1	-0.1963***	-0.2035***	-0.2050	-0.3735***	-0.2529***	-0.1755***	-0.0602	-0.2930***	-0.0497	0.0764	-0.0742
(ref.: Richest Q5)	(-8.3970)	(-5.5550)	(-1.0217)	(-3.0802)	(-9.9873)	(-4.7525)	(-0.4268)	(-3.2170)	(-1.3637)	(0.8697)	(-0.8134)
Income: Middle Q2+Q3+Q4	-0.1128***	-0.1060***	-0.3092***	-0.1336**	-0.1495***	-0.1230***	0.0494	-0.1060**	-0.0439*	-0.0313	-0.0524
(ref.: Richest Q5)	(-7.9946)	(-5.7123)	(-3.0917)	(-2.0541)	(-9.0088)	(-5.6435)	(0.5152)	(-2.0414)	(-1.8913)	(-0.8195)	(-1.1496)

Table 10. Estimation of the financial inclusion model: Fintech (marginal effects)

Year	2014				2017				2021		
	(2a)	(2b)	(2c)	(2d)	(2a.b)	(2b.b)	(2c.b)	(2d.b)	(2a.bs)	(2b.bs)	(2d.bs)
Model	Full	Youth	Youth self-employed	Youth employee	Full	Youth	Youth self-employed	Youth employee	Full	Youth	Youth employee
Sample Variables											
Employee status:	0.1305***	0.1425***			0.1609***	0.2135***			0.0173	0.0148	
Employee (ref.: Out of the labour force)	(7.9040)	(6.4025)			(9.0661)	(9.8060)			(0.7683)	(0.4272)	
Job status: Unemployed.	-0.0421	-0.0212			-0.0173	-0.1071			0.0528		
(ref.: Out of the labour force)	(-0.5827)	(-0.1847)			(-0.2277)	(-1.0494)			(0.8675)		
Job status: Self-employed	0.1191***	0.1106***			0.1197***	0.1657***					
(ref.: Out of the labour force)	(4.2915)	(3.1595)			(4.6308)	(4.6516)					
Informal loan	-0.0124	0.0173	0.1410	0.0025	-0.0191	-0.0058	-0.0169	-0.0262	0.0007	0.0100	0.0040
(ref.: No informal loan)	(-0.4861)	(0.5141)	(1.4240)	(0.0275)	(-1.1904)	(-0.2621)	(-0.1824)	(-0.5469)	(0.0334)	(0.2926)	(0.0916)
Remittances:	0.0535***	0.0624***	-0.1203	0.1399**	0.0324*	0.0494**	0.0455	0.0076	0.0290	0.0289	0.0482
(ref.: No remittance)	(3.2753)	(2.8367)	(-1.1066)	(2.1627)	(1.8935)	(2.1954)	(0.5046)	(0.1580)	(1.2815)	(0.8328)	(1.0614)
Government support: Yes	0.0553	0.0306	0.1584	0.0618	0.1626***	0.2246***	-0.0777	0.0042	-0.0577*	-0.0557	-0.0791
(ref.: No)	(0.9088)	(0.3088)	(1.0218)	(0.4352)	(5.3934)	(5.0349)	(-0.3518)	(0.0438)	(-1.9568)	(-1.2045)	(-1.3274)
Country : Egypt	-0.0692***	-0.0959***	-0.1512	-0.1986**	0.0113	-0.1469***	-0.3956***	-0.2822***	0.1403***	0.1300**	0.1222*
(ref.: Tunisia)	(-4.0632)	(-4.1943)	(-1.2792)	(-2.4512)	(0.6065)	(-5.4949)	(-3.2553)	(-4.8690)	(5.3916)	(2.5757)	(1.7635)
Country : Jordan	0.0244	-0.0106	-0.1221	0.0525	0.0340*	-0.0300	-0.0333	-0.0262	0.1563***	0.1526***	0.1738***
(ref.: Tunisia)	(1.5453)	(-0.5183)	(-1.0261)	(0.6508)	(1.8959)	(-1.3221)	(-0.3369)	(-0.4399)	(6.7665)	(4.2277)	(3.7579)
Observations	3,037	1,475	91	219	2,974	1,330	95	362	1,177	391	192

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

Source: Authors' own estimates

According to the second aspect of financial inclusion (*Fintech*) in Table 10, young people use less digital services before the pandemic (2014 and 2017), given that the *Age* variable for *Youth* is negative (model 2a and model 2a.b).

Before the pandemic, the probability of using digital products was limited for women, the population with a low level of education and income (including middle), as well as for the Egyptian population regardless of the overall sample or young people (model 2a and 2b, model 2a.b and 2b.b). *Fintech* is a powerful tool for domestic remittances (*Remittances*), wage payments for *Employees* (model 2a and 2b, model 2a.b and 2b.b) as well as emergency *Government financial support* carried out (model 2b and 2b.b). Noteworthy is that digitizing these payments is a way to increase *Account holding* ownership (Demirgüç-Kunt et al 2018).

During the pandemic, the *Youth* variable becomes insignificant: There is no age gap in terms of using digital services in 2021. On the other hand, the *Gender* variable changes sign and becomes positive as in the first model (Table 10). COVID-19 and social distancing measures have helped accelerating the adoption of digital payments for young women (model 2.b)

Education level (Primary) is negative while *Country dummies* (Egypt and Jordan) are positive; which suggests that on the one hand, digital services require a level of education to handle them and on the other hand, the mobilization of these MENA countries.

The use of *Informal loan* has no impact on the use of *Fintech* for the various samples before and during the pandemic. This result is expected since in model 1, people who borrowed from family or friends have less bank accounts and therefore they use no digital payments. It seems that these informal loans are substitutes for formal finance (*fintech* and traditional). This is consistent with the fact that informal loans from family and friends were an important source of funding for small businesses during the pandemic. In Jordan, 44% of all credit to micro enterprises consisted of informal loans (FAFO, ILO & UNDP, 2021).

FINANCIAL INCLUSION OF YOUNG ENTREPRENEURS PRIOR AND DURING THE PANDEMIC

Since information on entrepreneurs is only available before the pandemic (2014, 2017), *Employment status (Self-employed)* was first used as an explanatory variable for two regression models for the overall sample and the “youth” sub-sample. Afterwards, it was used to break down a second sub-sample of “young entrepreneurs” and extract the determinants of their financial inclusion.

According to the two regression models (Table 9 and Table 10) *Self-employed* is positive and significant (model 1a, 1a.b, model 2a, model 2a.b): Entrepreneurs are better financially included regardless of their age. It is also interesting to identify the factors influencing the financial inclusion of young entrepreneurs.

Informal loans do not affect the financial inclusion of young entrepreneurs. This result contradicts that of Berguiga & Adair (2023) before the pandemic. When the business uses personal loan and is holding a bank account, the financial institution is more confident that the client is solvent and its loan application

may turn out to be successful and its likelihood of self-selection declines: Hence, informal loans stand as a complementary resource to formal finance.

In 2014, *Country dummies (Jordan and Egypt)* are negative and significant according to the first aspect of financial inclusion: no government pressure by these two countries aims to encourage youth entrepreneurship through access to accounts. Having an average income (*Middle*) reduce the use of digital services.

In 2017, young entrepreneurs with a low level of education (*Primary and Secondary*) are less likely to use digital services. *Gender* and *Country dummy (Egypt)* variables are negative for both aspects of financial inclusion: the more young entrepreneurs are women, especially Egyptians, the less they hold bank accounts and the less they use digital services. This result can be explained on the demand side by female self-selection and on the supply side by discrimination from formal financial institutions. However, this explanation is inconsistent with previous findings from MENA countries, before the COVID-19 outbreak (Morsy et al 2019; Berguiga & Adair, 2021) on another aspect of financial inclusion: the use of a traditional product such as bank credit. The results show that there is no evidence of self-selection or gender discrimination when applying for credit. On the other hand, Berguiga and Adair (2023) pointed out that a caveat must apply because two non-representative sub-samples (selection bias) were used.

Berguiga & Adair (2023) used two distinct but somehow comparable sub-samples of micro enterprises (1 to 9 employees), from the 2020 World Bank Enterprise Survey (WBES) and the Economic Research Forum COVID-19 Monitor in 2021 (ERF) prior and during the pandemic in four MENA countries (Egypt, Jordan, Morocco and Tunisia). Both sub-samples include a similar share of female owners, 10.28% as for WBES and 12.38% in the ERF. Probit regressions (marginal effects) show that, before the pandemic, female micro entrepreneurs (owners) are prone to self-selection vis-à-vis loan applications in Tunisia (ERF) and in all North African countries (WBES) while they are not discriminated against (WBES). Holding a bank account seems to oppose both self-selection or not and discrimination of micro entrepreneurs.

During the pandemic, no self-selection vis-à-vis government support affects either gender or micro-entrepreneurs. Women are not discriminated against unlike Moroccan micro-entrepreneurs. Account ownership turns out to be insignificant: it may not prevent self-selection or discrimination of micro entrepreneurs, which remain obstacles to the growth of their businesses.

FINANCIAL INCLUSION OF YOUNG EMPLOYEE PRIOR AND DURING THE PANDEMIC

Employment status (Employee) was first used as an explanatory variable in our models of the overall sample and the sub-sample of “young people”, then it was used to extract the determinants of the financial inclusion for the sub-category of “young employees” (Table 9 and Table 10).

Before the pandemic, the younger the employees, the more likely they were to hold a bank account for the payment of their salaries and the more they used digital services to consult their accounts or carry out other financial transactions (model 1a, 1a.b, model 2a, model 2a.b). *The Remittances* (model 1.d, model 2.d) and

Government financial support (model 1d, model 1d.b, model 2d, model 2d.b) are positive and significant variables. Domestic transfers, including from governments, promote the financial inclusion of young workers. Conversely, this financial inclusion (account holding and use of Fintech) declines if their level of education (*Primary* and *Secondary*) is low, they are poor or have a medium income (*Poorest* and *Middle*) and especially if they work in Egypt (model 1d, model 1d.b, model 2d, model 2d.b).

The pandemic has not affected the determinants of bank account holding for young employees because they remain the same as during the pandemic (model 1d.bs). On the other hand, during the pandemic, only the country effect played an important role in the use of digital services by young employees (model 2d.bs). The signs of *Egypt* and *Jordan* have changed positively; which shows the efforts made by these countries in the technological financial inclusion of their young employees. Noteworthy is that there is no gender effect either before or after the pandemic on their financial inclusion unlike young entrepreneurs.

CONCLUSIONS AND POLICY IMPLICATIONS

During the pandemic, estimation results show that the gender gap has decreased with respect to both aspects of financial inclusion (account holding and use of fintech), while there is no age gap for fintech use. Access to digital technology for young people tends to be lower only for those with a low level of education compared with the pre-pandemic period, which is also lower for those with a level of secondary education; higher education is conducive to financial inclusion. Prior to the pandemic, other variables exert a negative impact upon account holding by young entrepreneurs, such as gender and country variables, while middle income and low education level again reduce their use of fintech. Informal finance has no effect on the financial inclusion of young people (including entrepreneurs).

Financial inclusion promotes equality through expanded financial products. Although we must highlight the efforts made by governments of MENA countries for greater financial inclusion, especially for women and young people, they still experience gaps in financial access for underserved young people, who are less educated and out of the workforce.

Government policy should focus on this underserved population to make financial inclusion more wide-ranging. It should distinguish between voluntary and involuntary reasons of financial exclusion in order to identify barriers to those who do not have an account and to ensure digital or traditional financial services adapted to the needs of the population, whatever their financial situation, their level of education and their employment status.

Policymakers need to put in place a well-developed payment system, good physical infrastructure, appropriate regulations, and strong user protection safeguards.

The creation of an appropriate regulatory framework will encourage recipients of domestic funds to open an account in formal financial institutions in order to receive funds, and consequently save some of the money flows received.

PROMOTING THE FORMALISATION OF INFORMALITY IN MENA COUNTRIES: ISSUES AND POLICIES

Section 3 recalls persistent labour market segmentation, documented by substantial income gaps in North Africa with respect to the formal/informal divide, gender and job status. It compares macro policies influencing formalisation and explicit formalisation policies enforcing labour regulations and social protection, targeting micro businesses, bringing young entrepreneurs and female workers under the scope of labour regulations. Schemes include incentives such as social protection, training and financial services that prove effective, alongside law and regulations enforcement. Impact assessment displays rather modest outcomes. Several ways whereby the EU may provide assistance are suggested.

DEFINITIONS AND THEORIES OF INFORMALITY

A Fuzzy Set. Extant research over half a century point out that the concept of informal economy includes distinct theories and methodologies lacking consensus. In this respect, informality is a “fuzzy set” capturing three components: the informal sector, and informal activities within the formal sector and in households. Data sources are patchy and coverage remains deficient, not least in the MENA countries. The informal sector (the largest component) encapsulates unincorporated (micro) enterprises run by unregistered self-employed -own-account workers and employers- managing less than five permanent paid employees. Informal employment extend to all precarious jobs carried out both in the informal sector, as well as within formal enterprises and households (including domestic workers and household members producing goods and services for their own use), wherein workers are not subject to labour regulations, income taxation or employer-provided social protection. (Charmes, 2019).

A threefold spectrum of theories purports to explain informality. According to a pessimistic interpretation of dualism (Lewis, 1954), persistent informality is due to labour market segmentation – into formal versus informal jobs –, whereupon entry barriers to the formal economy affect the labour market supply side (i.e., workers). Dualism is not congruent with structuralism (Castells & Portes, 1989), given that the informal economy is not separated but rather subsumed by the formal economy under subcontracting arrangements. Institutionalism (De Soto, 1986) assumes that informality stems from inadequate regulation, and excessive bureaucracy and taxation, driving small firms to existing or being excluded from the formal economy.

The emphasis from the World Bank on lowering barriers to entry and to business activity, and levelling the competitive field, is consistent with institutionalism together with structuralism, as they focus on the demand side of the labour market and the supply side of the goods market (i.e., businesses).

La Porta & Shleifer (2014) support segmentation theory and dismiss the other two theories, contending that the size of the informal economy, proxied by the share of self-employment in total employment, declines

with rising income per capita, which does not preclude the implementation of adequate formalising policies. Noteworthy is that the informal economy is restricted to employment in the informal sector and, perhaps, in households, but it overlooks informal employment within the formal economy.

Fields et al (2023) address heterogeneity within informal work by applying a common conceptual framework (segmented categories) and empirical methodology (panel data). However, available data were not always granular enough to disentangle lower-tier and upper-tier informal employment. Hence, cross-sectional data must provide additional information. In addition, the panel data may lack representativeness at the national level.

Segmentation. There is gender segmentation of informal employment according to status and income. The vulnerability to poverty risk is uneven between genders. In a five-step classification of informal workers – as employers, regular informal employees, own-account workers, casual/irregular employees and unpaid family workers – men concentrate amongst the three upper categories, whereas women are over-represented in the two bottom categories, wherein there is higher poverty risk prevalence (Chen et al 2020, 71).

A survey with an even gender distribution was conducted in 2015 over a sample of 7,816 individuals aged 15-29 from four MENA countries (Algeria, Morocco, Tunisia and Egypt). Among 3,027 active people, one quarter is unemployed, where females are disproportionately affected. Two out of three vs one out of three individuals are respectively informal workers vs formal workers. (Gherbi & Adair, 2020).

Table 11. Average monthly incomes of youths, North Africa as of 2015

	Females	Males	Gender pay gap (%)
Formal employee	742.35	868.36	14.51%
Formal self-employed	859.82	1,429.25	39.84%
Formal workers (employees + self-employed)	751.49	961.32	21.82%
Informal employee	417.42	489.28	14.68%
Informal self-employed	380.73	650.18	41.44%
Informal workers (employees + self-employed)	407.51	536.56	24.05%
Formal /Informal employee ratio	1.778	1.774	
Formal /Informal self-employed ratio	2.258	2.198	

Notes: 1,941 North African youths (aged 15-29) holding a job as of 2015. Income in \$ PPP (Purchasing Power Parity Adjusted). North Africa includes Algeria, Egypt, Morocco and Tunisia.
Source: Gherbi & Adair (2020).

Table 11 displays large income gaps between informal and formal jobs in North Africa, supporting the segmentation theory. The formal/informal employee income ratio is similar across genders as well as for

the formal/informal self-employed ratio. In contrast, the gender pay gap is lower amongst formal workers (21.82%) than amongst informal workers (24.05%).

Similarly, the income gap between formal and informal employees in Egypt favours the former at the expense of the latter. Hence, formal employment is attractive enough for formal employees to remain within their status and for informal employees to move towards it. Table 12 reports that the formal/informal average wage gap is usually wider for women than for men as of both 2012 and 2018. Without accounting for age groups, the formal/informal average wage gap stands below (2012) or beyond (2018) 33.33 per cent. This finding is consistent with that of the Sahwa survey upon North Africa (Gherbi & Adair 2020).

Table 12. Egypt Formal/Informal Employees Real Monthly Wage and Wage Gap in Egypt (2012-2018)

Year	Informal Employees		Formal Employees		Formal/informal	Formal/informal
	2012	2018	2012	2018	Wage Gap (2012)	Wage Gap (2018)
Youth men	2,085	2,267	2,791	2,894	(25.29)	(21.66)
Youth women	1,376	2,323	1,979	2,002	(30.46)	(-16.03)
Adult men, 30-44	2,414	2,180	3,561	4,812	(32.21)	(54.69)
Adult women, 30-44	1,211	2,757	2,335	2,629	(48.13)	(-4.86)
Adult men, 45-59	2,452	2,038	3,671	3,051	(33.20)	(33.20)
Adult women, 45-59	1,360	1,503	3,179	2,911	(57.22)	(48.36)
Total	2,193	2,224	3,195	3,582	(31.36)	(37.91)

Note: All wages are in 2018 EGP currency, deflated with the Consumer Price Index. Wage gap in percentage.
Source: Adair et al (2023) from Egypt Labour Market Panel Surveys –ELMPS for 2012 and 2018.

The first main cause of persistent or rising informality is the inability of the formal economy (including the public sector) to absorb increasing labour force. The International Monetary Fund -IMF (Balima, 2021) suggests that 85 per cent of all informal workers are in precarious employment not through choice, but due to lacking opportunities in formal (private or public) employment. The other main cause is inadequacy of regulatory frameworks and weak enforcement of labour contracts and social security inspectorate, including corruption, which push the informal sector and microenterprises to operate outside the purview of regulations.

In the 2010s, the International Labour Organisation (ILO, 2013) provided a comprehensive overview of the informal economy and recommended policy approaches to achieve transition and integration into the formal economy. The World Bank has advocated and assessed formalisation policies targeting the inefficiencies and inequities in the informal sector (Benjamin et al, 2014).

FORMALISING INFORMALITY: THREE STAKEHOLDERS WITH POTENTIAL CONFLICTING ISSUES

(i) Why formalise? There are prospective improvements for: Working individuals (e.g. benefit from social protection); Businesses (access to credit, markets and public procurements); Society and the State (broadening the tax base, reducing tax rates).

(ii) The above issues may be conflicting: Extending social protection is an advantage for informal employees, at the expense of rising labour costs for (informal and formal) enterprises?

Unfair competition of informal businesses vis-à-vis formal enterprises?

Trade-off: increasing tax receipts to finance public goods vs. *laissez-faire* to avoid social unrest?

Is formalisation able to combine the removal of barriers to entry, compliance with labour regulations and tax consent?

(iii) What is (are) the target(s)? Entrepreneurs vs. employees.

Will formalisation reconcile entrepreneurship advocated by the World Bank with social protection claimed by the International Labour Office?

A BROAD RANGE OF FORMALISATION POLICIES WITH A MODERATE IMPACT BEFORE THE PANDEMIC

A broad range of formalisation policies addressed the heterogeneity of informality, but impact assessments provided mixed evidence. A relevant distinction is between policies explicitly tackling informality vs. policies that prove influential though without explicitly aiming at formalisation, such as Active Labour Market Policies (ALMPs).

The former policies target categories of businesses (e.g., microenterprises), or workers (e.g., domestic work) and the component of informality (e.g., undeclared work in formal enterprises). ALMPs address the following: (i) skills training in Tunisia (Almeida et al, 2012); (ii) support for enterprise development including microfinance services in Egypt (Amer & Selwaness, 2021); (iii) employment services that have no impact on employment outcomes in Jordan (Groh et al, 2012); and (iv) subsidised employment (public employment and wage subsidies) in Jordan and Tunisia (Barcucci & Mryyan, 2014) that does not create jobs in the long run.

Microcredit made positive impacts in the short-term, mainly upon already established businesses in Egypt (Amer & Selwaness, 2021), whilst there is no impact on the probability of establishing new businesses. Positive effects vanish in the long run, perhaps because the loan amount is too small to spur investment, thus calling for a more sustainable approach.

Formalisation policies address the informal sector more than informal employment, although formalisation targeting the latter proves more effective than targeting the former (Jessen & Kluve, 2019). Enacting laws alone does not ensure the transition of workers from informal to formal jobs; beyond design and implementation, monitoring and assessment are crucial steps in the policy cycle.

Formalising businesses using incentives (carrot) is threefold. First, information campaigns on the procedures and benefits of registration, alone, have no impact. Second, single window gathering various agencies simplify business registration procedures and, alongside incentives to lessen taxes and social security contributions, prove effective. In 2022, Jordan designed the Integrated Business Registry System, which will unify the registration process through a single window at the Companies Control Department. Third, the impact of shrinking registration costs for start-ups and granting subsidies to businesses that register depends on the amount.

Formalising businesses using penalties (stick) includes, as a fourth approach, law enforcement by the labour inspectorate, which exerts a limited but significant impact on driving workers towards formal employment proves persistent for several years (Gaarder & van Doorn, 2021).

(i) Regarding scope, policies influencing formalisation (growth strategies and education policies) are distinct from policies explicitly aiming at informality, affecting transversal drivers (enforcing labour regulations and strengthening governance of social protection); targeting specific categories (special schemes for micro and small businesses), bringing groups of workers under the scope of labour regulations (young entrepreneurs and female workers).

(ii) Impact assessment is addressing businesses rather than employment, though formalisation policies that target workers prove more effective than targeting enterprises (Jessen & Kluve, 2019).

Macro policies yield positive and moderate small-scale effects, generally more effective than those resulting from a group or region-specific policy do yield.

FORMALISATION POLICIES DURING THE PANDEMIC

The COVID-19 pandemic generated a violent shock to both aggregate supply and aggregate demand on labour markets, due to mobility restrictions and the inability for many workers to perform their jobs remotely. Lockdowns shrunk the demand on the market for goods and services, especially in tertiary industries (restaurants, hotels, travel and tourism, wholesale and retail trade including street vendors), where informal workers are concentrated. In addition, among those holding a formal public or private job, youth women were the most adversely affected, either being more likely to turn unemployed or to exit the labour force.

Since the outbreak of the pandemic, Jordan and Egypt have launched several initiatives that align and enrich the former schemes reported in Figure 2, which were tackled with experimental surveys since 2012.

Figure 2. Incentives and constraints: Formalisation policies schemes

Incentives	1 a. Non-Contributory Social Assistance	No impact or conditional impact
	1 b. Contributory Social Insurance	Small temporary impact
	2a. Active Labour Market Policies: Training and Matching	Strong vs. temporary impact
	2b. Active Labour Market Policies: Wage Subsidies	Positive but temporary impact
	3a. Financial services: Tax incentives	Positive and strong impact
	3b. Financial services: Deferred Loan Payback	Positive but modest impact
	4. Laws & Regulations (if easy implementation)	Positive and strong impact (if fairly applied)
Constraints	5. Enforcement from Labour Inspections	Positive and strong impact

Source: Adapted from Jessen & Kluge (2019) and applied to MENA countries.

Are these schemes suitable for adequate policies? What are the targets?

As for incentives 1a and 1b concerning households together with businesses, the purpose of social protection schemes is not primarily formalisation, unless combined with other incentives (e.g., financial services 3a). There are discrepancies across countries regarding overall coverage. A conservative figure is provided by the share of total population covered by at least one social protection benefit in 2019 or 2020, which amounts to 50% in Tunisia, 35% in Egypt and 30% in Jordan (ILOSTAT).

There was no impact on informality targeting vulnerable people in Jordan, whereas grants supporting registration of undeclared labour had some potential impact in Egypt (UNDP, 2023).

Regarding Active Labour Market Policies (ALMPs), incentives 2a such as vocational training programmes can have a strong impact on increasing formality, especially when targeting the private sector in the National Employment Programme 2022 of Jordan. As for incentives 2b, public work programmes do not have an impact on informality.

With respect to incentives 3a and 3b, financial services such as tax rebates, subsidised loans and deferred payback alongside credit guarantee exert a strong positive impact upon small businesses. This is an issue in Jordan, wherein there is no small business tax regime. Micro, Small and Medium Enterprises (MSMEs) are required to pay the same types of taxes as individuals or larger firms. If most firms register with local municipalities, only a few did register with the tax authorities, which is a major issue. In this respect, WBESs are stamped with a strong selection bias (i.e., non-representative sampling) providing misleading outcomes, such as asserting that over 90% firms start operating once registered (Berguiga & Adair, 2019).

Financial issues are into the hands of the Central Bank and the Tax authority, whereas banks and microfinance institutions play a key role in facilitating capital accumulation and improving productivity. Initiatives conducive to economic growth are currently taking place in Jordan (Central Bank over 2021-

2024) and Egypt (Credit Guarantee Company involving two agreements with the European Investment Bank in 2020 and 2021), wherein microenterprises are not targeted.

Laws that are adopted may not be enforced. Enforcement is a criterion of institutional quality, which requires monitoring that is often lacking.

Formalisation should ideally reconcile the promotion of sustainable entrepreneurship advocated by the World Bank, with the ILO-supported expansion of social protection for informal and other non-covered workers.

CONCLUSIONS AND POLICY IMPLICATIONS

Noteworthy is that there is no impact assessment directly related to informality and (the lack of) financial inclusion. Unfortunately, piecemeal data collected from the MENA country, such as aforementioned experimental surveys in early 2010s (See Figure 2) and during the pandemic by ERF Monitor (OAMDI, 2021) do not allow the design of a relevant test, from a micro point of view.

Informality is a hot issue as regards its scope and trend in MENA countries, calling upon its formalisation. Informality requires both ongoing thorough investigation as well as taking stock of evolving stylised facts. Data collection is a pre requisite for designing, monitoring and assessing policies that address the formalisation of informality.

Four policy options, from macro to more specific targeting, are relevant with regard to the process of formalisation, and outcomes may take time to show up.

(i) Economic growth through enhancing education and vocational training, creating more formal jobs, raising the earnings of the lower-tier self-employed, formalising the upper-tier informal and increasing the enforcement of labour protections.

(ii) Formalisation policies should be gauged with regard to improving employment and welfare, and promoting job creation should take place within formal sustainable organisations. In this respect, for-profit cooperatives and not-for-profit entities of the Social and Solidarity Economy (SSEs), including microfinance institutions (MFIs), could play a key role (Adair et al 2022a and b; 2023).

(iii) Females, being typically disadvantaged compared to their male counterparts as regards workforce participation and more prone to abide by the rules, should be given positive discrimination to both enter the labour market (Gardiner et al, 2017) and access the money market (MFIs).

(iv) Formalisation must target both informal businesses and workers, using incentives and penalties. Specific tax and public procurement policies, addressing informal workers who are establishing or joining formal sustainable organisations, should be promoted.

MFIs will enable formalisation by supporting and incentivising informal businesses and workers to take steps towards inclusivity and sustainability. According to Adair et al (2022; 2023), as a paragon to

emulate and to benchmark against, the Alexandria Business Association (ABA), an Egyptian MFI, tripled the number of fully formalised clients between 2004 (6%) and 2016 (18%).

To that effect, and to provide assistance to the MENA region in their efforts to reduce informality and financial exclusion, the EU might consider the following supporting actions, which may prove operational with respect to design, targeting and implementation:

(i) Collect reliable data and assess policies. Support from *Eurostat* for data collection upon enterprise surveys will help to gauge MENA informality. Designing/assessing the implementation of 'carrot and stick' formalisation policies, can take advantage from the help of the *EU Employment Directorate*, the *European Platform Tackling Undeclared Work* and MFIs.

(ii) Design and provide appropriate assistance for funding and financial instruments. It requires: Enabling financial institutions (i.e., IMFs) to address the needs of the SSE, especially for female entrepreneurs. Downsizing loan requirements, increasing loan amount and lowering interest rates for SSEs, which can be triggered by linking the *Euro-Mediterranean Guarantee Network* (EMGN) and the *European Investment Bank* (EIB), in order to design a Guarantee scheme.

(iii) Foster the development of the SSE, with an emphasis on cooperatives. It can take stock from from EU Directorate for designing a legal framework for SSE, including fiscal incentives. *EU academia* can provide scholarships and technical assistance to design and reinforce curricula in Management of the Social Economy, train SSE workers for upscaling businesses and fostering interfaces between SSEs and lenders (e.g., business model design and standard accounting practices). Assistance from *Eurostat* to create a satellite account gauging employment and value-added of the SSE would prove most appropriate.

In brief, recommendations are focused upon the means -data and assessment, financial assistance and the goal –promoting the formalisation of informality and financial inclusion. There is little doubt that job formalisation and financial inclusion will first prove easier for the upper tier among informal entrepreneurs (Fields 2023) and employees endowed with human capital.

GENERAL CONCLUSION

We examine labour market dynamics for youth (15-34 years old) in Egypt and Jordan, using panel data surveys spanning from 2010 to 2018. We highlight the prevalence and the persistence of informal employment. Transitions between labour market segments display low occupational mobility and gender patterns. Multinomial logistic regressions mirror transition matrices: individuals aged 15-24 and those with low educational attainment are more likely to engage in informal employment, both as employees and self-employed individuals. According to a multidimensional employment quality, employees experience declining job quality over time.

We address financial inclusion for youths aged 15-34 in Egypt, Jordan and Tunisia from 2014 to 2021. Before the pandemic, mainly due to the lack of money and the high cost of financial services, youths experienced self-selection and financial exclusion, with respect to account holding and use of financial services. During the pandemic, the share of youth using mobile banking doubled compared with 2014 and financial inclusion improved over 2014-2021. Probit regressions highlight four main results. Before the pandemic (i) the financial inclusion of young entrepreneurs is affected by their (female) gender, (middle) income, (low) education level and country policy. During the pandemic, (ii) women became more financially included; (iii) there was no age gap for fintech; and (iv) despite the improvement of digital services, these remain unsuitable for poorly educated youth, unless they are tailored for that category.

We highlight the segmentation of MENA labour markets and financial inclusion gaps, which are linked due to a lack of human capital and related low income. The availability of unemployed youths or those trapped in informal jobs and economically inactive women is an untapped opportunity for both for-profit and social entrepreneurs belonging to the SSE.

We recommend formalisation and digitalisation approaches to promote occupational mobility and human capital development, and to foster decent job creation, driving a trickle-down effect. Matching the employers' needs and workers' skills could improve, together with a rise in productivity that would enhance labour markets and financial inclusion, while upgrading the entrepreneurs' access to markets for goods and services. Ultimately, such a virtuous circle may lead to more sustainable and inclusive growth. The formalisation drive could ideally reconcile the promotion of sustainable entrepreneurship advocated by the World Bank, with the ILO-supported expansion of social protection for informal and other non-covered workers. In this respect, partnership with the European Union will prove fruitful (European Commission, 2022).

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