

MEASURING THE IMPACT OF COVID-19 ON THE MENA REGION: LABOUR MARKET, FIRMS AND HOUSEHOLDS

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Does COVID-19 pandemic spur digital business transformation in the MENA region?



Introduction



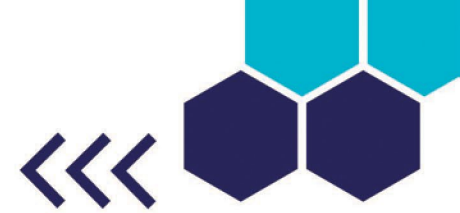
- The spread of the coronavirus (COVID-19) in 2020 is a global health crisis led to severe disturbances in business environment.
- Adopting digital technologies appeared as one of the most effective strategies to absorb the shock induced by pandemic containment measures.
- The utilization of digital technologies has increased remarkably in the MENA region by individuals, governments, and businesses (**World Bank, 2020**).
- However, the adoption of digitization in business operations in the region is anticipated to confront a wide range of challenges (**Göll and Zwiers, 2019; UNDP, 2016, and ESCWA, 2015**).

Motivations



- The old fragmented technological reality in the MENA region has been shocked by the new business environment created by the pandemic.
- The available statistics indicates that a negligible proportion of firms in MENA region adopting digital solutions.
- The digital divide in the region would lead to serious consequences on the region's economy, especially with the successive waves of the pandemic.

Research Questions



Given this background, many questions can be raised about the linkage between the COVID-19 pandemic and digitization in the MENA region:

- 1) Does the COVID-19 pandemic improve digital business transformation in the region?
- 2) To what extent does the existing digital transformation process vary across different firm sizes (i.e., small versus medium firms), firm types, and countries?
- 3) What are the determinants of adopting digital transformation among firms in MENA countries?
- 4) What are the determinants of investment in digital technologies?

Data



- To answer the research questions, we use repeated cross-section data from ILO/ERF COVID-19 MENA Monitor Enterprise Survey (CMMENT) rapid phone surveys, covering four MENA countries, namely **Egypt, Jordan, Morocco, and Tunisia**.
- The data covers 5480 firms.

Some stylized facts about firms adopted digitalization



Table 1: Number and percentage of firms adopted digitalization across countries

	Adopt digitalization			Invested in digital technologies		
Country	Total	Adopted (number)	Adopted (%)	Total	Invested (number)	Invested (%)
Jordan	1,502	717	48	611	166	27
Morocco	1,500	796	53	703	266	38
Tunisia	1,477	496	34	514	177	34
Egypt	1,001	649	65	472	146	31
Total	5,480	2,658	49	2,300	755	33

Figure 1: Firms adopted digitalization by firm size (%)

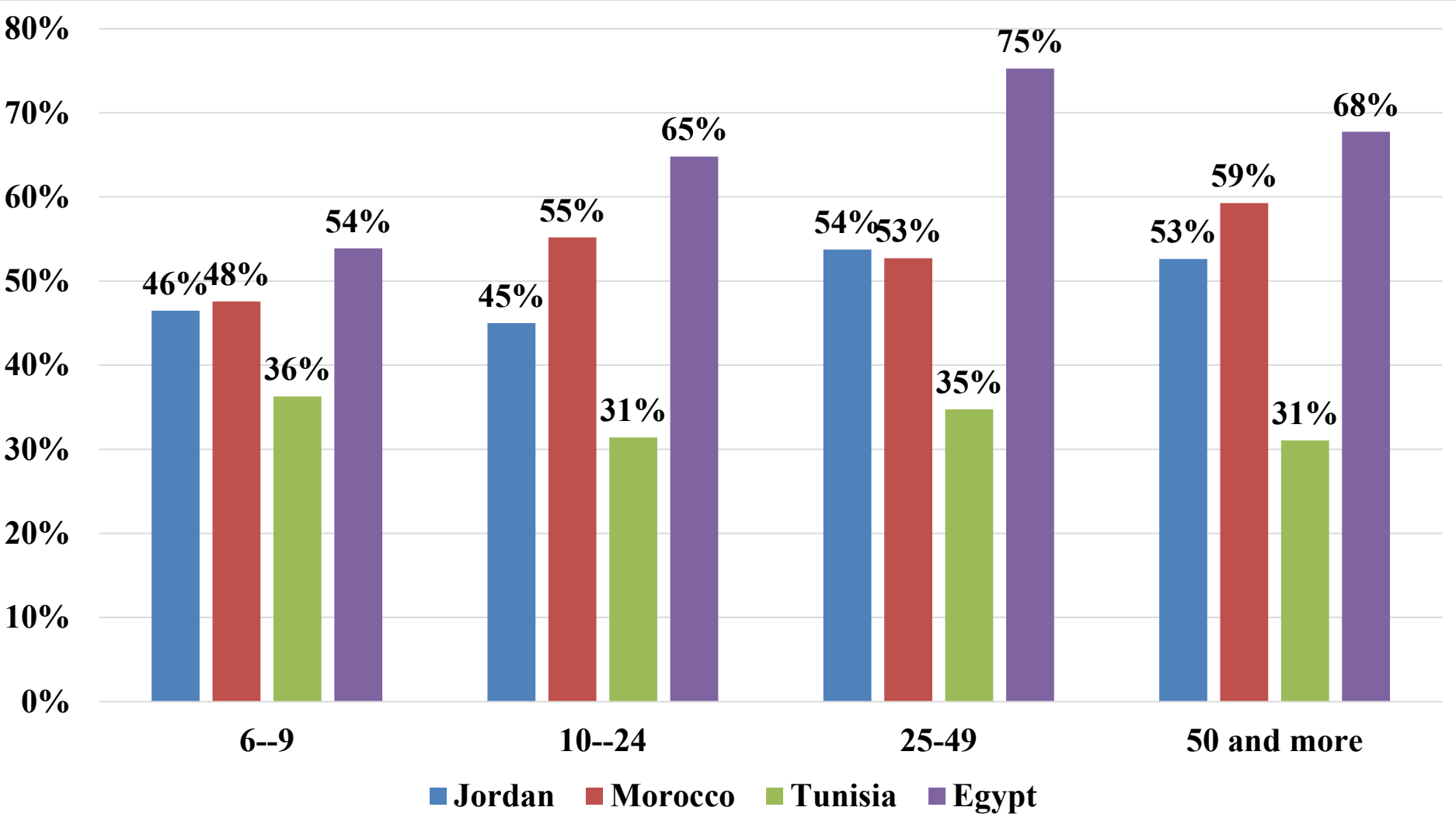
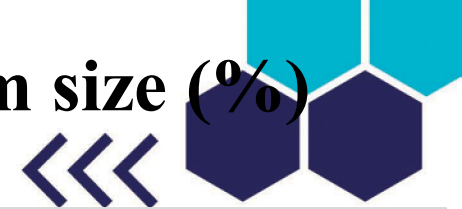


Figure 2: Distribution of digital adoption and investment (percentage of digitalized firm) by type of industry sector and country

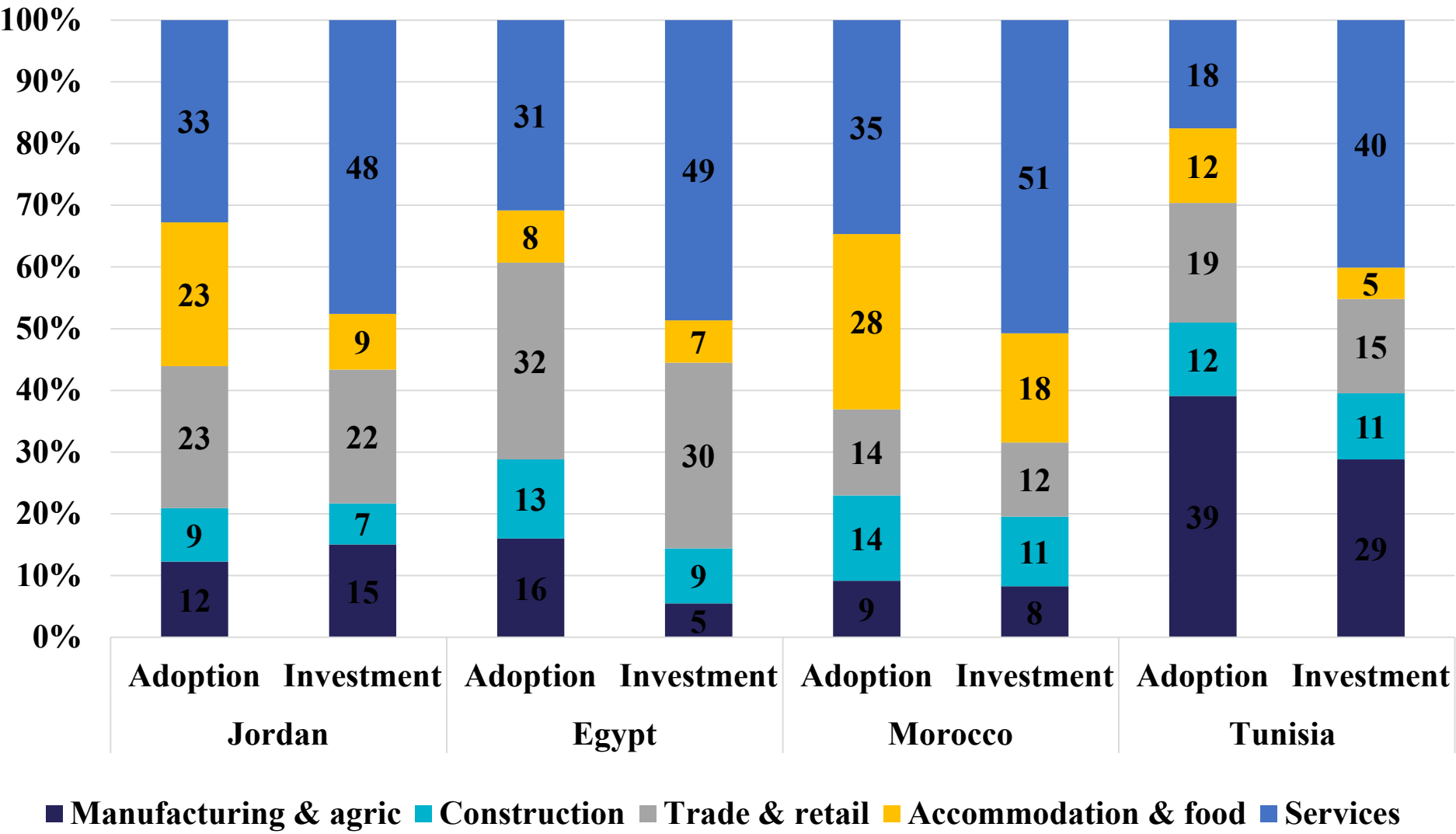
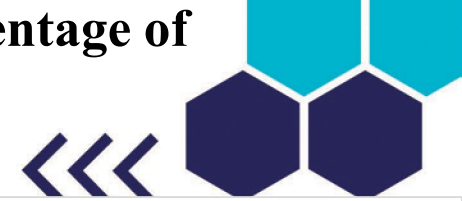


Figure 3: Firms adopted digitalization by ownership and country (%)

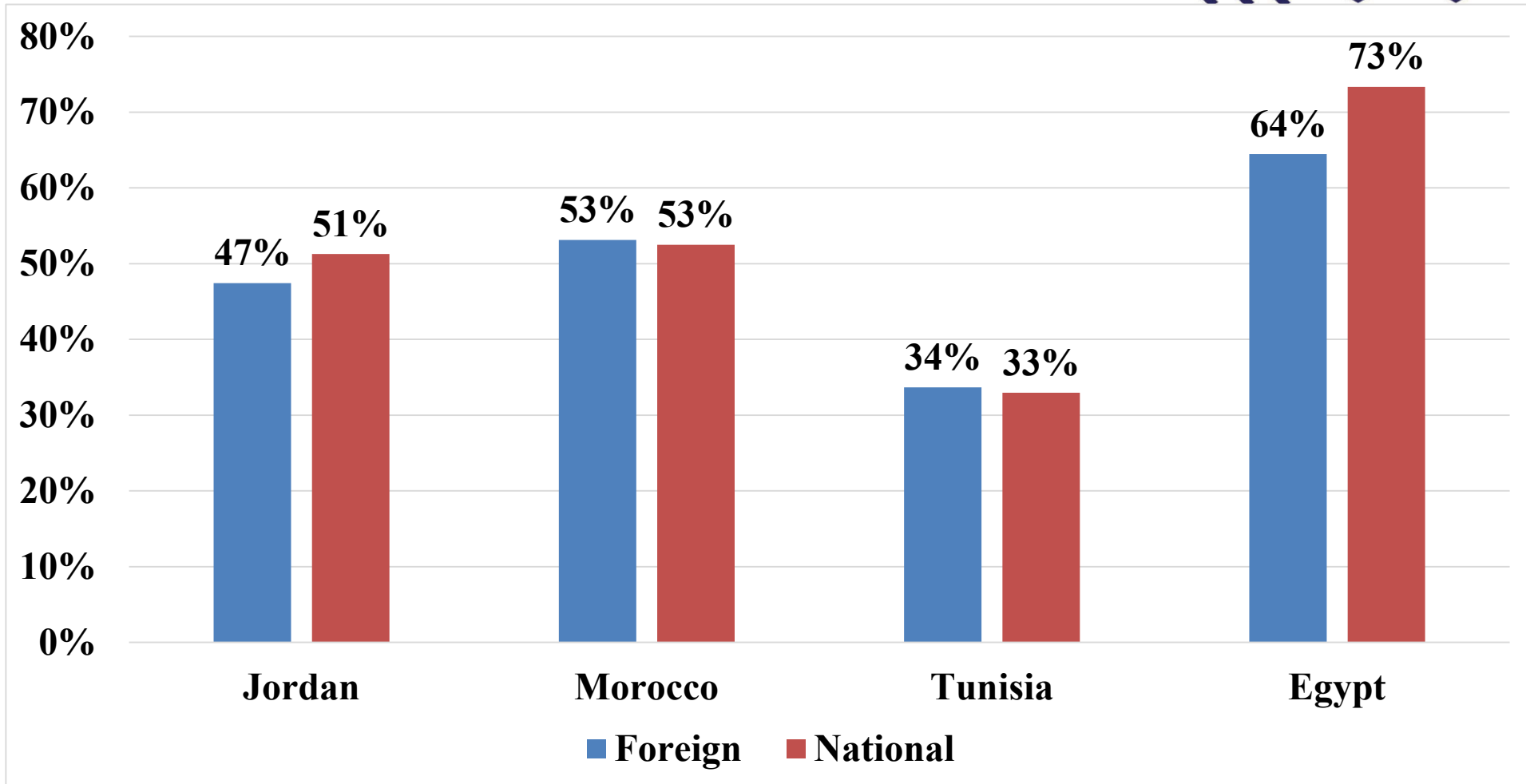
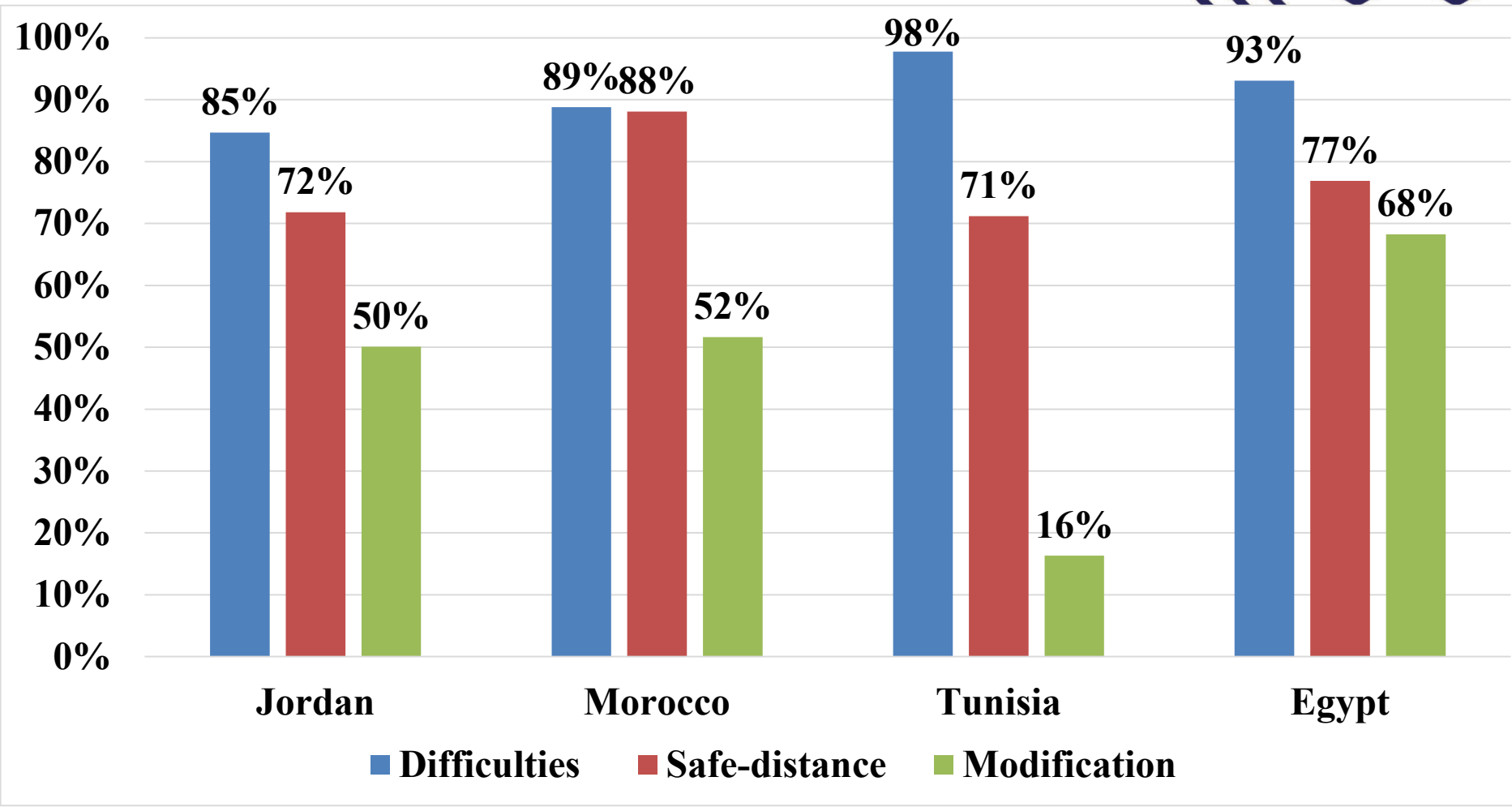


Figure 4: Digitized firms which face difficulties, adopt safe distance and product modification by country (%)





- To investigate the factors that influence a firm's decision to adopt and invest in digital solutions, we estimate the following econometric model:

$$Dig_{icw} = \alpha + X_{icw} + FE_{f(i);c \times w} + \varepsilon_{icw} \quad (1)$$

- The explanatory variables include variables such as firm size, firm ownership, whether firm export, whether the firm faces business challenges due to COVID-19 as well as government support.
- The multilevel fixed effects $FE_{f(i);c \times w}$ used to control for the **country** and **wave** of the survey fixed effects.
- Equation (1) is estimated using ordinary least squares (OLS) - the linear probability model (LPM).

Empirical Results

Table 2: Estimation results of linear probability model for the full sample

Variable	Digital adoption	Digital investment
Firm Size	0.000441 (0.0003)	0.00112** (0.0004)
Foreign ownership	0.0262 (0.0263)	0.0597* (0.0352)
Exporting	0.0269 (0.0252)	0.0185 (0.0347)
Importing	0.0777*** (0.0184)	-0.0348 (0.0261)
Large size*exporting	-0.0311 (0.0457)	0.0451 (0.0669)
Large size*importing	0.0484 (0.0387)	-0.0442 (0.0540)
Manufacturing	-0.0730*** (0.0212)	-0.0480 (0.0357)
Facing difficulties	0.111*** (0.0235)	0.0361 (0.0363)

Empirical Results

Table 2: Estimation results of linear probability model for the full sample



Modification	0.0625*** (0.0169)	0.000898 (0.0258)
Government support	0.0569*** (0.0150)	0.0333 (0.0226)
Safe distance	0.0798*** (0.0173)	0.149*** (0.0265)
Revenues decrease	0.0254 (0.0178)	-0.0454* (0.0251)
Inventory	-0.0119 (0.0171)	0.0594** (0.0265)
Constant	0.246*** (0.0264)	0.172*** (0.0411)
Country & Wave fixed effects	Yes	Yes
Observations	5,480	5,480
R-squared	0.083	0.038

Empirical Results

Table 3: Estimation results of linear probability models for phone and internet use

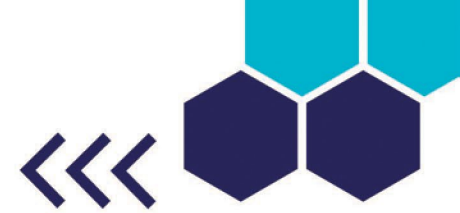
Variables	Use of phone	Use of internet
Firm Size	3.21e-05 (0.000337)	0.00100*** (0.000293)
Foreign ownership	0.0256 (0.0260)	0.0107 (0.0255)
Exporting	0.0187 (0.0249)	0.0660*** (0.0244)
Importing	0.0736*** (0.0180)	0.0706*** (0.0176)
Large size*exporting	-0.0549 (0.0452)	-0.0314 (0.0432)
Large size*importing	0.0460 (0.0375)	0.0212 (0.0359)
Manufacturing	-0.0534** (0.0211)	-0.0965*** (0.0209)
Facing difficulties	0.124*** (0.0240)	0.0837*** (0.0241)

Empirical Results

Table 3: Estimation results of linear probability models for phone and internet use

Modification	0.0489*** (0.0165)	0.0949*** (0.0162)
Government support	0.0463*** (0.0145)	0.0568*** (0.0145)
Safe distance	0.0889*** (0.0173)	0.0695*** (0.0171)
Revenues decrease	0.0304* (0.0173)	0.0148 (0.0176)
Inventory	0.00596 (0.0164)	-0.0240 (0.0165)
Constant	0.310*** (0.0270)	0.392*** (0.0271)
Country & wave fixed effects	Yes	Yes
Observations	5,480	5,480
R-squared	0.095	0.098

Results summary



- There is a strong association between the pandemic outbreak and digitization, and that the firms operating in the service are more likely to adopt digital solutions more than their counterparts in other sectors.
- The analysis show that the characteristics of the firm, including firm size and foreign ownership, spur digital transformation in business sector.
- Interestingly, firms encountering challenges, complying with pandemic containment measures, receiving support from the government are more likely to digitize.

Policy Recommendations



- Policymakers in MENA countries need to devote more efforts to facilitate the adoption of digital technologies.
- Businesses firms should be encouraged to move towards full digital transformation by granting subsidies, a preferential tax cut, and tax breaks to firms that take such initiatives.
- Governments in MENA countries should reduce the digital gap by encouraging foreign direct investment in the digital sector.
- Serious initiatives must be taken to reform education in the MINA region.

*Thank you for
your attention!*



Questions?!