



# Women's entrepreneurship in the Arab region: **Assessing the impacts of land and property ownership**



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Economic and Social Commission for Western Asia

# Women's entrepreneurship in the Arab region: **Assessing the impacts of land and property ownership**



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United Nations publication issued by ESCWA, United Nations House, Riad El Solh Square, P.O. Box: 11-8575, Beirut, Lebanon.

Website: [www.unescwa.org](http://www.unescwa.org)

# Acknowledgements

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This technical paper was primarily prepared by Ms. Elena Nikolova, independent expert and researcher on socioeconomics, labour, entrepreneurship and gender. Staff of the United Nations Economic and Social Commission for Western Asia (ESCWA) Centre for Women (ECW) also contributed to the publication, namely Ms. Nada Darwazeh, Chief of ECW, Ms. Hala Attieh, Research Assistant, and Ms. Menaal Munshey, ESCWA Regional Consultant on Gender Equality, under the overall guidance of Ms. Mehrinaz El Awady, Director of Cluster II on Gender Justice, Population and Inclusive Development.

The study also benefited from the invaluable contribution and constructive criticism of participants at an expert group meeting held online in December 2021 to discuss its preliminary findings, as well as from several rounds of internal review by ESCWA staff members, notably Mr. Marwan Khawaja, Chief of Social Statistics Section, Ms. Rouba Arja, Senior Social Affairs Officer, and Ms. Ruchika Chaudhary, Gender Economist (Economic Affairs Officer).

## Key messages



The existing evidence indicates that women who have access to land or property are more likely to be engaged in employment and entrepreneurship. Despite attempts at reform in numerous Arab countries, such as Egypt, Jordan and the State of Palestine, women's ownership of land and property remains meagre due to social expectations that they relinquish their rights in favour of male heirs.



The present report examines the link between women's entrepreneurship and land/property ownership in Egypt and Jordan. Evidence indicates that owning land or property enhances women's participation in employment and entrepreneurship in both countries. Nonetheless, limited evidence exists to suggest that owning property enhances women's bargaining power within the household or reduces incidents of gender-based violence.



The research emphasizes the importance of collecting new and reliable data to comprehend the mechanisms underlying the significance of land/property ownership for women's entrepreneurship. Additionally, there is a need to understand the linkages between women's economic inactivity, necessity entrepreneurship and opportunity entrepreneurship. The collection of new robust evidence could foster the development of enhanced policies aimed at supporting women entrepreneurs in the region.

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# Introduction

Entrepreneurship is an important means of spurring growth and prosperity for both men and women. Small business owners tend to establish businesses in new industries and serve customers that established firms may not be able to reach. Sales and employment rates grow faster in entrepreneurial ventures than in State or privatized firms, and new businesses can be more efficient. Entrepreneurship may also be an effective way of mitigating income shocks – particularly following financial crises – by providing households with an alternative source of employment.<sup>1</sup>

Entrepreneurship has a range of positive effects on economies. Entrepreneurs introduce innovations and induce economic growth. By establishing new businesses, entrepreneurs intensify competition for existing businesses. As a result, consumers benefit from the resulting lower prices and greater product variety. Entrepreneurs also stimulate employment growth by generating new jobs when they enter the market, with a more complicated, S-shaped effect on employment over time. New businesses boost productivity and encourage structural change or “creative destruction”. In addition, entrepreneurs may create entirely new markets and industries that further spur economic growth and development.<sup>2</sup>

Evidence suggests that women's entrepreneurship is important and that gender diversity at the firm level can have a positive effect on productivity and overall economic growth. For example, diverse groups are more likely to have access to non-overlapping information, and exposure to different views can lead to creativity and innovation. There is also evidence (from Scandinavia) of the positive impact of women's presence on boards and in senior management on companies' performances. Companies with more than one woman on the board returned an excess of 3.7 per cent a year since 2005 compared to those with only men.<sup>3</sup> There is little evidence to suggest that women have an inherently risk-averse approach

in company management. Companies that employ women managers may be better suited for serving consumer groups dominated by women, and more gender-diverse boards could enhance corporate governance. However, it may also be that women choose entrepreneurship not to exploit business opportunities, but rather out of necessity or due to discrimination in the workplace in terms of recruitment and lack of promotion. The impact of the latter type of entrepreneurship, also known as “necessity” entrepreneurship, on growth and innovation is unclear.<sup>4</sup> Women may also prefer entrepreneurship due to the flexibility it provides, which permits them to balance work and care responsibilities. In the Arab region, women are predominantly involved in subsistence entrepreneurship, which is found mostly in the informal sector.<sup>5</sup>



Limiting women's participation in the labour force has a very high economic cost. In particular, gender-related barriers to employment are estimated to be equivalent to a 4 per cent tax on women's labour in the average country in Europe and Central Asia but rising to the equivalent of a 53 per cent tax rate on women's labour in the average country in the Middle East and North Africa (MENA) region. For South Asia and East Asia and the Pacific, gender inequality is equivalent to effective tax rates on women's labour of 32 per cent and 11 per cent, respectively. These staggering figures highlight the extreme inefficiency of shutting women out of the labour market.<sup>6</sup>

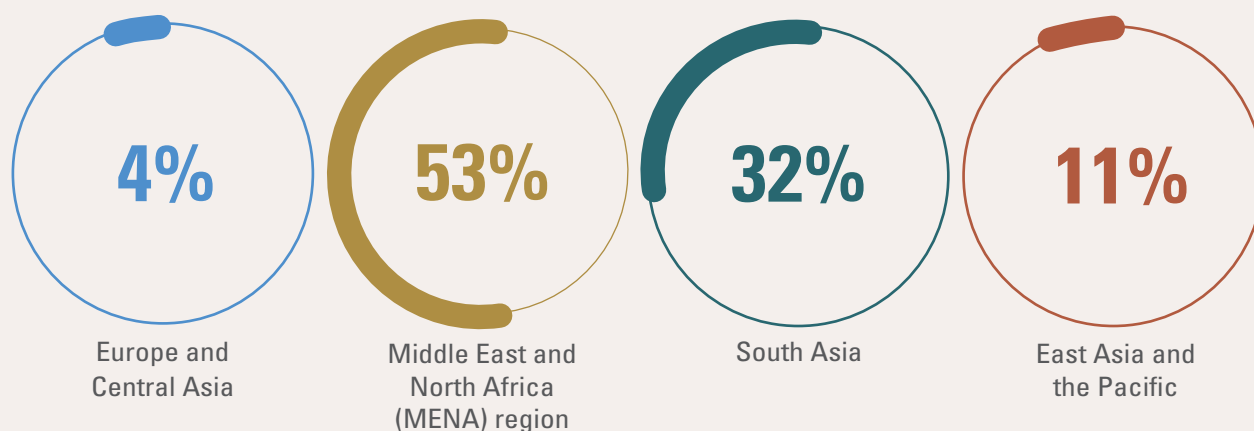
As Lagarde and Ostry (2018) point out, there is considerable microeconomic evidence that women and men bring different skills and perspectives to the workplace, such as attitudes towards risk and collaboration. Ostry and others (2018) build a model to estimate the gains to gross domestic product (GDP) from reducing gender inequality around the world. They show that for the bottom half of the countries in their sample in terms of gender inequality, closing the gender gap could increase GDP by an average of 35 per cent. Four fifths of these gains come from adding workers to the labour

force, and one fifth of the gains is due to the gender diversity effect on productivity.

The goal of this report is to investigate the link between property ownership and women's entrepreneurship in the Arab region. In particular, the report involves three inter-related steps: (1) the development of a conceptual model; (2) identifying appropriate micro-level survey data; and (3) testing the model using data from the Demographic and Health Surveys (DHS) covering Egypt (2014) and Jordan (2017–2018). The report was peer reviewed by an expert working group. Based on the findings, the report also includes recommendations for future work and further data collection on the topic.

The report is organized as follows: Section 1 presents the conceptual framework underlying this study. Section 2 presents country-level stylized facts on the link between women's land/property ownership and entrepreneurship in the Arab region. Section 3 describes the data and econometric models used to test the conceptual framework developed in section 1. Section 4 presents the results. Section 5 offers concluding remarks and policy recommendations.

### Cost of the barriers to women's employment in selected regions



# Conceptual framework



# 1. Conceptual framework

Entrepreneurship is a multi-faceted phenomenon, and different studies and data sets define it in different ways.<sup>7</sup> For instance, the Global Entrepreneurship Monitor (GEM) defines entrepreneurship as “any attempt at new business or new venture creation, such as self-employment, a new business organization, or the expansion of an existing business, by an individual, a team of individuals, or an established business”.<sup>8</sup> The conceptual framework developed in the present report takes the GEM definition as a starting point, but focuses only on individuals (or teams of individuals) and not on entrepreneurship within established businesses, which is often difficult to observe and measure.<sup>9</sup> An attractive feature of the GEM definition is that it takes a broader view of the process by not restricting entrepreneurship to only new business activity. Moreover, as defined, entrepreneurship encompasses both formal and informal enterprises, which is important in the context of the Arab region, where most economic and business activity is informal.

It is important to note that entrepreneurship, in addition to having the meaning of starting a business, includes the concept of expanding an existing business and transitioning from informal to formal status. Land ownership – or any other capital – may prompt women to move away from inactivity, unemployment or informal employment in order to start entrepreneurial activities. Since land ownership provides women with a financial buffer, it incentivizes them to pursue entrepreneurial activities through an income effect. Land ownership may also nudge women away from wage employment or home production, as women substitute their time away to activities (e.g., entrepreneurship) that they perceive to have a higher pay-off.<sup>10</sup>

## A. Factors driving women's entrepreneurship

In order to understand why women become entrepreneurs, it is useful to employ

a cost-benefit analysis to provide a consistent procedure for evaluating decisions in terms of their consequences.<sup>11</sup> Cost-benefit analysis is based on rational choice theory, which states that individuals use rational calculations to make rational choices that result in outcomes aligned with their own best interests. Adam Smith was the first economist to elaborate on rational choice theory. He developed the idea of the “invisible hand”, according to which individuals driven by self-interest and rationality will make decisions that lead to positive benefits for the whole economy.<sup>12</sup>

An individual (male or female) will become an entrepreneur provided that the perceived benefits are higher than the expected costs. As it is rarely possible to observe such decision-making directly, a solution is to proxy such costs and benefits using various individual and environmental factors. For instance, individuals more prone to risk-taking may have higher perceived returns to entrepreneurship. By contrast, starting a business in a rural area may be regarded as costly, due to higher transportation costs or lower market size.<sup>13</sup>

The perceived benefits and costs of starting a business can be financial and/or non-financial.<sup>14</sup> For instance, entrepreneurship may not only provide income-generating opportunities, but may also enable business owners to be independent and pursue a fulfilling career. Importantly, the perceived benefits and costs of entrepreneurship will differ by gender. For example, women around the world spend a higher proportion of their time on unpaid and care work in the household, which leaves less time for them to engage in productive activities, including entrepreneurship. For instance, Algerian women (aged 12+) spend on average 5.2 hours per day on unpaid household and care work and only 0.5 hours on paid work, while men (aged 12+) spend 0.9 hours on unpaid work and 3.3 hours on paid work.<sup>15</sup> Restrictive rules and regulations (both formal and informal) may present additional hurdles for women entrepreneurs. For example, in some countries in the Arab region, social and cultural practices

**Figure 1.** Drivers of women's entrepreneurship

Preferences	Endowments	External factors	Internal factors
Motivation (push/pull factors)	Assets	Legal system	Self-confidence
Goals and aspirations	Education,	Financial system	Propensity to seek credit
Personality traits	Skills and experience	Social norms (culture)	Perception of banks
Risk and time preferences	Networks and social capital	Family and social structure	Perceived availability of opportunities
Preferences for wage work			Perceived business environment
Values			

pressure women to denounce their inheritance in favour of their male siblings and deprive women of access to productive assets, such as land and property. Since land and property can be used as collateral for securing business funding, such practices increase the costs for women of starting a business and restrict the growth potential of existing women-owned businesses. Discrimination in financial access, as well as conservative gender norms, also discourage women from starting a business.

Building on the cost-benefit model of entrepreneurship, the drivers of women's entrepreneurship can be grouped into four broad groups: preferences, endowments, external constraints and internal constraints. Preferences include motivation for entrepreneurship; goals and aspirations; personality traits; risk and time preferences; preferences for wage work; and values. Endowments include assets (such as land and property); education; skills and experiences; and networks and social capital. External constraints include the legal system; financial discrimination;<sup>16</sup> social norms (cultural); and family and social responsibilities. Internal constraints include low self-confidence; reluctance to seek credit; women's negative perceptions of banks and discouraging bank rules; perceived lack of

opportunities; and a perceived hostile environment. Figure 1 schematically summarizes the drivers of women's entrepreneurship.<sup>17</sup>

Within the framework presented in figure 1, it is important to distinguish between push and pull factors. Push factors occur when women are pushed into entrepreneurship due to economic necessity, such as lack of waged or other employment opportunities, or lack of satisfaction with or discrimination in current employment. Women may also opt for self-employment in order to better balance home and work responsibilities. Pull factors arise when women take advantage of an opportunity, such as a creative business idea or entering a new market. While pull factors characterize opportunity entrepreneurs and push factors produce necessity entrepreneurs, women's entrepreneurial decisions may also combine both sets of factors.<sup>18</sup>

Some of the factors presented in figure 1 will be more impactful on nascent businesses than on existing ones.<sup>19</sup> Financial constraints will likely matter more for early-stage entrepreneurs, which is why access to assets, reluctance to seek credit and financial discrimination may be particularly important. Conversely, the success of

established businesses may depend more heavily on networks and social capital and on the personal characteristics of women owners (e.g., goals, values and self-confidence).

Similarly, the importance of the factors presented in figure 1 will be different for women necessity entrepreneurs, as compared to opportunity entrepreneurs. Necessity entrepreneurs tend to operate smaller and informal businesses; thus, they may not have access to training, financing or networks (formal or otherwise). Businesses in the informal sector will also not have recourse to the legal system when, for instance, a supplier does not honour a commitment. Meanwhile, opportunity-driven businesses tend to be larger and may be more sensitive to disadvantages in endowments (such as assets or education) and external constraints. Necessity entrepreneurs may transition into opportunity entrepreneurs with time, as has been the case in the Eastern European context.<sup>20</sup>

Such transitions are important since businesses that are driven by necessity are less likely to innovate and as a result, have a limited positive impact on economic growth (although evidence shows they are not detrimental to it).<sup>21</sup>

The distinction between necessity and opportunity entrepreneurs is particularly important in the Arab region, where most entrepreneurs are driven by necessity and operate in the informal sector. The International Labour Organization (ILO) estimates that in the Arab region, the majority of employment (68.6 per cent) and entrepreneurs (90.8 per cent) are in the informal sector. Necessity-driven businesses tend to correlate to poverty since informal enterprises have more limited access to credit from the banking sector and capital markets, which has been identified as a key reason for informal firms remaining small and unproductive.<sup>22</sup> The box below elaborates on the distinction between necessity and opportunity entrepreneurship.

### Necessity versus opportunity entrepreneurs

Women in the MENA region are largely necessity entrepreneurs and turn to entrepreneurship due to the need to supplement family income, especially when their husbands become unemployed or do not earn enough money to sustain the family. This is particularly the case for young women. In Egypt, for example, nearly 64 per cent of self-employed young people report that their main reason for becoming self-employed is a lack of other opportunities. In Jordan and Lebanon, this figure is around 23 per cent. As a result, in the Arab region, women's businesses are predominantly small, necessity-driven establishments clustered in the agricultural and handicrafts sectors and are on average smaller and more likely to be informal, compared to those of men. Necessity-driven businesses are particularly dominant in rural areas. Such small-scale businesses are seldom covered by social security systems and labour laws. A minority of women do engage in opportunity-driven entrepreneurship, which is more prevalent in Gulf Cooperation Countries.

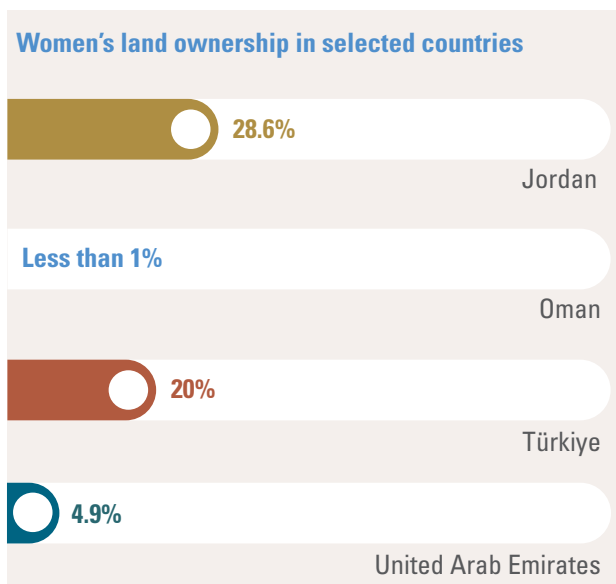
Although the distinction between necessity and opportunity entrepreneurship is particularly important in the Arab region, the literature does not offer guidelines on how these two concepts should be measured. GEM provides a question that can clarify the difference: "Are you involved in this start-up to take advantage of a business opportunity or because you have no better choices for work?" Since answers to this question are not available in the data set used in this report, it is unfortunately not possible to determine whether the identified women entrepreneurs started their businesses out of opportunity or out of necessity, or why.

Understanding how and why women in the Arab region opt for necessity versus opportunity entrepreneurship, and how they transition from one type of entrepreneurship into the other, is not yet well understood. The final section of the report provides ideas on how to expand knowledge on this issue.

**Source:** ILO, 2018; Fairlie and Fossen, 2020.

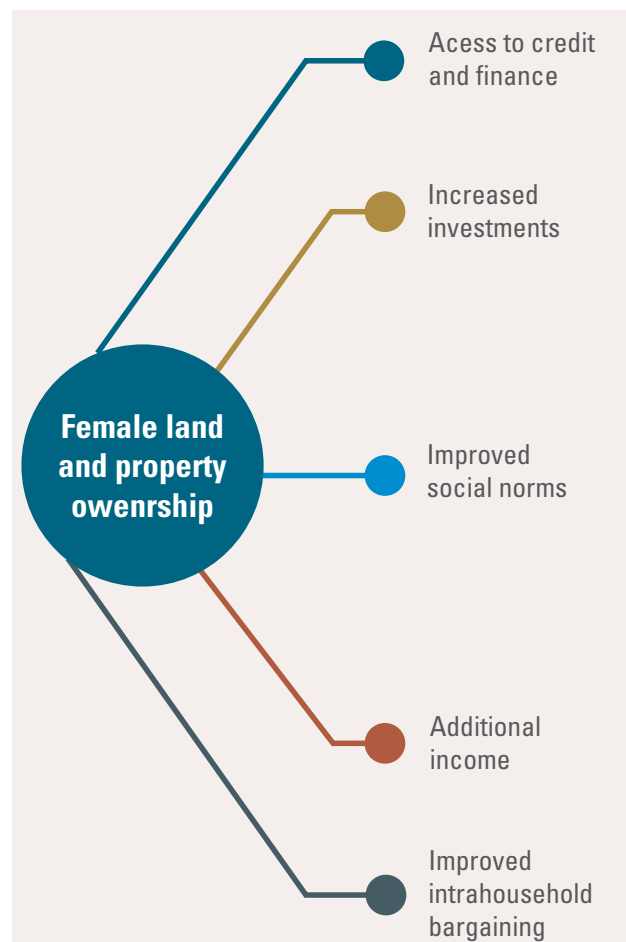
## B. Women's access to land and property and entrepreneurship

An important way to encourage women's entrepreneurship and to improve the productivity of existing enterprises is to guarantee women's access and rights to land and property. Women's land ownership varies widely in the Arab region and in other Muslim countries. In Jordan, women own 28.6 per cent of land, while in the United Arab Emirates the figure is just 4.9 per cent and in Oman less than 1 per cent. In Türkiye, women own around 20 per cent of property.<sup>23</sup> It is very important to distinguish between women's de jure versus de facto ownership of land. Even if women are entitled to land by law, they may not be aware of their rights. Alternatively, women might simply be unable to enforce their rights due to cultural reasons or the inability to register land in their name because of the high costs of traveling, mobility restrictions or illiteracy. The conceptual framework developed in the current report assumes that women have de facto land ownership. Unfortunately, this assumption cannot be tested in the empirical part of the report since the data do not provide information on whether respondents' land ownership is de jure or de facto.



There are five distinct mechanisms underlying this relationship, which are summarized in figure 2. These channels are: (1) access to credit and finance; (2) additional income; (3) increased investment; (4) improved intrahousehold bargaining; and (5) improved social norms. It is important to note that the identified relationship may be different for different types of entrepreneurship. A low-educated necessity entrepreneur selling street food may not be able to take advantage of land (even if it becomes available) in order to grow her business and transition to a formal enterprise. By contrast, a woman lawyer who inherits land or property may be able to use it effectively to expand her business. Of course, restrictive social norms may prohibit both necessity and opportunity entrepreneurs from establishing and growing their businesses.

**Figure 2.** How women's access to land and property encourages entrepreneurship





First, land and property allow women to access loans in formal credit markets since land is one of the most common forms of collateral. For instance, research from the United Arab Emirates shows that women entrepreneurs are reluctant to approach banks for credit (due to the lack of collateral) but are ready to accept collateral-free government grants and loans instead.<sup>24</sup> Among rural Bangladeshi women, 12 per cent solely or jointly own agricultural land, and 7 per cent own non-agricultural land, compared to 69 per cent and 86 per cent of rural men, respectively. As a result, women have less money and less collateral when seeking credit for entrepreneurial activities.<sup>25</sup> Although women entrepreneurs' access to credit has risen over time, the total value of credit disbursed to them annually from 2010 to 2017 was only 3 per cent of the value disbursed to male entrepreneurs in Bangladesh. Therefore, women entrepreneurs operate primarily in the informal sector and face barriers to transitioning to the formal sector.<sup>26</sup>

In Indonesia (where 87 per cent of the population is Muslim), there are restrictions on women's rights to land, ownership of property and control over capital.<sup>27</sup> This is problematic since only 1 per cent of loans in Indonesia are provided without collateral, and certificates from village heads (common in many parts of Indonesia) are not accepted.<sup>28</sup> In fact, 88 per cent of Indonesian women's households possess buildings or land that could be used as collateral, but only 21 per cent of women actually have these assets registered in their name.<sup>29</sup> To overcome such constraints, a growing number of Indonesian peer-to-peer (P2P) lending platforms provide up to \$130,000 as a non-collateralized loan, but charge high interest rates (between 7 per cent and 23 per cent). Two examples of these P2P platforms are Modalku and Koinworks. Several other P2P lending platforms, such as Kapital Boost and Crowde, do not charge interest but offer profit sharing schemes instead.<sup>30</sup> A special lending programme in Pakistan (the Agricultural Credit Program, which includes group guarantees similar to those provided by the Grameen Bank) accepts gold as a substitute for land collateral and provides small teams of mobile credit officers.<sup>31</sup>

Lower asset endowments, which inhibit women's access to external finance, may be one of the factors explaining why women entrepreneurs are concentrated in lower-performing sectors.

Research focusing on the Middle East and Africa from 2006 to 2014 shows that the availability of equity and/or debt capital improved firms' performances, and that firms owned by women had lower levels of equity and debt capital and lower leverage. However, when women-owned firms acquired more financing, their improvement in performance exceeded that of other firms, confirming that lack of access to finance is a binding constraint on performance.<sup>32</sup>

Another consequence of limited land and property ownership is that women often do not have a credit history and are underrepresented in credit bureaux and registries, which limits their access to credit even further.<sup>33</sup> It should therefore come as no surprise that banks in the MENA region have few specific programmes targeting women-led businesses.<sup>34</sup>

Second, land can also be sold or leased, and the income from such activities can be used to start a business, re-invested in an existing business, or used to invest in other businesses. The additional income can also be used to increase education,<sup>35</sup> skills and training, and networks and social capital. Land ownership can also reduce women's vulnerability to unexpected weather-related shocks, or divorce and widowhood.<sup>36</sup> Land may also serve as a business location, implying lower overhead costs, since women entrepreneurs who own land may not have to pay rent. Land located close to a woman's home may be more likely to be used as a business location, thus allowing women to effectively combine unpaid work and work outside of the home.<sup>37</sup>

Third, land ownership can also increase the productivity of existing women-owned businesses, as landowners will be more likely to make investments in their land if they are confident that the State – or other family members – cannot expropriate their holdings. For instance, women



agricultural entrepreneurs who own their land can invest in labour-saving technologies such as mechanical irrigation, thus increasing agricultural yields and increasing the time that they can spend on other productive activities.<sup>38</sup> Such investments provide women with the opportunity to transition from being a small-scale necessity farmer to a larger farming business.<sup>39</sup> Productivity improvements may also affect production models implemented by women and may push women entrepreneurs to adopt climate-resilient models of production, particularly in agriculture. For instance, security of land tenure may prompt women business owners to invest in organic agriculture.

Fourth, land and property in the hands of women could improve their positions within the household. In turn, the improvement in women's bargaining power gives women more control over decisions affecting their lives and reallocates resources towards their preferences. For instance, women who own land have greater bargaining power when it comes to their own health-care decisions, major household purchases and visits to family or relatives. Land-owning women also have lower fertility, higher mobility and report a lower incidence of domestic violence.<sup>40</sup> Furthermore, research from developing countries shows that compared to income or assets in the hands of men, income or assets in the hands of women are associated with larger improvements in child health, larger expenditure shares on household nutrients, health and housing, and reduced spending on alcohol and tobacco.<sup>41</sup> Healthier children require less unpaid care work, and thus free up time and resources for women to invest in productive activities, such as entrepreneurship. The additional income and autonomy women may gain from entrepreneurship may further improve their household bargaining power, thus creating a positive feedback loop.

Finally, women's land and property ownership may improve women's power to address external constraints, particularly when it comes to social norms about gender roles. One obstacle regularly mentioned by Lebanese women entrepreneurs was the negative societal attitude towards women business owners.<sup>42</sup> Improvements in this area

are highly relevant when considering land and property ownership, since even in the presence of an adequate legal framework, social norms may require that women transfer their property to their husbands or male relatives. In addition, social norms that restrict women's mobility – which are found in much of the Arab region<sup>43</sup> – can be detrimental when it comes to entrepreneurial growth.<sup>44</sup> If women are unable to move freely, they may also be unable to meet with suppliers or investigate outlets where they can sell their products. In addition, restrictions on women's interactions with men who are not their relatives further limit their access to credit, as credit officers are often men.<sup>45</sup> Evidence from a programme in Burkina Faso shows that women's control over and ownership of assets improved social perceptions about asset ownership, which demonstrates that social norms can be shifted.<sup>46</sup> Furthermore, research on Saudi Arabia shows that the vast majority of young married men support their wives working outside of the home. Once husbands know that other married men share the same beliefs, wives are more likely to apply for jobs outside of the home and attend interviews, switching from a home-based job to an outside job.<sup>47</sup>

Although there is no comprehensive data on how the COVID-19 pandemic has affected women's land and property ownership in the Arab region, evidence from the AIDS and Ebola epidemics suggests that widows and orphans lost property to other family members and were left homeless. Women whose husbands or fathers have died can lose these assets to male family members because they often only have legal or socially recognized rights to their land and home through a husband or male relative. In some Arab countries, women and girls are often highly dependent on male relatives to access land and property. If their male relatives are affected by the pandemic, women and girls' tenure security may further weaken due to limited legal protection, lack of documentation and restrictive social norms. Similarly, pandemics may lead to other economic assets, such as wages and savings, being reduced, making land an even more important part of overall household assets. In such situations, women may lack the financial resources, information or support to enforce their property rights.<sup>48</sup> As

a result, the expectation is that the COVID-19 pandemic will exacerbate the existing gender gaps in land ownership and entrepreneurship in the Arab region.

There are three important caveats to the conceptual framework presented in this section. First, Figure 2 and the subsequent discussion highlight the direct relationship between women's land and property ownership and the five identified channels. This is an analytical oversimplification which hides the fact that the relationship between women's land and property ownership and entrepreneurship is multi-faceted. Feedback loops are likely – for instance, social norms may determine formal

and informal women's land ownership, while the prevalence of women's land ownership may improve social norms. Second, women are not randomly assigned land ownership. Women who own land may have other unobserved characteristics, such as ability, which may also drive entrepreneurship. Given that data on such observed characteristics are unavailable, econometric techniques can be employed in order to minimize the confounding effect of such variables.<sup>49</sup> Finally, it is important to point out that it might be very difficult to establish some of the linkages identified in figure 2, either because of their complexity or because of the lack of indicators (or proxies) to allow establishing such linkages/relations.



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# Women's land ownership and entrepreneurship in the Arab region: stylized facts



## 2. Women's land ownership and entrepreneurship in the Arab region: stylized facts

### A. Women's land ownership in the Arab region

In much of the Arab region, women's rights to a defined share of inheritance are governed by the Personal Status Law, which is based in Sharia law. In practice, however, women in many Arab countries are unable to exercise their rights and access their legal shares due to cultural and social norms. The dispossession of women's inheritance is a problem in much of the Arab region, particularly in rural areas. Land grabbing following the death of a husband or father is common, and widows are sometimes deprived of access to their husband's land if they have no children.<sup>50</sup>

Women find themselves under social pressure to give up their inheritance rights to male heirs. Even when they keep their inheritance, women are encouraged to entrust it to a male relative to manage. Anecdotal evidence suggests that this is especially the case for land and property inheritance in order to avoid division of land into smaller plots or to avoid joint ownership among all inheritors, which would make it more difficult to manage. It also suggests that in many cases, women are given varying amounts of cash (or gold) in return for giving up their inheritance. While this could be a fair amount, it is rarely enough or used to buy property. Consequently, as data in section 3 will demonstrate, women's ownership of property and land is minimal in comparison to men's. The percentages of areas of land owned by women are not proportional to the shares enshrined through Sharia law. A 2017 study found that only a quarter of Jordanian women receive their full inheritance entitlement.<sup>51</sup>

To counter this, many countries in the region, including Egypt, Jordan and the State of Palestine, are making efforts to address barriers to law enforcement and property registration and institutionalize measures to protect women's

inheritance and land rights.<sup>52</sup> Egypt amended its Inheritance Law in 2017 by introducing sanctions for those who do not hand over inheritance to the heir or who intentionally refrain from giving property documents to the heir. Similarly, in 2011, Jordan introduced a law imposing a three-month waiting period following an individual's death, only after which a woman can waive her rights to inheritance.<sup>53</sup> The waiting period was further increased to four months in 2020. In the State of Palestine, similar efforts are being exerted to develop a law to address challenges that women face in accessing and controlling their inheritance. According to a statement by the Palestinian Minister of Women's Affairs in 2019, only 3 per cent of women access their legal and religious rights to their inheritance.<sup>54</sup> At the time of writing this report, no legislation had been passed. In Libya, the 1959 Law on Women's Right to Inheritance states that anyone with holding a woman's lawful share of inheritance is to be penalized by imprisonment.<sup>55</sup>

### B. Women's entrepreneurship in the Arab region

Table 1 presents a snapshot of the legal framework for women's entrepreneurship in the Arab region based on data from 2020. In all countries of the region, women can sign a contract, register a business and open a bank account in the same way as men. However, only three countries (Djibouti, Morocco and Saudi Arabia) have laws prohibiting gender discrimination in access to credit. The entrepreneurial legal framework in the Arab region is much stronger than the legal framework regulating women's ownership, inheritance of and access to assets. Three countries (Djibouti, Morocco and Saudi Arabia) have a perfect score of 100 on the entrepreneurship index, while the rest of the countries have a score of 75, which is comparable to that of Switzerland.

**Table 1.** Women, business and the law – entrepreneurship index

Economy	Entrepreneurship index score	Can a woman sign a contract in the same way as a man?	Can a woman register a business in the same way as a man?	Can a woman open a bank account in the same way as a man?	Does the law prohibit discrimination in access to credit based on gender?
Algeria	75	Yes	Yes	Yes	No
Bahrain	75	Yes	Yes	Yes	No
Comoros	75	Yes	Yes	Yes	No
Djibouti	100	Yes	Yes	Yes	Yes
Egypt	75	Yes	Yes	Yes	No
Iraq	75	Yes	Yes	Yes	No
Jordan	75	Yes	Yes	Yes	No
Kuwait	75	Yes	Yes	Yes	No
Lebanon	75	Yes	Yes	Yes	No
Libya	75	Yes	Yes	Yes	No
Mauritania	75	Yes	Yes	Yes	No
Morocco	100	Yes	Yes	Yes	Yes
Oman	75	Yes	Yes	Yes	No
Qatar	75	Yes	Yes	Yes	No
Saudi Arabia	100	Yes	Yes	Yes	Yes
Somalia	75	Yes	Yes	Yes	No
Sudan	75	Yes	Yes	Yes	No
Syrian Arab Republic	75	Yes	Yes	Yes	No
Tunisia	75	Yes	Yes	Yes	No
United Arab Emirates	75	Yes	Yes	Yes	No
West Bank and Gaza	75	Yes	Yes	Yes	No
Yemen	75	Yes	Yes	Yes	No

**Source:** World Bank, 2020.

**Notes:** The indicator-level score in column 1 is obtained by calculating the unweighted average of the questions within that indicator (columns 2-6) and scaling the result to 100. Overall scores are then calculated by taking the average of each indicator, with 100 representing the highest possible score.

Table 2 provides statistics on the share of women-owned firms (as a percentage of all firms) based on data from the World Bank Enterprise Surveys. The Enterprise Surveys only cover formal-sector firms with five or more employees, so the low figures in table 5 are not surprising, as Arab women entrepreneurs tend to be involved in low-productivity, informal businesses.

At the same time, table 2 shows that there is considerable variation across countries when it comes to women's firm ownership. Furthermore, there are different patterns when majority women-owned firms versus firms with some women owners are considered. When focusing on majority women-owned firms, Djibouti (9.97 per cent) is in the lead, followed by Lebanon (6.89 per cent) and Tunisia (6.76 per cent). Djibouti's legal framework for women entrepreneurs is very strong, but other factors – such as unfavourable attitudes and discrimination towards working women and women entrepreneurs – may also be at play. In addition, access to finance is an issue for the majority of MENA region entrepreneurs, and 57 per cent of inactive women in Djibouti say that they do not work because of family and household responsibilities.<sup>56</sup> At the bottom of the ranking are conflict-affected countries such as Yemen (where the share of majority women-owned firms is only 1.19 per cent) and the Sudan (with a corresponding figure of 2.9 per cent). When the definition is expanded to include firms with some women owners, Tunisia is in the lead (51.99 per cent), followed by Lebanon (36.96 per cent) and Morocco (27.12 per cent). The Sudan (8.24 per cent) and Yemen (7.7 per cent) are again at the bottom, with numbers in the single digits.

Although the data in table 2 do not allow for identification of the precise channels behind these differences, programmes aimed at encouraging women's entrepreneurship may be one of the reasons behind Tunisia's relative success. For instance, the Women's Enterprise for Sustainability programme, ran by the Institute of International Education (IIE) and funded

by the United States of America Department of State's Middle East Partnership Initiative ran between 2012–2018. WES provided leadership and business development training and support to over 3,500 Tunisian women across ten regions. The programme helped launch or expand more than 650 businesses and created over 1,000 job opportunities across the country.<sup>57</sup> Similarly, the Sidi Bouzid Business Center works with the Mashrou3i programme, which is led by the United Nations Industrial Development Organization (UNIDO) in partnership with the United States Agency for International Development (USAID), the Italian Government, and the HP Foundation. The programme's aim was to create 6,000 jobs and reach more than 25,000 aspiring and existing entrepreneurs in Tunisia. In addition to mentoring and technical skills training, participants have access to HP LIFE, a free online programme of the HP Foundation, which features 27 interactive modules covering business and information technology (IT) skills training in seven languages.<sup>58</sup>

Similarly, Djibouti has benefited from a 2018 World Bank project targeting small and medium-sized enterprises (SMEs) run or managed by women that produce goods marketable via e-commerce. The project further aims to ease access to finance for these SMEs by connecting them to financial institutions lending to women, particularly the International Finance Cooperation Banking on Women network. It also aims to create an ecosystem conducive to e-commerce by diagnosing regulatory, logistical and e-payment constraints and works towards eliminating them.<sup>59</sup> Recognizing the need to support the Sudan's entrepreneurs, the African Development Bank recently approved a \$15 million project to support 570 micro, SMEs owned or led by women. The enterprises will receive high-quality technical and business development training and a finance pot of up to \$11 million.<sup>60</sup> However, conflict, poverty and low education rates among women (49 per cent of girls are missing primary education)<sup>61</sup> mean that encouraging women's entrepreneurship and growing their businesses will be a challenge.

**Table 2.** Share of firms owned by women, as a percentage of all firms

Country	Year	50 per cent or more women's ownership	Some women owners (at least one)
Djibouti	2013	9.97	21.08
Egypt	2013	5.32	18.3
Egypt	2016	4.44	23.92
Jordan	2013	3.17	14.18
Lebanon	2013	6.89	36.96
Mauritania	2014	3.4	14.96
Morocco	2013	5.05	27.12
Sudan	2014	2.9	8.24
Tunisia	2013	6.76	51.99
State of Palestine	2013	3.31	11.09
State of Palestine	2019	2.24	9.76
Yemen	2013	1.19	7.7
<b>Total</b>		<b>4.73</b>	<b>21.12</b>

**Source:** World Bank Enterprise Survey Database and ESCWA, 2020.

Table 3 shows that self-employment in the Arab region (for both women and men) is significantly below the world average, and that self-employment rates in the region dropped between 1999 and 2019 at a higher rate than the global average.

Table 3 also points to an interesting pattern: Arab women are more likely to be self-employed than Arab men. However, as the Economic and Social Commission for Western Asia (ESCWA) (2019) points out, higher rates of self-employment among Arab women are driven by necessity entrepreneurship and women opting for smaller, informal businesses. As Gatti and others (2013) argue, in the MENA region, high-productivity entrepreneurs are few, and instead, individuals have a high propensity for entering subsistence self-employment, that

the productivity of their enterprises tends to be low, and that subsistence self-employment is still highly correlated with poverty. ILO estimates that in the Arab region, the majority of employment (68.6 per cent) and entrepreneurship (90.8 per cent) is in the informal sector.<sup>62</sup> The status quo is therefore a significant drawback for women, since in the informal sector, access to funding, services and markets is restricted, and informal enterprises thus stay small and unproductive. While some women entrepreneurs may opt to remain in the informal sector in order to avoid taxes and regulations, informal enterprises have a higher incidence of poverty and insecurity.<sup>63</sup> ESCWA (2020) identifies three main challenges that lie behind the trends identified in tables 5 and 6: regulatory environment; financial infrastructure; and an inadequately educated workforce.

**Table 3.** Self-employment as a percentage of total employment, by sex

Year	Global (men)	Global (women)	Arab region (men)	Arab region (women)
1999	53.8	56.9	38.9	46.0
2009	51.2	52.2	33.7	42.8
2019	47.5	46.8	29.7	34.3

Source: ILO and ESCWA, 2020.





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# Data and econometric model



### 3. Data and econometric model

The conceptual framework outlines five channels through which women's ownership of land and property may increase entrepreneurship: (1) access to credit and finance; (2) additional income; (3) increased investments; (4) improved intrahousehold bargaining; and (5) improved social norms. Using DHS data, we can investigate the broad relationship between women's land/property ownership and entrepreneurship, as well as whether land/property ownership is correlated with improved social norms (proxied by women's experience with gender-based violence (GBV)) and an improved household bargaining position for women. The DHS data do not provide data to explore channels (1), (2) and (3). Therefore, the hypotheses to be tested are:

#### H1.

Women who own land/property are more likely to be entrepreneurs.

#### H2.

Women who own land/property will have more influence in intrahousehold bargaining.

#### H3.

Women who own land/property will experience less GBV.

#### A. Data

The econometric analysis uses the most recent DHS for Jordan (2017–2018, data for both men and women are available), and Egypt (2014, only

data for women are available). The DHS are nationally-representative household surveys that provide data for a wide range of indicators in the areas of population, health and nutrition, and include information on land and house ownership, employment status, intrahousehold bargaining and GBV.

#### 1. Jordan (2017–2018) – women

The data set covers 14,689 ever-married women aged 15–49. Table 4 shows that 86.3 per cent of respondents are not working, 12.9 per cent are working for an employer, and 0.7 per cent can be classified as an entrepreneur (employers and self-employed).

**Table 4.** Women's work status, Jordan, 2017–2018

Work status	Count	Percentage
Not working	12,676	86.3
Employee	1,902	12.9
Employer	56	0.4
Self-employed	46	0.3
Unpaid family worker	5	0.0
Unpaid worker	4	0.0
<b>Total</b>	<b>14,689</b>	<b>100.0</b>

**Table 5.** Women's land and house ownership, Jordan, 2017–2018

	Land		House	
Land/house ownership	Count	Percentage	Count	Percentage
Does not own	13,460	91.6	13,080	89.0
Owens alone only	533	3.6	814	5.5
Owens jointly only	557	3.8	455	3.1
Owens both alone and jointly	139	0.9	340	2.3
<b>Total</b>	<b>14,689</b>	<b>100.0</b>	<b>14,689</b>	<b>100.0</b>

Table 5 further illustrates that very few interviewed women own land or a house. Less than 10 per cent of women own land (either alone only, jointly only, or both alone and jointly), and 11 per cent of women own a house (either alone only, jointly only, or both alone and jointly).

## 2. Jordan (2017–2018) – men

The data set covers 6,429 men aged 15–59. Table 6 shows that the majority of men (54.4 per cent of respondents) are working, and 6 per cent can be classified as an entrepreneur (employers and self-employed).

**Table 6.** Men's work status, Jordan, 2017–2018

Work status	Count	Percentage
Not working	2,934	45.6
Employee	3,102	48.3
Employer	170	2.6
Self-employed	213	3.3
Unpaid family worker	9	0.1
Unpaid worker	1	0.0
<b>Total</b>	<b>6,429</b>	<b>100.0</b>

**Table 7.** Men's land and house ownership, Jordan, 2017–2018

Land/house ownership	Land		House	
	Count	Percentage	Count	Percentage
Does not own	5,110	79.5	4,182	65.0
Owens alone only	1,058	16.5	2,002	31.1
Owens jointly only	209	3.3	160	2.5
Owens both alone and jointly	52	0.8	85	1.3
<b>Total</b>	<b>6,429</b>	<b>100.0</b>	<b>6,429</b>	<b>100.0</b>

Table 7 illustrates that around 20 per cent of men own land (with 16.5 per cent owning land alone), and around 35 per cent of men own a house (with 31 per cent owning a house alone).

per cent of respondents are not working, 13.9 per cent are working for an employer or for a family member, and 2.4 per cent are self-employed.<sup>64</sup>

### 3. Egypt (2014) – women only

The data set covers 21,762 ever-married women aged 15–49. Table 8 shows that 83.8

Table 9 illustrates that less than 2 per cent of women own land and less than 6 per cent of women own a house (either alone only, jointly only, or both alone and jointly).

**Table 8.** Women's work status, Egypt, 2014

Work status	Count	Percentage
Not working	18,228	83.8
Working for family member	360	1.7
Working for someone else	2,645	12.2
Self-employed	529	2.4
<b>Total</b>	<b>21,762</b>	<b>100.0</b>

**Table 9.** Women's land and house ownership, Egypt, 2014

Land/house ownership	Land		House	
	Count	Percentage	Count	Percentage
Does not own	21,370	98.2	20,498	94.2
Owens alone only	138	0.6	578	2.7
Owens jointly only	233	1.1	578	2.7
Owens both alone and jointly	21	0.1	108	0.5
<b>Total</b>	<b>21,762</b>	<b>100.0</b>	<b>21,762</b>	<b>100.0</b>

## B. Empirical specification

### 1. Dependent variables and empirical approach

Entrepreneurship and employment: Regression analysis is utilized to investigate the relationship between property ownership and entrepreneurship. Two binary dependent variables are defined: (1) whether the woman is an entrepreneur, conditional on being employed (1 – for self-employed and employer; 0 otherwise); and (2) whether the woman is employed (1 employed, 0 otherwise). Separate ordinary least squares (OLS) regressions are run for each of the dependent variables.<sup>65</sup>

While this econometric setup is simple and straightforward, from a conceptual point of view, the decision to become an entrepreneur is preceded by the decision of whether one wishes to be employed or not. In other words, the sample of entrepreneurs observed is not random. In order to correct for this selection bias, a Heckman correction is applied to regression (1), taking into account that deciding to be employed is not independent of, but rather a necessary condition for being an entrepreneur.<sup>66</sup>

Household bargaining: The following information is used to proxy for the extent to which the respondent is involved in decision-making within the household: (1) the person who usually decides on the respondent's health care; (2) the person who usually decides on large household purchases; (3) the person who usually decides on visits to family or relatives; and (4) the person who usually decides on what to do with money the spouse earns. For each of the four variables, the responses are coded as follows: 1 – if the respondent decides; 2 – if the respondent and partner decide, and 3 – if the partner or someone else decides. The four responses are then averaged to create an index, where lower values indicate more household bargaining power for the respondent and higher values indicate less bargaining power for the respondent.

GBV:<sup>67</sup> Three indicators of GBV are examined: emotional violence, physical violence and sexual violence. Emotional violence covers the following

questions: (1) Ever been humiliated by husband/partner; (2) Ever been threatened with harm by husband/partner; and (3) Ever been insulted or made to feel bad by husband/partner.

Physical violence covers the following questions: (1) Ever been pushed, shaken or had something thrown by husband/partner; (2) Ever been slapped by husband/partner; (3) Ever been punched with fist or hit by something harmful by husband/partner; (4) Ever been kicked or dragged by husband/partner; (5) Ever been strangled or burnt by husband/partner; (6) Ever been threatened with knife/gun or other weapon by husband/partner; and (7) Ever had arm twisted or hair pulled by husband/partner.

Sexual violence covers the following questions: (1) Ever been physically forced into unwanted sex by husband/partner; (2) Ever been forced into other unwanted sexual acts by husband/partner; and (3) Ever been physically forced to perform sexual acts when the respondent did not want to. The latter two questions are only available for the sample of Egyptian women.

The respondent's experience with domestic violence is evaluated over the last year and over her lifetime. For the respondent's experience over a lifetime, answers indicating "never" are given a value of 0, while answers indicating "sometimes", "often", "yes, but not in the last 12 months," and "yes, but frequency in last 12 months missing" are coded as 1. For the respondent's experience over the last year, the last two options ("yes, but not in the last 12 months", and "yes, but frequency in last 12 months missing") are coded as 0. The responses are then combined in three separate variables (indicating emotional, physical or sexual violence), which take a value of 1 if the respondent reports at least one instance of emotional, physical or sexual violence, respectively, and 0 otherwise. Higher values indicate an increased experience of GBV. For instance, if the respondent reports being slapped by a husband or partner, the variable capturing "physical violence" takes a value of 1. It also takes a value of 1 if the respondent reports being strangled or burnt by husband or partner, and higher values indicate more GBV.<sup>68</sup>

## 2. Independent variables

The two main independent variables of interest are: (1) whether the woman owns land (which is equal to 1 if she owns it either alone, jointly, or both alone and jointly, and 0 otherwise); and (2) whether the woman owns a house (which is equal to 1 if she owns it either alone, jointly, or both alone and jointly, and 0 otherwise).<sup>69</sup>

Control variables: Furthermore, the regressions control for a set of additional independent variables that may be correlated with land and property ownership. These include (1) age and age squared; (2) a dummy for urban location (1 – urban, 0 – rural); (3) education (1 if the respondent has achieved secondary education and above, 0 otherwise); (4) a self-reported wealth index (on a scale of 1 (poorest) to 5 (richest)); (5) the number of household members; (6) the number of children under 5 years of age in the household (available only for the women's samples); (7) whether the respondent has a bank account (1 – yes, 0 – no); (8) marital status (1 if the respondent is married, and 0 if the respondent is widowed, divorced or separated);<sup>70</sup> and (9) the husband's work status or entrepreneurial status

(the latter data are available only for the sample of Jordanian women).

To account for the fact that employment and entrepreneurship patterns (for both women and men) may be driven by regional factors, such as industrial concentration or geographic suitability for agriculture, the regressions also include dummies at the levels of sub-national regions.

## 3. Econometric model

The econometric model employed in the regressions below is as follows:

$$\text{DepVar}_{i,r} = \delta_0 + \delta_1 \text{Land}_{i,r} + \delta_2 \text{House}_{i,r} + X_{i,r} \delta_3 + \gamma_r + \varepsilon_{i,r},$$

where for each individual  $i$  (woman or man) in sub-national region  $r$ ,  $\text{DepVar}_{i,r}$  is one of the four dependent variables (entrepreneurship, employment, household bargaining, or GBV);  $\delta_0$  is the intercept,  $\text{Land}_{i,r}$  is a dummy variable capturing whether the individual owns land,  $\text{House}_{i,r}$  is a dummy variable capturing whether the individual owns a house,  $X_{i,r}$  is a matrix of control variables described above,  $\gamma_r$  are a set of dummies at the level of sub-national regions, and  $\varepsilon_{i,r}$  is the error term.

# Results



4

## 4. Results

This section presents the main themes that emerge from the empirical analysis. A detailed and more technical discussion of the results is presented in Annex 3.

### A. Employment and entrepreneurship

#### 1. Jordanian women (2017–2018) and Egyptian women (2014)

Tables 10 and 11 present the results of the correlation between land/house ownership and

employment in Jordan and Egypt, respectively. Table 10 shows that land (but not house ownership) is positively correlated with women's employment in Jordan, and that both land and house ownership are positively correlated with women's employment in Egypt. Women who are wealthier and have a bank account are also more likely to be employed, although these patterns may be due to the fact that employment increases wealth and often necessitates opening a bank account. Women with more children and who are married are less likely to be employed, likely due to the extra demands of unpaid household and care work. Women with higher education are more likely to be employed in Egypt, but not in Jordan.

**Table 10.** Land/house ownership and employment, Jordanian women

	(1)	(2)	(3)
	coef/se	coef/se	coef/se
Owns land	0.021** (0.010)		0.022* (0.012)
Owns house	0.001 (0.012)	0.008 (0.013)	
Bank account	0.363*** (0.035)	0.364*** (0.035)	0.363*** (0.034)
Husband employed	-0.004 (0.018)	-0.004 (0.018)	-0.004 (0.018)
Age	0.030*** (0.004)	0.030*** (0.004)	0.030*** (0.004)
Agesq	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)
Urban	-0.005 (0.010)	-0.005 (0.010)	-0.005 (0.010)
Secondary education and above	-0.029 (0.020)	-0.029 (0.020)	-0.029 (0.020)



	(1)	(2)	(3)
	coef/se	coef/se	coef/se
Wealth index	0.017*** (0.002)	0.017*** (0.002)	0.017*** (0.002)
Married	-0.092*** (0.016)	-0.092*** (0.016)	-0.092*** (0.016)
Number of children under 5	-0.008*** (0.003)	-0.007*** (0.003)	-0.008*** (0.003)
Number of household members	-0.006 (0.005)	-0.006 (0.005)	-0.006 (0.005)
	(0.005)	(0.005)	(0.004)
_cons	-0.255*** (0.053)	-0.254*** (0.053)	-0.255*** (0.053)
Number of observations	14,689	14,689	14,689
R <sup>2</sup>	0.225	0.225	0.225

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 11.** Land/house ownership and employment, Egyptian women

	(1)	(2)	(3)
	coef/se	coef/se	coef/se
Owns land	0.043** (0.017)		0.061*** (0.011)
Owns house	0.045** (0.019)	0.052*** (0.016)	
Bank account	0.089*** (0.008)	0.090*** (0.008)	0.090*** (0.008)
Age	0.026*** (0.003)	0.026*** (0.003)	0.026*** (0.003)
Agesq	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)
Urban	-0.003 (0.002)	-0.003 (0.003)	-0.003 (0.002)

	(1)	(2)	(3)
	coef/se	coef/se	coef/se
Secondary education and above	0.075***	0.076***	0.075***
	(0.003)	(0.003)	(0.003)
Wealth index	0.015***	0.014***	0.014***
	(0.004)	(0.004)	(0.004)
Married	-0.089***	-0.089***	-0.097***
	(0.025)	(0.025)	(0.024)
Number of children under 5	0.004***	0.004***	0.004***
	(0.001)	(0.001)	(0.001)
Number of household members	-0.003	-0.003	-0.003
	(0.004)	(0.004)	(0.004)
_cons	-0.436***	-0.434***	-0.425***
	(0.036)	(0.034)	(0.039)
Number of observations	20,688	20,688	20,688
R <sup>2</sup>	0.056	0.056	0.055

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

Importantly, women who own land in Jordan, and land or a house in Egypt, are more likely to be entrepreneurs (tables 12 and 13). Unfortunately, the data do not allow determining the precise reason for this result. As argued in section 1 (Conceptual framework), it is possible that land is used as a collateral in order to access business loans. Alternatively, it could be that land is used as a space for business premises, either for office-based or agricultural-based businesses. Women whose husbands are entrepreneurs are more likely to be entrepreneurs,<sup>71</sup> possibly because both partners work in family-owned businesses. Women living in urban locations are more likely to be entrepreneurs in Jordan, but less likely to be entrepreneurs in Egypt. Surprisingly, wealth is not related to entrepreneurship in either country. This may indicate that women do not

have control over household resources and thus cannot use them to start or grow a business. In line with this interpretation, subsequent analysis shows that wealth and entrepreneurship are positively correlated in the sample of Jordanian men.

Education or a woman's number of children do not seem to affect the woman's decision to be an entrepreneur in Jordan, and education is negatively correlated with entrepreneurship in Egypt. Furthermore, bank account ownership does not seem to encourage entrepreneurship in Jordan. The education pattern, along with the discouraging/no effect of bank account ownership, could be consistent with the prevalence of informal or agricultural-based businesses which demand fewer specialized skills.

**Table 12.** Land/house ownership and entrepreneurship, Jordanian women

	(1)	(2)	(3)	(4)	(5)	
	coef/se	coef/se	coef/se	Heckman	select	mills
Owens land	0.050** (0.021)		0.050** (0.022)	0.048** (0.023)	0.113* (0.066)	
Owens house	0.002 (0.008)	0.015* (0.009)		-0.001 (0.022)	0.040 (0.061)	
Bank account	-0.112*** (0.016)	-0.110*** (0.015)	-0.112*** (0.016)	0.319*** (0.068)	1.635*** (0.041)	
Husband entrepreneur	0.124*** (0.031)	0.128*** (0.034)	0.123*** (0.031)	0.125*** (0.017)		
Age	-0.001 (0.011)	-0.001 (0.011)	-0.001 (0.011)	0.073*** (0.015)	0.279*** (0.024)	
Agesq	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.001*** (0.000)	-0.004*** (0.000)	
Urban	0.025* (0.013)	0.026** (0.013)	0.025* (0.013)	-0.011 (0.018)	-0.124*** (0.047)	
Secondary education and above	0.011 (0.034)	0.012 (0.035)	0.011 (0.034)	0.040 (0.031)	0.066 (0.077)	
Wealth index	-0.004 (0.008)	-0.003 (0.008)	-0.004 (0.008)	0.000 (0.006)	0.016 (0.017)	
Married	(dropped)	(dropped)	(dropped)	(dropped)	3.765*** (0.504)	
Number of children under 5	0.009 (0.016)	0.009 (0.016)	0.009 (0.017)	-0.011 (0.008)	-0.003 (0.022)	
Number of household members	0.003 (0.002)	0.003 (0.002)	0.003 (0.002)	-0.013*** (0.005)	-0.052*** (0.011)	
Husband employed					2.596*** (0.294)	
lambda						0.336*** (0.054)
_cons	0.011 (0.254)	0.021 (0.242)	0.011 (0.253)	-1.833*** (0.350)	-12.798	
Number of observations	1,482	1,482	1,482	14,158		
R <sup>2</sup>	0.113	0.109	0.113			

**Note:** \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

**Table 13.** Land/house ownership and entrepreneurship, Egyptian women, 2014

	(1)	(2)	(3)	(4)	(5)	
	coef/se	coef/se	coef/se	Heckman	select	mills
Owens land	0.035**		0.062**	-0.126	0.103	
	(0.018)		(0.029)	(0.251)	(0.078)	
Owens house	0.065**	0.072**		-0.239	0.142***	
	(0.030)	(0.034)		(0.233)	(0.046)	
Bank account	0.027	0.028	0.030	-0.512	0.277***	
	(0.018)	(0.019)	(0.020)	(0.402)	(0.036)	
Age	0.021**	0.021**	0.021*	-0.305	0.151***	
	(0.010)	(0.010)	(0.011)	(0.238)	(0.012)	
Agesq	-0.000*	-0.000*	-0.000*	0.003	-0.002***	
	(0.000)	(0.000)	(0.000)	(0.003)	(0.000)	
Urban	-0.060***	-0.060***	-0.061***	0.153	-0.083**	
	(0.010)	(0.011)	(0.011)	(0.160)	(0.035)	
Secondary education and above	-0.183***	-0.182***	-0.183***	-0.913*	0.359***	
	(0.018)	(0.017)	(0.018)	(0.546)	(0.028)	
Wealth index	-0.004	-0.005	-0.004	-0.185	0.083***	
	(0.003)	(0.003)	(0.003)	(0.128)	(0.013)	
Married	-0.087***	-0.088***	-0.100***	0.472	-0.283***	
	(0.030)	(0.030)	(0.032)	(0.420)	(0.042)	
Number of children under 5	0.004	0.004	0.005	-0.047	0.023	
	(0.005)	(0.005)	(0.005)	(0.057)	(0.015)	
Number of household members	-0.002	-0.002	-0.003	0.043	-0.020***	
	(0.007)	(0.007)	(0.007)	(0.038)	(0.006)	
lambda						-2.574
						(1.881)
_cons	-0.033	-0.029	-0.010	10.795	-4.190***	
	(0.113)	(0.112)	(0.121)	(7.854)	(0.213)	
Number of observations	3,414	3,414	3,414	20,689		
R <sup>2</sup>	0.085	0.085	0.083			

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

## 2. Jordanian men (2017–2018)

Table 14 shows that Jordanian men who own land are less likely to be employed compared to those who do not. This result contrasts with the pattern identified for Egyptian and Jordanian women, where land ownership is positively correlated with employment. One possibility is that men may sell off land in order to cover living and other expenses. Although there is no data to investigate this hypothesis, table 14 also shows that wealthier men are less likely to be employed, which is consistent with the idea that more assets reduce employment among men. Married men are more likely to be employed, while age has an inverted U-shape effect on employment. Men in households with more household members are less likely to be employed.

As in the case of women, Jordanian men who own land are more likely to be entrepreneurs (table 15). While there is no evident correlation between wealth and women's entrepreneurship in Jordan, wealthier men are more likely to be entrepreneurs. As discussed above, men may have more control over household wealth, compared to women, and can therefore use it to start businesses or to offset income loss associated with entrepreneurship. Bank account ownership is negatively correlated with entrepreneurship in the men's sample, possibly because the majority of businesses in the sample are informal (though the data do not allow the distinction between formal and informal businesses). Married men are more likely to be entrepreneurs, and entrepreneurship decreases with age, exhibiting a U-shaped effect.

**Table 14.** Land/house ownership and employment, Jordanian men

	(1)	(2)	(3)
	coef/se	coef/se	coef/se
Owens land	-0.035*** (0.013)		-0.043*** (0.008)
Owens house	-0.015 (0.030)	-0.028 (0.026)	
Bank account	0.245*** (0.019)	0.245*** (0.019)	0.244*** (0.021)
Age	0.086*** (0.006)	0.086*** (0.006)	0.086*** (0.006)
Agesq	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)
Urban	0.008 (0.016)	0.010 (0.016)	0.009 (0.015)
Secondary education and above	-0.017 (0.018)	-0.017 (0.018)	-0.018 (0.018)
Wealth index	-0.017*** (0.005)	-0.017*** (0.005)	-0.017*** (0.006)
Married	0.207*** (0.026)	0.207*** (0.026)	0.204*** (0.020)
Number of household members	-0.004** (0.002)	-0.004** (0.002)	-0.004** (0.002)
_cons	-1.046*** (0.100)	-1.053*** (0.102)	-1.046*** (0.100)
Number of observations	6,429	6,429	6,429
R <sup>2</sup>	0.368	0.368	0.368

**Note:** \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

**Table 15.** Land/house ownership and entrepreneurship, Jordanian men

	(1)	(2)	(3)	(4)	(5)	
	coef/se	coef/se	coef/se	Heckman	select	mills
Owns land	0.052***		0.064***	0.057***	-0.131**	
	(0.015)		(0.015)	(0.015)	(0.061)	
Owns house	0.023	0.041***		0.015	0.062	
	(0.014)	(0.016)		(0.014)	(0.059)	
Bank account	-0.071**	-0.072**	-0.068**	-0.130***	0.922***	
	(0.035)	(0.035)	(0.034)	(0.031)	(0.043)	
Age	-0.010*	-0.010*	-0.010*	-0.019*	0.280***	
	(0.006)	(0.006)	(0.006)	(0.011)	(0.011)	
Agesq	0.000**	0.000**	0.000***	0.000**	-0.004***	
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	
Urban	0.005	0.001	0.003	0.016	0.030	
	(0.020)	(0.020)	(0.019)	(0.014)	(0.049)	
Secondary education and above	-0.041	-0.045	-0.040	-0.027	0.0124**	
	(0.031)	(0.032)	(0.032)	(0.019)	(0.060)	
Wealth index	0.023***	0.024***	0.024***	0.020***	-0.036**	
	(0.002)	(0.002)	(0.002)	(0.005)	(0.015)	
Married	0.048***	0.048***	0.054***	-0.001	0.599***	
	(0.010)	(0.010)	(0.010)	(0.023)	(0.063)	
Number of household members	0.002	0.002	0.002	0.005*	-0.030***	
	(0.002)	(0.003)	(0.003)	(0.003)	(0.009)	
lambda						-0.100
						(0.066)
_cons	0.128	0.135	0.125	0.400	-4.828***	
	(0.104)	(0.108)	(0.103)	(0.244)	(0.217)	
Number of observations	3,495	3,495	3,495	6,429		
R <sup>2</sup>	0.073	0.071	0.072			

**Note:** \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

## B. Household bargaining and gender-based violence

Tables A1.2-A1.8 in Annex 1 investigate the correlation between land/house ownership and

household bargaining and GBV. Overall, the results indicate that land/house ownership has different effects on household bargaining and experiences of GBV in Jordan and Egypt.

In the sample of Jordanian women, land/house ownership does not improve women's

bargaining position in the household or reduce their experiences of GBV. Table A1.2 shows that land/house ownership does not correlate with women's bargaining position in the household. Similarly, tables A1.4 and A1.5 show that there is no correlation between land/house ownership and women's experience of emotional, physical and sexual violence (ever or in the last year). Table A1.5 shows that men's land/house ownership is not correlated with higher household bargaining power for women.

Among Egyptian women, land/house ownership improves women's household bargaining position, but does not seem to correlate with their experience of GBV. Table A1.6 shows that women who own a house or land have stronger bargaining power within the household in Egypt. Similarly, land/house ownership among women makes the likelihood of GBV experience (ever) lower, though coefficients are not always precisely estimated (table A1.7).

## C. Assessing the findings in a global context

The existing scholarship from around the world largely shows that land/house ownership increases women's employment and entrepreneurship. In contrast with this report's findings, most of the evidence suggests that women's access to land and property increases their bargaining power and decreases experiences of GBV. However, Anderson and Genicot's (2014) study on India, which found that inheritance reform in India increased GBV and intensified intrahousehold conflicts, partially echoes the results of this report.

Much of the literature argues that granting women rights to property ownership empowers them, increases their autonomy and increases gender equality. Several authors examine the impact of the Hindu Succession Act (HSA) in India.<sup>72</sup> Heath and Tan (2019) show that the HSA improved women's autonomy within the household and increased their labour supply, particularly in high-paying jobs. Roy (2015) and Deininger and others (2013) find that

the HSA increased girls' access to education. By contrast, according to Rosenblum's research in 2015, the HSA led to an increase in female child mortality, due to a reduction in parents' investment in their daughters' health, particularly for those who preferred to pass on their property to their sons.

In Indonesia, Carranza (2012) explores the effect of a 1994 reform which modified the Islamic inheritance exclusion rule and allowed daughters to exclude the male relatives of the deceased. Prior to the reform, son preference and high fertility among Muslim couples may have arisen from incentives to exclude the extended family from inheritance wealth. After the reform, Indonesian Muslim couples decreased the use of son-biased fertility stopping rules. Similarly, Harari (2019) explores the results of a reform in Kenya which in 1981 gave women and men equal inheritance rights, and in 1990 was amended to allow Muslims to revert to Koranic law. She finds that women impacted by the reform are more educated, less likely to undergo genital mutilation, more likely to receive prenatal care, and delay marriage and childbearing. They also tend to participate more in family decisions, suggesting improved bargaining power as the main channel. These findings are consistent with the studies discussed in the conceptual framework (focusing on Nepal and Vietnam), which find that women who own land have stronger bargaining power in decision-making when it comes to their own healthcare decisions, major household purchases, and visits to family or relatives. Land-owning women also have lower fertility rates, higher mobility and report a lower incidence of domestic violence.<sup>73</sup>

By contrast, Bahrami-Rad (2021) does not find that property ownership is associated with positive outcomes for women in India. The main argument is that when a woman inherits property, her male relatives are more likely to arrange her marriage within the same community in order to avoid fragmentation of the land. Arranging the marriage also requires controlling the woman's relations and mobility, which negatively impacts her economic participation. Using the HSA and evidence from Indonesia, the author finds that female inheritance leads to lower female economic

participation, a higher prevalence of cousin and arranged marriages, as well as lower rates of women's economic participation and premarital relations. Consistent with the present report's findings for Jordanian men, Bahrami-Rad (2021) also finds that male inheritance is associated with higher self-employment and lower private/public sector employment in the men's sample. However, he finds no effect of women's inheritance on their employment or self-employment.

## D. Robustness checks

Tables A3.1 to A3.3 in Annex 3 conduct robustness checks using the Oster (2019) method. The main takeaway from the tables is that the entrepreneurship results in the women's samples are robust and thus likely to be causal, while this conclusion is more tentative in the men's sample.



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# Conclusion and policy recommendations



## 5. Conclusions and policy recommendations

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This report examines how land/house ownership affects women's entrepreneurship in the Arab region, with a specific focus on Egypt and Jordan. It first develops a conceptual framework identifying five distinct mechanisms underlying this relationship: (1) access to credit and finance; (2) additional income; (3) increased investments; (4) improved intrahousehold bargaining; and (5) improved social norms. It then uses data from the DHS from Jordan (2017–2018) and Egypt (2014) to test some of these mechanisms, and probes the robustness of the results using the Oster (2019) method. The analysis provides strong evidence – which is likely to be causal – that land/house ownership increases women's employment and entrepreneurship in both Jordan and Egypt, while decreasing men's employment and increasing entrepreneurship in Jordan. However, there is little evidence that land/house ownership increases women's bargaining position in the household or that it decreases GBV.

A recent review of the available evidence on the link between women's land rights and women's empowerment concludes that data on women's land rights are rare and that the key relationships are poorly understood. The assessment additionally points out a number of concerns with the current data in terms of: (1) disregarding the intricacies of land rights systems; (2) gauging land rights based on household-level measurements; (3) insufficient consideration of gender roles; and (4) scarcity of research from nations beyond Africa. Numerous studies have limitations such as small sample sizes, inadequate control groups, lack of attention to endogeneity and selection bias, and the potential for response bias on matters of domestic violence and empowerment. There are very limited rigorous evaluations of initiatives that have enhanced women's land rights.<sup>74</sup> Therefore, an important focus for future work is collecting data – either qualitative or quantitative – that enable an examination of the channels underlying the importance of land/property ownership for women's entrepreneurship.

Such data can be collected either via individual-level surveys, or via focus groups with women and men entrepreneurs from the Arab region. Examining court cases of women challenging inheritance or land allocation decisions from a wide cross-section of Arab countries could also provide important insights. Understanding the precise mechanisms behind the land/property-entrepreneurship nexus is very important for designing appropriate policies.

More data and studies are also needed to understand the linkages between women's economic inactivity, necessity entrepreneurship and opportunity entrepreneurship. A high proportion of women in the Arab region become economically inactive after marriage due to the demands of household work, or transition into necessity entrepreneurship. Rural areas have particularly high levels of inactivity and informal employment among women. Furthermore, working women are largely concentrated in the public sector. These region-specific characteristics give rise to a number of unanswered questions. How do women make decisions as to whether to enter the labour market and whether to become entrepreneurs? What are the main constraints that impact them – including social, cultural and economic? Can land and property ownership relax or reduce such constraints? Why do married but educated middle-class Arab women choose inactivity over employment or opportunity entrepreneurship? Extensive data and research are needed to answer these important questions in order to design appropriate policies for improving women's land and property ownership, and for encouraging women's entrepreneurship in the Arab region. Moreover, data should also be collected on intersectionality, such as disability and place of origin.

New and robust evidence on the linkages between women's ownership of land and property and entrepreneurship can also lead to new and improved policies. Governments can work with international organizations, civil society

organizations, rural collectives and the private sector to design such policies. For example, governments and banks can work together to enable women entrepreneurs to obtain loans with lower land collateral requirements. In Mauritius, women can currently obtain up to 300,000 Mauritian rupees (around \$8,000) in financing without collateral. In the past, women were required to provide collateral for loans as small as 50,000 Mauritian rupees, which presented an obstacle for women living in poverty renting their houses.<sup>75</sup> Alternative solutions include psychometric credit scoring such as has been utilized in Tanzania, Zimbabwe, Madagascar and Ethiopia, among other countries. Psychometric credit scoring provides insights into predicted loan performance beyond basic demographic characteristics and can complement traditional sources of data to predict credit risk in information-scarce environments.<sup>76</sup> Similarly, women may provide innovative entrepreneurial solutions in areas where they have more knowledge and experience compared to men – such as childcare, agriculture, handicrafts or community organizations. Special programmes designed jointly by the private and public sectors can incubate women's businesses and train women entrepreneurs in these target sectors. Specific attention should be paid

to the constraints and opportunities for women in rural regions.

Excluding women from land and property ownership has an impact on both equity and equality. This report suggests that when women do not have access to property or land, they are also less likely to be employed and to be entrepreneurs. As discussed in the introduction, limiting women's employment and entrepreneurship has enormous economic consequences – for the women themselves, their families and for society as a whole. The role of religious groups can be particularly beneficial in campaigns on the position of religion on women's right to access their legal shares in inheritance. Additional evidence can also shed light on the suitability of policies for encouraging women's entrepreneurship in the Arab region, such as training and networking programmes, credit programmes tailored for women entrepreneurs (such as products with lower collateral requirements), changing unconscious biases against women entrepreneurs, and providing women with incentives to acquire education in in-demand areas, such as in the fields of science, technology, engineering and math.<sup>77</sup>

# Annex 1. Additional tables

**Table A1.1** Key descriptive statistics of independent variables

	Egypt women (2014)		Jordan women (2017–2018)		Jordan men (2017–2018)	
	(1)	(2)	(3)	(4)	(5)	(6)
Variable	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Woman employed	0.16	0.37	0.14	0.34	0.54 <sup>a</sup>	0.5 <sup>a</sup>
Woman entrepreneur	0.15	0.36	0.05	0.22	0.11 <sup>a</sup>	0.31 <sup>a</sup>
Owns land	0.02	0.13	0.08	0.28	0.21	0.4
Owns house	0.06	0.23	0.11	0.31	0.35	0.48
Bank account	0.08	0.27	0.17	0.38	0.45	0.5
Husband entrepreneur	NA	NA	0.14	0.34		
Age	33.02	8.42	34.5	8.53	31.78	12.32
Urban	0.44	0.5	0.8	0.4	0.79	0.41
Secondary education and above	0.68	0.47	0.88	0.32	0.9	0.3
Wealth index	3.14	1.44	2.5	1.3	2.74	1.36
Married	0.94	0.24	0.93	0.25	0.49	0.5
Number of children under 5	0.89	0.97	0.87	0.99		
Number of household members	5.06	2.4	5.47	2.18	5.88	2.15
Emotional violence (ever)	0.75	0.43	0.62	0.49		
Physical violence (ever)	0.77	0.42	0.6	0.49		
Sexual violence (ever)	0.7	0.46	0.04	0.19		
Household bargaining index	2.14	0.4	2.04	0.36	1.72	0.47
Emotional violence (last year)	0.73	0.44	0.6	0.49		
Physical violence (last year)	0.73	0.44	0.58	0.49		
Sexual violence (last year)	0.7	0.46	0.03	0.16		

**Note:** "NA" means not available in columns 1 and 2.

<sup>a</sup> Refers to employed male and male entrepreneur in columns 5 and 6.

## Jordanian women

**Table A1.2** Land/house ownership and household bargaining

	coef/se	coef/se	coef/se
Owens land	-0.031		-0.033
	(0.020)		(0.024)
Owens house	-0.006	-0.015	
	(0.014)	(0.017)	
Bank account	-0.066***	-0.067***	-0.066***
	(0.012)	(0.012)	(0.012)
Husband entrepreneur	0.020**	0.019**	0.020**
	(0.009)	(0.009)	(0.009)
Age	-0.016***	-0.016***	-0.016***
	(0.002)	(0.002)	(0.002)
Agesq	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)
Urban	0.029	0.030	0.029
	(0.025)	(0.025)	(0.026)
Secondary education and above	-0.075***	-0.075***	-0.075***
	(0.021)	(0.020)	(0.021)
Wealth index	-0.011***	-0.011***	-0.011***
	(0.002)	(0.002)	(0.002)
Number of children under 5	0.015***	0.015***	0.015***
	(0.004)	(0.004)	(0.004)
Number of household members	0.009***	0.009***	0.009***
	(0.001)	(0.001)	(0.001)
	(0.003)	(0.003)	(0.004)
_cons	2.421***	2.420***	2.422***
	(0.028)	(0.028)	(0.027)
Number of observations	10,676	10,676	10,676
R <sup>2</sup>	0.050	0.049	0.050

**Note:** \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

**Table A1.3** Land/house ownership and gender-based violence experience (Ever)

	Emotional coef/se	Physical coef/se	Sexual coef/se	Emotional coef/se	Physical coef/se	Sexual coef/se	Emotional coef/se	Physical coef/se	Sexual coef/se
Owns land	-0.028	-0.006	0.017	-0.013	-0.004	0.017			
	(0.018)	(0.020)	(0.016)	(0.011)	(0.013)	(0.012)			
Owns house	0.035	0.004	0.001				0.025	0.002	0.006
	(0.024)	(0.018)	(0.016)				(0.018)	(0.013)	(0.013)
Bank account	-0.031***	-0.038	-0.019***	-0.029***	-0.038	-0.019**	-0.031***	-0.038	-0.018***
	(0.009)	(0.026)	(0.007)	(0.009)	(0.026)	(0.007)	(0.008)	(0.026)	(0.007)
Husband entre- preneur	0.032*	0.033	0.025*	0.032*	0.033	0.025*	0.032*	0.033	0.025*
	(0.019)	(0.022)	(0.014)	(0.019)	(0.022)	(0.014)	(0.019)	(0.022)	(0.014)
Age	0.001	-0.005**	0.008*	0.001	-0.005**	0.008*	0.001	-0.005**	0.008*
	(0.003)	(0.002)	(0.005)	(0.003)	(0.002)	(0.005)	(0.003)	(0.002)	(0.005)
Agesq	0.000	0.000**	-0.000*	0.000	0.000**	-0.000*	0.000	0.000**	-0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Urban	0.000	0.018	0.003	-0.001	0.018	0.003	0.001	0.018	0.003
	(0.036)	(0.024)	(0.013)	(0.037)	(0.024)	(0.013)	(0.036)	(0.025)	(0.013)
Secondary education and above	-0.044*	-0.027***	-0.010	-0.045*	-0.028***	-0.010	-0.045*	-0.028***	-0.010
	(0.024)	(0.006)	(0.008)	(0.024)	(0.006)	(0.008)	(0.024)	(0.006)	(0.008)
Wealth index	-0.020***	-0.017	-0.006***	-0.019***	-0.017	-0.006***	-0.020***	-0.017	-0.005***
	(0.007)	(0.012)	(0.002)	(0.007)	(0.012)	(0.002)	(0.007)	(0.011)	(0.002)

	Emotional coef/se	Physical coef/se	Sexual coef/se	Emotional coef/se	Physical coef/se	Sexual coef/se	Emotional coef/se	Physical coef/se	Sexual coef/se
Number of children under 5	0.025**	0.014	-0.003	0.026**	0.014	-0.003	0.025**	0.014	-0.003
	(0.012)	(0.011)	(0.003)	(0.012)	(0.011)	(0.003)	(0.012)	(0.011)	(0.003)
Number of houshold members	0.006	0.003	0.002*	0.006	0.003	0.002*	0.006	0.003	0.002*
	(0.006)	(0.004)	(0.001)	(0.006)	(0.004)	(0.001)	(0.006)	(0.004)	(0.001)
_cons	0.234***	0.265***	-0.107	0.241***	0.266***	-0.106	0.233***	0.265***	-0.106
	(0.035)	(0.044)	(0.094)	(0.035)	(0.042)	(0.094)	(0.034)	(0.045)	(0.094)
Number of obser- vations	5,090	5,090	5,090	5,090	5,090	5,090	5,090	5,090	5,090
R <sup>2</sup>	0.041	0.040	0.018	0.040	0.040	0.018	0.040	0.040	0.017

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

**Table A1.4** Land/house ownership and gender-based violence experience (Last year)

	Emotional coef/se	Physical coef/se	Sexual coef/se	Emotional coef/se	Physical coef/se	Sexual coef/se	Emotional coef/se	Physical coef/se	Sexual coef/se
Owns land	-0.026	-0.005	0.026	-0.014*	-0.002	0.024**			
	(0.017)	(0.018)	(0.018)	(0.008)	(0.013)	(0.011)			
Owns house	0.031	0.006	-0.006				0.022	0.004	0.003
	(0.029)	(0.024)	(0.022)				(0.023)	(0.020)	(0.018)
Bank account	-0.027**	-0.046*	-0.007	-0.026**	-0.046*	-0.007	-0.028**	-0.047*	-0.006
	(0.013)	(0.027)	(0.004)	(0.013)	(0.028)	(0.005)	(0.013)	(0.027)	(0.004)

	Emotional coef/se	Physical coef/se	Sexual coef/se	Emotional coef/se	Physical coef/se	Sexual coef/se	Emotional coef/se	Physical coef/se	Sexual coef/se
Husband entrepreneur	0.036***	0.026***	0.014	0.036***	0.026***	0.014	0.036***	0.026***	0.014
	(0.012)	(0.010)	(0.009)	(0.012)	(0.010)	(0.009)	(0.012)	(0.010)	(0.009)
Age	-0.002	-0.003	0.002	-0.002	-0.003	0.002	-0.002	-0.003	0.002
	(0.007)	(0.003)	(0.004)	(0.007)	(0.003)	(0.004)	(0.007)	(0.003)	(0.004)
Agesq	0.000	0.000	-0.000	0.000	0.000	-0.000	0.000	0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Urban	-0.013	0.019	-0.005	-0.014	0.019	-0.005	-0.012	0.019	-0.005
	(0.039)	(0.019)	(0.012)	(0.040)	(0.019)	(0.012)	(0.039)	(0.019)	(0.012)
Secondary education and above	0.013	0.016	-0.005	0.012	0.015	-0.005	0.012	0.015	-0.004
	(0.035)	(0.022)	(0.007)	(0.035)	(0.022)	(0.007)	(0.035)	(0.022)	(0.006)
Wealth index	-0.022***	-0.016	-0.003	-0.022***	-0.015	-0.003	-0.023***	-0.016	-0.003
	(0.007)	(0.010)	(0.003)	(0.007)	(0.010)	(0.003)	(0.007)	(0.010)	(0.003)
Number of children under 5	0.018	0.004	0.002	0.018	0.004	0.002	0.018	0.004	0.002
	(0.012)	(0.008)	(0.002)	(0.012)	(0.008)	(0.002)	(0.012)	(0.008)	(0.002)
Number of household members	0.008	0.007	0.001	0.008	0.007	0.001	0.008	0.007	0.001
	(0.005)	(0.005)	(0.001)	(0.006)	(0.005)	(0.001)	(0.006)	(0.005)	(0.001)
_cons	0.221**	0.182***	-0.011	0.227**	0.184***	-0.012	0.221**	0.182***	-0.010
	(0.090)	(0.062)	(0.077)	(0.092)	(0.063)	(0.076)	(0.090)	(0.062)	(0.077)



	Emotional coef/se	Physical coef/se	Sexual coef/se	Emotional coef/se	Physical coef/se	Sexual coef/se	Emotional coef/se	Physical coef/se	Sexual coef/se
Number of observations	5,090	5,090	5,090	5,090	5,090	5,090	5,090	5,090	5,090
R <sup>2</sup>	0.032	0.033	0.012	0.032	0.033	0.012	0.032	0.033	0.011

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

## Jordanian men

**Table A1.5** Land/house ownership and household bargaining

	coef/se	coef/se	coef/se
Owns land	0.022		0.010
	(0.038)		(0.040)
Owns house	-0.027	-0.020	
	(0.035)	(0.037)	
Bank account	0.041***	0.041***	0.036***
	(0.010)	(0.010)	(0.008)
Age	0.024**	0.024**	0.024**
	(0.008)	(0.008)	(0.008)
Agesq	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)
Urban	-0.051	-0.054	-0.047
	(0.034)	(0.036)	(0.034)
Secondary education and above	-0.035	-0.035	-0.035
	(0.046)	(0.046)	(0.046)
Wealth index	0.009	0.010	0.008
	(0.009)	(0.008)	(0.008)
Number of household members	-0.015***	-0.014***	-0.014***
	(0.004)	(0.004)	(0.004)
Number of observations	3,126	3,126	3,126
R <sup>2</sup>	0.063	0.062	0.062

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

## Egyptian women

**Table A1.6** Land/house ownership and household bargaining

	coef/se	coef/se	coef/se
Owns land	-0.009		-0.041**
	(0.027)		(0.016)
Owns house	-0.085***	-0.087***	
	(0.023)	(0.019)	
Bank account	-0.027	-0.027	-0.029
	(0.027)	(0.026)	(0.028)
Age	-0.026***	-0.026***	-0.025***
	(0.002)	(0.002)	(0.002)
Agesq	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)
Urban	0.020***	0.020***	0.019***
	(0.005)	(0.005)	(0.006)
Secondary education and above	-0.074***	-0.074***	-0.074***
	(0.012)	(0.012)	(0.012)
Wealth index	-0.043***	-0.043***	-0.042***
	(0.010)	(0.010)	(0.010)
Number of children under 5	0.004	0.004	0.004
	(0.005)	(0.005)	(0.005)
Number of household members	0.008***	0.008***	0.008***
	(0.000)	(0.000)	(0.000)
_cons	2.781***	2.781***	2.778***
	(0.052)	(0.051)	(0.053)
Number of observations	18,829	18,829	18,829
R <sup>2</sup>	0.053	0.053	0.052

**Note:** \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

**Table A1.7** Land/house ownership and gender-based violence experience (Ever)

	Emotional coef/se	Physical coef/se	Sexual coef/se	Emotional coef/se	Physical coef/se	Sexual coef/se	Emotional coef/se	Physical coef/se	Sexual coef/se
Owns land	-0.002	-0.011	-0.011	-0.009	-0.025	-0.022**			
	(0.022)	(0.039)	(0.012)	(0.017)	(0.043)	(0.009)			
Owns house	-0.019	-0.038***	-0.028*				-0.019	-0.039***	-0.029**
	(0.046)	(0.008)	(0.016)				(0.043)	(0.013)	(0.014)
Bank account	0.072*	0.027	0.033	0.072*	0.026	0.033	0.072*	0.026	0.033
	(0.042)	(0.041)	(0.022)	(0.042)	(0.041)	(0.022)	(0.043)	(0.040)	(0.022)
Age	0.006***	0.008	0.004	0.006***	0.008	0.004	0.006***	0.008	0.004
	(0.002)	(0.005)	(0.005)	(0.002)	(0.005)	(0.005)	(0.002)	(0.005)	(0.005)
Agesq	-0.000***	-0.000**	-0.000	-0.000***	-0.000**	-0.000	-0.000***	-0.000**	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Urban	0.070***	0.045***	-0.002	0.070***	0.045***	-0.002	0.070***	0.045***	-0.002
	(0.016)	(0.006)	(0.009)	(0.016)	(0.006)	(0.009)	(0.016)	(0.005)	(0.008)
Secondary education and above	-0.052***	-0.090***	-0.031***	-0.052***	-0.090***	-0.031***	-0.052***	-0.090***	-0.031***
	(0.004)	(0.009)	(0.007)	(0.004)	(0.009)	(0.007)	(0.004)	(0.009)	(0.008)
Wealth index	-0.021***	-0.027***	0.001	-0.021***	-0.027***	0.001	-0.021***	-0.027***	0.001
	(0.003)	(0.003)	(0.001)	(0.003)	(0.003)	(0.001)	(0.003)	(0.002)	(0.001)
Married	-0.240***	-0.203***	-0.117***	-0.236***	-0.195***	-0.111***	-0.240***	-0.203***	-0.117***
	(0.035)	(0.022)	(0.010)	(0.026)	(0.024)	(0.007)	(0.035)	(0.022)	(0.010)
Number of children under 5	-0.005	0.005	-0.009***	-0.006	0.005	-0.009***	-0.005	0.005	-0.009***
	(0.007)	(0.007)	(0.001)	(0.007)	(0.007)	(0.001)	(0.007)	(0.007)	(0.001)
Number of household members	0.005	0.005	0.001***	0.005	0.006	0.002***	0.005	0.005	0.001***
	(0.003)	(0.004)	(0.000)	(0.003)	(0.004)	(0.000)	(0.003)	(0.004)	(0.000)
_cons	0.420***	0.380***	0.130	0.414***	0.368***	0.122	0.420***	0.379***	0.130
	(0.013)	(0.094)	(0.081)	(0.016)	(0.091)	(0.085)	(0.014)	(0.094)	(0.081)
Number of observations	6,466	6,466	6,466	6,466	6,466	6,466	6,466	6,466	6,466
R <sup>2</sup>	0.034	0.033	0.029	0.034	0.032	0.028	0.034	0.033	0.029

**Note:** \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

**Table A1.8** Land/house ownership and gender-based violence experience (Last year)

	Emotional coef/se	Physical coef/se	Sexual coef/se	Emotional coef/se	Physical coef/se	Sexual coef/se	Emotional coef/se	Physical coef/se	Sexual coef/se
Owens land	0.065***	0.028**	-0.009	0.069***	0.023	-0.009			
	(0.021)	(0.012)	(0.009)	(0.013)	(0.017)	(0.007)			
Owens house	0.011	-0.014	-0.001				0.022	-0.009	-0.003
	(0.033)	(0.010)	(0.006)				(0.031)	(0.011)	(0.004)
Bank account	0.026	0.007	0.013	0.026	0.007	0.013	0.028	0.008	0.013
	(0.047)	(0.047)	(0.019)	(0.048)	(0.047)	(0.019)	(0.048)	(0.047)	(0.018)
Age	-0.001	-0.005	0.001	-0.001	-0.005	0.001	-0.001	-0.005	0.001
	(0.003)	(0.004)	(0.002)	(0.003)	(0.004)	(0.002)	(0.003)	(0.004)	(0.002)
Agesq	-0.000	0.000	-0.000	-0.000	0.000	-0.000	-0.000	0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Urban	0.047***	0.021***	-0.006	0.047***	0.021***	-0.006	0.048***	0.021***	-0.006
	(0.013)	(0.004)	(0.005)	(0.013)	(0.004)	(0.005)	(0.014)	(0.004)	(0.005)
Secondary education and above	-0.049***	-0.058***	-0.023***	-0.049***	-0.057***	-0.023***	-0.048***	-0.057***	-0.023***
	(0.003)	(0.005)	(0.005)	(0.003)	(0.005)	(0.005)	(0.003)	(0.005)	(0.005)
Wealth index	-0.009**	-0.010***	0.002***	-0.009**	-0.010***	0.002***	-0.010**	-0.010***	0.002***
	(0.004)	(0.001)	(0.000)	(0.004)	(0.001)	(0.000)	(0.004)	(0.001)	(0.000)
Married	-0.048	-0.047	-0.031	-0.050	-0.044	-0.031	-0.048	-0.047	-0.032
	(0.031)	(0.046)	(0.032)	(0.037)	(0.044)	(0.033)	(0.031)	(0.046)	(0.032)
Number of children under 5	-0.003	0.013	-0.007***	-0.003	0.013	-0.007***	-0.003	0.013	-0.007***
	(0.003)	(0.009)	(0.002)	(0.003)	(0.009)	(0.002)	(0.003)	(0.009)	(0.002)
Number of household members	0.005	0.002	0.002**	0.005	0.002	0.002**	0.005	0.002	0.002**
	(0.004)	(0.002)	(0.001)	(0.004)	(0.002)	(0.001)	(0.004)	(0.002)	(0.001)

	Emotional coef/se	Physical coef/se	Sexual coef/se	Emotional coef/se	Physical coef/se	Sexual coef/se	Emotional coef/se	Physical coef/se	Sexual coef/se
_cons	0.300***	0.348***	0.061	0.304***	0.343***	0.061	0.302***	0.348***	0.061
	(0.094)	(0.128)	(0.059)	(0.101)	(0.125)	(0.061)	(0.094)	(0.128)	(0.059)
Number of observations	6,466	6,466	6,466	6,466	6,466	6,466	6,466	6,466	6,466
R <sup>2</sup>	0.014	0.022	0.009	0.014	0.022	0.009	0.013	0.022	0.009

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

## Annex 2. Technical discussion of the empirical results

### Employment and entrepreneurship

Table 10 shows that land (but not house ownership) is positively correlated with women's employment in Jordan: women who own land (either alone or jointly) are between 2.1 per cent and 2.2 per cent more likely to be employed. Women who are wealthier and have a bank account are also more likely to be employed, although these patterns may be due to reverse causality running from employment. Women with more children and who are married are less likely to be employed, likely due to the extra demands of unpaid household and care work. Interestingly, higher education does not increase women's employment.

Jordanian women who own land are around 5 per cent more likely to be entrepreneurs, compared to those who do not (table 12). The results are similar in the OLS and Heckman specifications. Interestingly, women whose husbands are entrepreneurs are 12 per cent more likely to be entrepreneurs, possibly because both partners work in family-owned businesses. Women living in urban locations are more likely to be entrepreneurs, but – surprisingly – wealth is not related to entrepreneurship. This may indicate that women do not have control over household resources and thus cannot use them to start or grow a business. Bank account ownership is negatively correlated with entrepreneurship (but only in the OLS model) and positively correlated with entrepreneurship in the Heckman model. Education or a woman's number of children are not evidently correlated with a woman's decision to be an entrepreneur.

Table 11 shows that Egyptian women who own a house and/or land are more likely to be employed and are between 3.5 per cent and 7.2 per cent more

likely to be entrepreneurs (table 13). Women with higher education, with a bank account and with more household members are more likely to be employed, while those who are married are less likely to be employed.

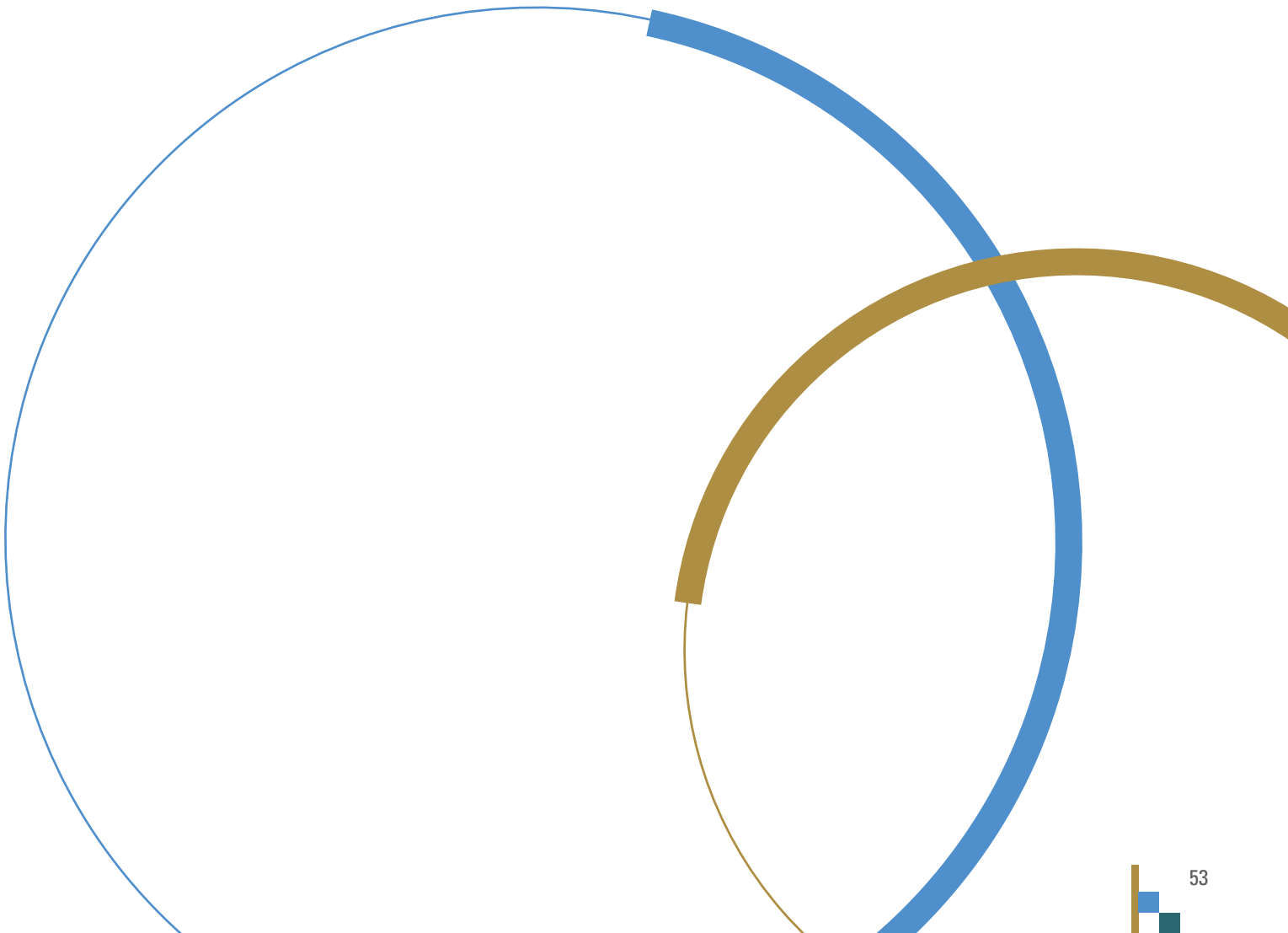
By contrast, table 13 shows that bank account ownership and wealth are not correlated with entrepreneurship. The null wealth result parallels the pattern for Jordanian women and contrasts with the positive correlation between wealth and entrepreneurship among Jordanian men (discussed below). Married women are less likely to be employed and to be entrepreneurs, likely due to the demands of unpaid and care work which leaves less time for paid activities. In Egypt, women in urban areas and those with education above the secondary level are less likely to be entrepreneurs. This pattern could be consistent with the prevalence of informal or agricultural-based businesses which demand fewer specialized skills.

Table 14 shows that Jordanian men who own land are between 3.5 per cent and 4.5 per cent less likely to be employed compared to those who do not. One possibility for this result is that men may sell off land in order to cover living and other expenses. Although there are no data to investigate this hypothesis, table 14 also shows that wealthier men are less likely to be employed, which is consistent with the idea that more assets reduce employment among men. Married men are more likely to be employed, while age has an inverted-U shape effect on employment. Men in households with more members are less likely to be employed.

As in the case of women, Jordanian men who own land are around 5.2-6.4 per cent more likely to be entrepreneurs (table 15). While there is no correlation between wealth and female entrepreneurship in Jordan or Egypt, wealthier Jordanian men are more likely to be entrepreneurs.

As discussed above, men may have more control over household wealth compared to women and can therefore use it to start businesses or to offset income loss during unemployment. Bank account ownership negatively correlates with entrepreneurship in the men's sample,

possibly because the majority of businesses in the sample are informal (though the data do not allow the distinction between formal and informal businesses). Married men are more likely to be entrepreneurs, and entrepreneurship decreases with age, exhibiting a U-shaped effect.



## Annex 3. Robustness checks

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Given the cross-sectional nature of the analysed data, omitted variable bias and reverse causality are an issue. To deal with this, the report adopts the method developed by Oster (2019) to estimate how much higher unobservables have to be in order to explain away the effects of land/house ownership on entrepreneurship. While including controls may fully capture omitted variable bias, in many cases, observable controls may be an imperfect proxy for unobservable characteristics.

For instance, such unobservable characteristics may be differences in ability or networks for survey respondents who own land or property versus respondents who do not, which may explain differences in entrepreneurship. A common approach in these situations is to explore the sensitivity of treatment effects to the inclusion of observed controls. If a coefficient is stable after the inclusion of the observed controls, this is taken as a sign that omitted variable bias is limited.

The idea behind this approach is that the bias arising from the observed (imperfect) controls is informative about the bias arising from the observed and unobserved controls.<sup>78</sup> As Oster (2019) explains, even under the most optimistic assumptions, coefficient movements alone are not a sufficient statistic for calculating bias.<sup>79</sup> In this analysis, three cut-offs for  $R_{max}$  are thus adopted:  $1.3R_c$  (which

is the number recommended by Oster based on the experimental literature), as well as the more conservative  $2R_c$  and 1, where  $R_c$  is the R-squared from the regressions with full sets of controls.

Tables A3.1 to A3.3 apply the Oster method to the specifications exploring the correlation between land ownership and entrepreneurship, and house ownership and entrepreneurship in Jordan (women and men) and Egypt (women). Table A3.1 (Jordanian women) shows that for the values of  $1.3R_c$  and  $2R_c$ , the impact of unobservables would have to be at least two times greater compared to that of observables (and in the opposite direction) for results to be explained away, which is unlikely. Results are less convincing with the specification when  $R_c=1$ . Results are less robust in table A3.2 as several of the delta values are around 1 or less, suggesting that the obtained correlations between land/house ownership and entrepreneurship for Jordanian men may not be robust. Similar to the results in table A3.1, table A3.3 (Egyptian women) shows that the results linking land/house ownership and entrepreneurship are unlikely to be driven by unobservables. All in all, the results indicate that the correlations between land/house ownership and entrepreneurship and women's employment and entrepreneurship are robust, and are likely to capture causal relationships, rather than omitted factors or reverse causality.



**Table A3.1** How important unobservables have to be relative to observables in order to explain away coefficients in table 12 (Jordanian women, 2017–2018)

$R_{\max}$	Table 12, women entrepreneurs, delta for coefficient on Own land = 0	Table 12, women entrepreneurs, delta for coefficient on Own house = 0
1.3Rc	-15.72	-6.45
2Rc	-5.31	-1.96
1	-0.72	-0.24

**Note:** Author's calculations based on Oster (2019) and columns 2 and 3 of tables 12.

**Table A3.2** How important unobservables have to be relative to observables in order to explain away coefficients in table 15 (Jordanian men, 2017–2018)

$R_{\max}$	Table 15, male entrepreneurs, delta for coefficient on Own land = 0	Table 15, male entrepreneurs, delta for coefficient on Own house = 0
1.3Rc	3.22	1.54
2Rc	1.14	0.51
1	0.1	0.04

**Note:** Author's calculations based on Oster (2019) and columns 2 and 3 of table 15.

**Table A3.3** How important unobservables have to be relative to observables in order to explain away coefficients in table 13 (Egyptian women, 2014)

$R_{\max}$	Table 13, women entrepreneurs, delta for coefficient on Own land = 0	Table 13, women entrepreneurs, delta for coefficient on Own house = 0
1.3Rc	6.71	5.0
2Rc	2.1	1.62
1	0.19	0.15

**Note:** Author's calculations based on Oster (2019) and columns 2 and 3 of table 13.

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# Endnotes

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- 1 Nikolova, 2017.
- 2 Kritikos, 2014.
- 3 Credit Suisse Research Institute, 2014.
- 4 Nikolova, 2017.
- 5 Economic and Social Commission For Western Asia (ESCWA), 2020.
- 6 Ostry and others, 2018.
- 7 See Nikolova and Simorth, 2015, for a discussion.
- 8 Global Entrepreneurship Monitor (n.d.).
- 9 The latter is also referred to as intrapreneurship or corporate entrepreneurship.
- 10 While expanding a business and transitioning to entrepreneurship are theoretically important, the available data on observing these events are scarce.
- 11 Drèze and Stern, 1987.
- 12 Smith, 1776. Although simple and logical, rational choice theory has been criticized, as in real life, people often fail to make self-interested choices, e.g. due to social norms or imperfect decision-making.
- 13 Nikolova and Simroth, 2015.
- 14 Perceived benefits and costs will be higher for opportunity versus necessity entrepreneurs, as explained in the penultimate section of this paragraph. Necessity entrepreneurship may push women further into poverty, and thus may be detrimental for them in the long run.
- 15 See <https://unstats.un.org/unsd/gender/timeuse/>, data for Algeria is for 2012.
- 16 It is important to note that financial discrimination will be very difficult to measure, as it will proxy for other things (risk aversion by entrepreneurs, moral hazard, bad practices or poor governance).
- 17 Carranza and others, 2018.
- 18 Two studies from the Arab region – Naser and others (2009) on the United Arab Emirates and Gray and others (2005) on Morocco – show that pull factors, such as the desire for achievement, independence and self-fulfillment, are important for women entrepreneurs. See also Carranza and others, 2018.
- 19 Nascent entrepreneurs are those that have not yet paid more than three months in salaries, see <https://www.gemconsortium.org/wiki/1149>.
- 20 Nikolova and Simroth, 2015.
- 21 Nikolova and others, 2012.
- 22 ESCWA, 2020.
- 23 O'Neil and Toktas, 2014. The figure for women's land ownership in Jordan (28.6 per cent) referred to in O'Neil and Toktas (2014) is based on a 1995 study by the Food and Agriculture Organization (FAO), and the figure for male agricultural land ownership in Jordan in table 1 (97 per cent) is from the Social Institutions and Gender Index (SIGI) 2019 profile (no further source is provided). It is not clear why this discrepancy exists.
- 24 Naser and others, 2009.
- 25 Shoma, 2019. See also Chowdhury and others, 2018.
- 26 Solotaroff and others, 2019.
- 27 Women are also prevented from taking on jobs that involve contact with men. See Leahy and others, 2017.
- 28 Although the law accords the right to women to inherit, purchase and own property all over Indonesia, these rights are not always clearly defined, and are by large governed by 'adat' law. According to Indonesian tradition, sons inherit land, while daughters inherit other forms of property such as gold, jewelry and livestock. See the International Finance Corporation (IFC), 2016.

- 29 World Bank, 2016.
- 30 Dea, 2019.
- 31 Goheer, 2003.
- 32 Brixiová and others, 2020.
- 33 Carranza and others, 2018. Banks often use credit history data as a substitute for, or in addition to, collateral.
- 34 ESCWA (2020) reports the results of an Organisation for Economic Co-operation and Development (OECD) survey of 19 banks operating in four MENA economies, which shows that only 3 banks had annual targets to increase financing to women entrepreneurs and none reported offering tailored programmes, personalised services or customised products aimed at women-led businesses.
- 35 Identifying the link between access to land and education is difficult, since education is related to parents' choices and decisions, and data on parents' education may not be readily available. In addition, education likely affects entrepreneurship directly.
- 36 Menon and others, 2013.
- 37 Efobi and others, 2019. In addition, evidence from France suggests that women are willing to accept a lower wage in exchange for shorter commute times, and that commute preferences account for around 14 per cent of the gender wage gap. See Le Barbanchon and others, 2020.
- 38 Menon and others, 2014.
- 39 See Kahan, 2012.
- 40 See Mishra and Sam, 2016; Chakrabarti, 2018, for evidence from Nepal; and Menon and others, 2014.
- 41 Duflo, 2012.
- 42 Jamali, 2009.
- 43 See SIGI 2019 (OECD, 2019), which has two indicators to measure such social norms: (1) "Proportion of the population declaring this is not acceptable for a woman in their family to work outside home for a pay"; and (2) "Legal framework on freedom of movement".
- 44 Roomi (2009) finds that independent mobility and being allowed to meet with men play a decisive role in the sales and employment growth of women-owned enterprises in an Islamic country such as Pakistan.
- 45 Carranza and others, 2018.
- 46 Van den Bold and others, 2015.
- 47 Bursztyn and others, 2020.
- 48 See Stanley and Prettitore, 2020.
- 49 These include Oster's (2019) approach on estimating the impact of unobservable characteristics (relative to observable characteristics) in a regression. Section 5 implements this approach.
- 50 United Nations Development Programme (UNDP) and others, 2019, and OECD, 2019 (SIGI 2019 country gender profiles).
- 51 Ababsa, 2017.
- 52 OECD, 2020.
- 53 However, discriminatory practices such as deception and false transfers of property as well as high court fees prevent women from fully exercising their land rights (OECD, 2019 (SIGI 2019 country gender profiles)).
- 54 Sama News, 2019.
- 55 UNDP and others, 2019.
- 56 World Bank, 2019a.
- 57 Institute of International Education (IIE), 2023.

- 58 Global Citizen, 2017.
- 59 World Bank, 2019a.
- 60 African Development Bank Group, 2020.
- 61 Lehwych, 2018.
- 62 World Bank, 2019b.
- 63 ESCWA, 2020.
- 64 There are no data on whether the respondent is an employer.
- 65 All regressions use weights (by cluster for Jordan; by governorate/urban/rural for Egypt), and all standard errors are clustered at the regional level.
- 66 As it was difficult to a priori identify a variable affecting only the first stage (employment) and not the second stage (entrepreneurship) (the exclusion restriction approach to the Heckman correction), the correction rests on the assumption that whether the spouse is employed affects only the first stage decision of a woman's employment, and not her decision to be an entrepreneur. Note that the spouse's work status is only available in the Jordanian sample. This approach is preferable to the one which assumes that both employment and entrepreneurship are affected by the same variables, and thus assumes a specific joint distribution of the residuals in the two stages (a bivariate normal distribution). The latter specification approach is generally not considered desirable, since it produces unbiased but inefficient and imprecise estimates in the entrepreneurship regression. In the Egyptian sample, there is no exclusion restriction, but this is less of a concern since the sample of Egyptian women is larger (more than 20,000 women; see Nikolova and others, 2012).
- 67 The data on gender-based violence are only available in the women's samples.
- 68 An alternative coding scheme, which adds all experiences of violence and thus measures intensity, was also used. Similarly, regressions were also run with variables based on the sub-indices. Results are very similar to those presented and are available upon request.
- 69 Very few women own land alone (or both alone and jointly). Therefore, the dependent variables also include women who own land jointly.
- 70 In the men's sample, the 0 category also captures men who never married.
- 71 Information on whether the husband is an entrepreneur is only available for the Jordan sample.
- 72 The Act was phased into different states in India between 1976 and 2005 and greatly improved women's ability to inherit property.
- 73 See Mishra and Sam, 2016; Chakrabarti (2018) for evidence from Nepal; and Menon and others (2013) on Vietnam.
- 74 Meinzen-Dick and others, 2017.
- 75 OECD, 2019.
- 76 Alibhai and others, 2019.
- 77 Nikolova, 2017.
- 78 See, e.g., Altonji and others, 2005.
- 79 For instance, if there is a dependent variable that is explained solely by two unobserved characteristics (orthogonal to each other), one with lower variance and one with higher variance, the coefficient would appear much more stable if the researcher observes only the lower-variance confounder. This is not because the bias is smaller, but because less of the dependent variable is explained by the controls. Therefore, Oster's core insight is to recognize that coefficient stability on its own is at best uninformative and at worst very misleading. It must be combined with information about R-squared movements to develop an argument. The key is to provide appropriate assumptions for the R-squared from a hypothetical regression of the outcome on treatment and both observed and unobserved controls (denoted as  $R_{max}$ ), which then can be used to calculate a measure of omitted variable bias. Oster suggests a standard based on the performance of this estimator in randomized data.





The study investigates the relationship between women's entrepreneurship and ownership of land/property in Egypt and Jordan. By utilizing a conceptual framework that identifies five mechanisms linking the two, namely access to credit and finance, additional income, increased investments, improved intrahousehold bargaining and improved social norms, the research reveals that property/land ownership enhances women's involvement in employment and entrepreneurship. However, it suggests that property/land ownership may have a limited impact on their bargaining power and on reducing gender-based violence. The study highlights the need for improved data and understanding of the interconnections between women's economic inactivity and entrepreneurship, in order to formulate effective policies to support women entrepreneurs in the Arab region.

