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DISCUSSION PAPER SERIES

IZA DP No. 17582

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ABSTRACT

How Credit Constrained Are Family-Owned SMEs in Arab Countries?*

Family-owned firms account for majority of small and medium-sized enterprises (SMEs) in Arab countries, but evidence on the impact of this ownership type on access to credit in the region is scarce. Yet the issue is key for understanding barriers to the emergence of dynamic private sector and growth acceleration. Utilizing the World Bank Enterprise Surveys, this paper contributes to closing this knowledge gap by examining the links between family ownership and credit constraints of SMEs in Egypt, Jordan, Morocco, and Tunisia. We found that while family-owned firms have a higher need for credit than nonfamily-owned firms, they are more likely to be discouraged from applying for it. Due to this self-selection out of credit markets, they end up more credit constrained even though their credit application rejection rates are below those of nonfamily firms. Stronger firm governance, formal business strategies and good managerial practices can ease access to credit for family-owned SMEs.

JEL Classification: D22, G21, G32

Keywords: family-owned SMEs, access to credit, firm governance, Arab countries

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1. Introduction

The limited access to finance is a top obstacle to the growth of small and medium-sized enterprises (SMEs) all over the world (World Bank et al., 2022). There is also evidence that SMEs with constrained access to credit tend to be smaller and exhibit weaker performance in terms of productivity, sales, and employment than their less constrained counterparts (Beck and Demirgüç-Kunt 2006; Brixiova et al., 2020; Ullah, 2020). In Arab countries, SMEs (firms with fewer than 100 employees), account for over 90 percent of total firms and majority of jobs, but they grapple with the largest gap in financial inclusion globally (Stepanyan et al., 2019).[2] Given the key role of SMEs in employment and the limited role of the private sector in the Middle East and North Africa (MENA), easing SME financing constraints has been a key policy priority in the region.

A key feature of SMEs in Arab countries is the high share of family ownership, with family-owned firms comprising 80 percent of all SMEs in both the formal and informal sectors (Abouzaid, 2014). Several studies have shown that the need for and access to credit varies according to whether the firm is family-owned (Burkart et al., 2003; Bertrand and Schoar, 2006).[3] Recent literature posits that family ownership impacts the quality of corporate governance and managerial practices, which may affect the firm´s demand for and access to credit (Hansen et al., 2021; Samara, 2021; Tsoutsoura, 2021). Studies on this topic in the MENA are scarce and factors behind the limited access to credit by family-owned SMEs in the Arab region thus remain understudied.

The literature on the impact of family ownership on access to credit in this region is limited, although several works have analyzed the challenges of SMEs in accessing financial services (Asiedu et al., 2013; Fowowe, 2017; Brixiová et al., 2020), including those operating in Arab countries (Saleem, 2013; Dornel et al., 2020; Bakhouche, 2021). In addition, the role of managerial practices, as well as the role of strategic plans in the strategic decisions of family

[2] Although the banking sector is the main source of formal external financing in Arab countries, the average share of bank lending to SMEs in total bank lending in the Middle East and North Africa (MENA) was only about 9 percent, the lowest in the world (Ndoye and Barajas, 2022).

[3] Some studies have shown that family-owned firms limit external finance to avoid sharing equity with nonfamily members (Sirmon and Hitt, 2003). Others have shown that family-owned firms face increased collateral requirements and undergo more rigorous screening processes than nonfamily ones (Chen et al., 2014; Minetti et al., 2015; Murro and Peruzzi, 2019; Steijvers et al., 2010).

firms and the impact on their access to finance, has received only scant attention (Samara, 2021). To reduce this gap in the literature, this paper explores the effect of family ownership on access to credit in Arab countries. Furthermore, we investigate the moderating role of the quality of corporate governance, including managerial practices and business strategy, on this relationship.

Our empirical analysis utilizes the latest available country representative data from the World Bank Enterprise Surveys for Egypt, Jordan, Morocco, and Tunisia, collected between 2019 and 2020, which all have information on whether the firm operates under family ownership.[4] The paper provides robust evidence on the impact of family ownership on the need for credit, credit application, and credit constraints in the MENA region. We give due attention to the mechanisms underlying this relationship, as well as issues of heterogeneity and selection bias.

Our results show that in selected African countries (Egypt, Jordan, Morocco, Tunisia) family-owned SMEs are more credit constrained than their nonfamily owned counterparts. While family-owned firms exhibit a higher need for credit, they are less likely to apply for one compared to nonfamily firms and are thus self-selecting themselves out of credit markets. Moreover, firms with a formalized written business strategy face fewer credit constraints. Longer experience of the firm manager is associated with higher credit constraints in the context of firm's greater need for credit. This could suggest either a lack of confidence in obtaining credit based on past experiences or higher financial conservatism among experienced managers regarding credit, aligning with the findings of Cowling et al. (2021). Robustness checks, conducted through alternative specifications of family business, and selection-bias check, support these results.

This paper makes two main contributions. First, it presents the first and most current evidence on the relationship between family ownership and credit constraints among SMEs in Arab countries. Second, our results contribute to closing the gap on links between improved corporate governance and managerial practices, especially the presence of formal business strategy, and family firm access to bank credit. As mentioned above, in Arab countries, the topic of constraints to family firms' operations and expansion is also highly relevant to women's

[4] The 2023 World Bank Enterprise Survey of Morocco does not have information on family ownership.

entrepreneurship, as many companies where women are represented among owners are family-owned. In a region with some of the lowest shares of female owners among formal SMEs and the lowest female participation in the labor force in the world, this is crucial.

The rest of the article is structured as follows. Section 2 reviews the literature related to the link between family ownership and access to credit. Section 3 exhibits the data and the empirical methodology. Section 4 presents the empirical results and their discussions. Section 5 concludes.

2. Family-owned firms and access to credit

Until recently, the access to credit by family firms has received limited attention in the academic and policy literature, and even less so for North Africa and Middle East. The issue of family firms' access to credit can be examined from two contrasting perspectives, reflecting differing views on the impact of family ownership on firm performance. The efficiency-based perspective considers family ownership as a source of comparative advantage, where owners who consider family legacy and future generations prioritize investment and long-term results, often outperforming their more myopic counterparts (Bertrand and Schoar, 2006; Minetti et al., 2015). In developing countries, family ownership may even compensate for the absence of a robust legal framework and offer investor protection (Burkart et al., 2003). Conversely, the cultural perspective highlights that focus on family values and legacy may hamper innovation and reduce focus on financial outcomes. Family firms also face succession challenges, leading to potential conflicts and increased agency costs (Bertrand and Schoar, 2006; Murro and Peruzzi, 2019).

Empirical findings are often inconclusive, even though the view that family firms are more credit constrained tends to be more frequent than the opposite. For example, utilizing firm-level data from the World Bank's Enterprise Surveys from 138 developing countries, Mertzanis (2019) examined the impact of family ties on the individual firms' financing constraints. He showed that while in general stronger family ties are associated with higher financing constraints, ties reduce these constraints in smaller countries with smaller firms and in countries with high population density. This paper is solely based on the perception method, measuring financing constraints as well as firms' perceptions regarding their access to finance. Moreover, the issue has not been covered specifically for the MENA region.

The standard principal-agent problem outlines the relationship between family businesses (as agents) and lenders (as principals) (Steijvers and Voordeckers, 2009). However, the dual perspective on the impact of family ownership on efficiency shapes views on access to credit. For instance, in their analysis of Turkish businesses, Ergün and Doruk (2020) show that family firms often enjoy better access to credit than nonfamily businesses due to network effects. This enhanced access to financing for family businesses is frequently attributed to lenders having inside information due to personal relationships with the owners. In addition to the long-term vision of family firms mentioned earlier, the firm's image can serve as an appealing signal to lenders, resulting in improved access to financial resources (Arzubiaga et al., 2022).

At the same time, due to multiple objectives, family firms often face stricter collateral requirements and/or more rigorous pre-screening. Anderson et al. (2009), Bianco et al. (2013), and Chen et al. (2014) demonstrate that family businesses tend to be less transparent, thus appearing riskier to lenders because of excessively personalized management (Chrisman et al., 2004; Berger and Udell, 2006; Hiebl, 2013; Ferri and Murro, 2015; Minetti et al., 2015). Steijvers et al. (2010) note that Belgian family SMEs must provide more guarantees than nonfamily SMEs to secure credit access. The level of family control within the firm correlates positively with the amount of information requested compared to nonfamily counterparts (Pan and Tian, 2016; Cucculelli et al., 2019). Murro and Peruzzi (2019) also postulate that family-owned firms encounter greater credit constraints than others, with smaller firms being particularly affected. Together with the greater risk aversion inherent in family businesses, these factors can lead to more frequent self-exclusion of family-owned firms from credit markets, that is situation where firms refrain from applying for credit even when they face liquidity shortages (Morsy et al., 2019; Haider et al., 2021; Hansen et al., 2021).

Family firms in Arab countries often rely on internal financing such as family finance and savings (AfDB/ILO, 2021), especially in the start-up stage (Bizri et al., 2018). This tendency is frequently driven by the desire to maintain control of the business and align it with family values. It may also stem from family businesses facing higher financing costs or not meeting the collateral and information requirements set by lenders (Guidara et al., 2016). Heavy reliance on internal financing, and thus on the personal assets of family owners, can lead to a blending of personal and business assets.

Better corporate governance and managerial practices including a formal business strategy can mitigate these financial inconsistencies (Charbel et al., 2013) and influence a firm's objectives, operations, and financial planning (Duhan, 2007; Duréndez et al., 2016), thereby affecting its access to credit (Rhyne, 1986). Effective financial planning enhances the quality and transparency of financial reporting, encouraging firms to seek credit (Wignaraja and Jinjarak, 2015). Subsequently, the financial and organizational transparency of SMEs can significantly increase their chances of obtaining a loan from the perspective of lenders (Ellul et al., 2015; Duréndez et al., 2016).

This underscores the key role of a formal business strategy in the Arab region, particularly as family-owned SMEs are characterized by a more informal approach compared to their nonfamily counterparts (Samara, 2021). Additionally, several studies indicate that the business strategies, as well as their implementation, vary depending on whether the business is family-owned or not (Gudmundson et al., 1999; Chrisman et al., 2013; Tsoutsoura, 2021). Abouzaid (2014) contends that a robust management strategy and, more broadly, strong governance are crucial for the effective functioning and sustainability of family firms in North Africa.

Further, better corporate governance and managerial practices can enhance the credit access by reducing the influence of families in financing decisions, and thus increasing the likelihood that the firm will seek external funding. This seems to hold even more for Arab family SMEs, whose primary objectives include promoting the family name, retaining control, and passing on a stable business to the next generation (Poza et al., 2004; Bertrand and Schoar, 2006; Hamalian et al., 2016). However, such management strategies can impede the firm's risk-taking ability (Shepherd and Zahra, 2003; Bianco et al., 2013), which has a negative impact on external financing demand.

Against this background, the contribution of this study is twofold: First, it helps to bridge the knowledge gap about the impact of family ownership on firm credit constraints. This is important for the SME performance, given the prevalence of family ownership in Arab countries. Second, to contribute to closing the gap in the literature on the links between improved managerial practices, especially the presence of formal business strategy, and family firms' access to bank credit in the region.

3. Data and empirical methodology

a. Data

We use data from the Enterprise Survey database, collected by the European Bank for Reconstruction and Development (EBRD), the European Investment Bank (EIB), and the World Bank Group (WBG), covering more than 150 countries including Egypt, Jordan, Morocco and Tunisia. These surveys, conducted in late 2019 and early 2020, provide information on the experiences of private firms in the non-agricultural economy, including manufacturing (group D according to the ISIC 3.1 classification), construction (group F), wholesale, retail trade, hotels and restaurants (groups G and H), and the transport, storage, and communications sector (group I). It is also important to note that the surveys conducted in 2020 relate to data from the previous year. The data, and therefore the results of our analysis, are not affected by the effects of COVID-19.

We focus on small and medium-sized enterprises (SMEs), defined as firms with 5 or more and less than 100 employees, from Egypt, Morocco, Tunisia, and Jordan, interviewed between 2019 and 2020. The final sample comprises 3,288 firms, with 24.7% of them being family-owned.[5] This relatively low share of family-owned firms in our sample, even though they represent the largest proportion of SMEs in Arab countries, is because the sample contains only SMEs operating in the formal sector, while most family-owned businesses are informal.

Table 1A in the Appendices provides a definition of all the variables utilized in our empirical analysis. Table 1 (below) reports summary statistics (for all firms that have between 5 and 99 employees), by ownership structure (family-owned vs. non-family owned). It shows that on average, the surveyed SMEs have been in business for 20 years and generally employ fewer than 20 employees. Less than one in five firms in the SMEs sample have a formal business strategy. It is also striking that a very low share of women in leadership positions, with less than 6% of firms having female among top 3 owners and about 6% having women in top management position.

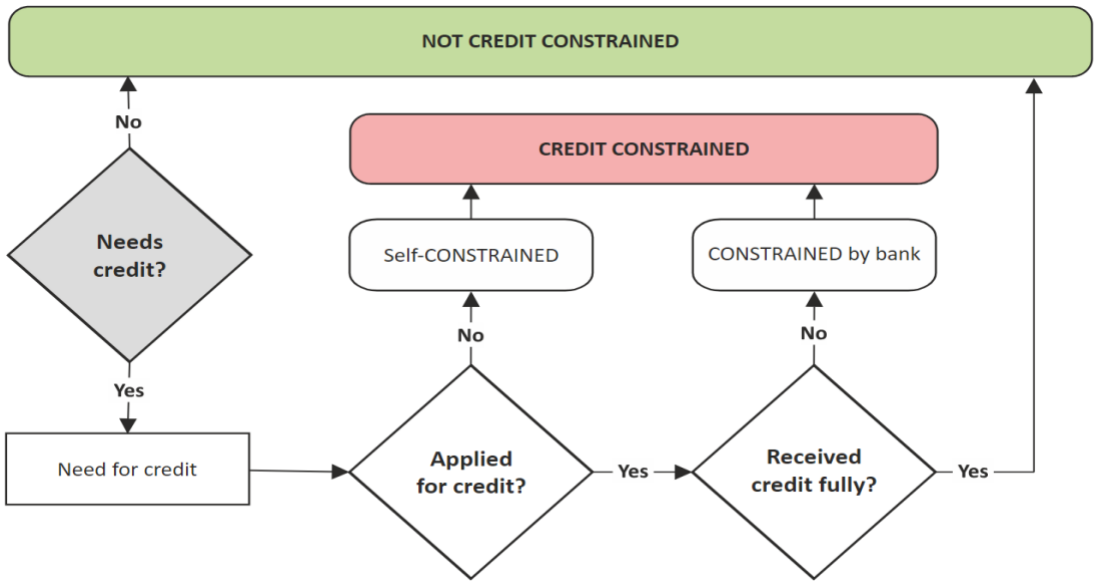
[5] Due to stratified random sampling based on establishment size, industry, and region, and addressing typical issues encountered in establishment surveys such as positive rates of non-eligibility, repetition, and non-existent units, we utilize 'median eligibility weights' as defined by the Survey to ensure unbiased and representative results.

Regarding inclusion of women in productive activities, research by Cromie and O'Sullivan (1999), Kay and Schlömer-Laufen (2016), and Andersson et al. (2018) indicates that family enterprises are more likely to have female owners and female top managers. Our findings in Morocco, Egypt, Jordan, and Tunisia also reveal that the majority (63%) of businesses with female participation in ownership in these countries are family-owned. This is an important aspect given that the marked underrepresentation of MENA women in the labor force in general and in firm ownership in particular: according to the World Bank Enterprise Survey data, women account for less than 20 percent of owners among limited liability firms in Egypt and Morocco as well as among solo entrepreneurs in Jordan.

b. Defining credit constraints

In this paper, we utilize direct measures of credit constraints and define credit constrained firms by combining information on their access to external financing sources and the outcome of their loan applications, along the lines of Islam and Rodriguez Meza (2023). Regarding the latter, the credit constrained firms are of two types: (i) bank-constrained, that is those that applied for a loan and were rejected; and (ii) self-constrained (or discouraged), that is those that have been deterred from applying either due to unfavorable conditions (high borrowing costs, high collateral requirements) or because they thought the application would be rejected (Figure 1).

Figure 1: Definition of dependent variables



Source: Adapted from Islam and Rodriguez Meza (2023).

Table 1. Descriptive statistics: total sample and family vs. nonfamily firms

	All firms			Ownership					
				Family			Non-family		
	Obs.	Mean	SD	Obs.	Mean	SD	Obs.	Mean	SD
Dependent variables									
Needs credit (Y, N)	3,288	0.322	0.467	1,070	0.505	0.500	2,218	0.263	0.440
Applied for credit (Y, N)*	1,162	0.148	0.356	519	0.115	0.320	643	0.169	0.375
Is credit constrained (Y, N)	3,288	0.289	0.454	1,070	0.468	0.499	2,218	0.231	0.422
Ownership (Y/N)									
Family share >50%	3,288	0.247	0.431	-	-	-	-	-	-
Family share > 20%	3,288	0.276	0.447	-	-	-	-	-	-
Family share in %	3,288	25.324	42.051	-	-	-	-	-	-
Female inclusion									
Female among top 3 owners (Y, N)	3,288	0.058	0.234	1,070	0.130	0.337	2,218	0.035	0.183
Female top manager (Y, N)	3,288	0.062	0.241	1,070	0.025	0.156	2,218	0.074	0.262
Corporate governance									
Top manager´s experience (years)	3,288	19.323	10.763	1,070	23.117	10.464	2,218	18.078	10.569
Firm has:									
Business strategy (Y, N)	3,288	0.389	0.488	1,070	0.230	0.421	2,218	0.441	0.497
Board of directors (Y, N)	3,288	0.601	0.490	1,070	0.652	0.476	2,218	0.584	0.493
Membership in business organizations (Y, N)	3,288	0.773	0.419	1,070	0.703	0.457	2,218	0.796	0.403
Manager with political function (Y, N)	3,288	0.060	0.237	1,070	0.062	0.241	2,218	0.059	0.235
Quality certificate (Y, N)	3,288	0.074	0.262	1,070	0.053	0.223	2,218	0.081	0.273
Firm characteristics									
Expected sale decrease (Y, N)	3,288	0.139	0.346	1,070	0.103	0.305	2,218	0.151	0.358
Expected sale increase (Y, N)	3,288	0.613	0.487	1,070	0.627	0.484	2,218	0.608	0.488
Firm´s age (years)	3,288	19.601	15.008	1,070	19.916	15.019	2,218	19.498	15.006
Building ownership (Y/N) (Y/N)	3,288	0.744	0.436	1,070	0.761	0.427	2,218	0.739	0.439
Firm size (below 20 employees – Y, N)	3,288	0.789	0.408	1,070	0.799	0.401	2,218	0.785	0.411
Operates in manufacturing (Y, N)	3,288	0.388	0.487	1,070	0.418	0.493	2,218	0.379	0.485
Operates in wholesale trade (Y, N)	3,288	0.269	0.443	1,070	0.176	0.381	2,218	0.299	0.458

a. Source: Authors

Note: * Variable restricted only to firms with need for credit = 1.

Consistently with Figure 1, in the empirical analysis below we test whether family ownership makes a difference in the sense that firms:

- Needed credit (all firms that applied for credit and those who did not apply due to unfavorable lending conditions or because they feared rejection);
- Applied for credit (firms that apply for lines of credit or loans in the last fiscal year before the survey).
- Were credit constrained (firms that applied for credit but were rejected and those who did not apply because they either expected rejection or thought they could not meet borrowing conditions).

Our definition of credit-constrained firms therefore includes those that (i) have been subject to supply constraints, that is rejected by banks and, (ii) have been subject to self-financing or demand constraints, because they had not applied even though they needed credit (Appendices). It is clear that the latter group reacts in part to the supply conditions, which shows that there are strong links between supply and demand factors. Given the key role of banks in the financial sectors of the Arab countries, we focus on firms' access to bank loans.

c. Empirical model

The empirical model utilized in this paper investigates the relationship between family ownership of the firm (FAM), defined as more than 50% of shares held by the same family, and its credit-related behavior and outcome (CREDIT BEHAVIOR). The latter definition encompasses need for credit, application for credit[6], and experiencing credit constraints (Figure 1). Incorporating firm strategy and management characteristics (MGMT) into the model enables the exploration of the mediating role of corporate governance. The model, as depicted in Equation 1, includes a set of control variables (C) to account for other differences between firms and countries. In Equation 1, i represents an index for an individual observation, Φ denotes the cumulative standard normal distribution function, and α, β, γ, and δ represent vectors of regression coefficients.[7]

[6] The "application for credit" variable is expressed as 1 if the firm requests credit and 0 if not. Therefore, this variable indicates, in the opposite direction, whether the firm is self-constrained.

[7] Definitions of all variables used in the empirical analysis can be found in Appendices.

$$P(CREDIT\ BEHAVIOR_i = 1|FAM_i, MGMT_i, C_i) = \Phi\ (\alpha + \beta \cdot FAM_i + \gamma \cdot MGMT_i + \delta \cdot C_i) \quad (1)$$

The binomial probit model, as described in Equation 1, enables us to estimate the relationship between family ownership of the firm and credit-related behavior. However, uncovering differences in the probability of needing credit, applying for credit, and experiencing credit constraints between family and nonfamily firms represents only the initial step. By controlling for management characteristics and their interaction with family ownership, we can investigate the mechanisms through which differences in management between family and nonfamily firms affect their financial behavior. It is worth noting that the average marginal effects of interaction terms presented in this paper are calculated using the method of Norton and Ai (2004), as they demonstrated that 'the magnitude of the interaction effects in nonlinear models does not equal their marginal effects' (Ai & Norton, 2003, p. 123).

This paper aims to assess the impact of ownership (family-owned firms vs. nonfamily-owned ones) on constraints in accessing bank credit. A common problem in this line of research is that decision to operate as a family-owned firm or not is not randomly assigned, but is taken by individual families with their unique characteristics. These may be correlated with characteristics that also affect the outcome variable (access to bank loans), leading to the so-called self-selection problem. In this case, simply comparing the mean probability of experiencing credit constraint of the treatment group with that of the control group could lead to biased estimates of the treatment effect.

To address this potential selection bias, we utilized the propensity score matching method (PSM) as, for example, in Frisco et al. (2007); Peruzzi (2017); Murro and Peruzzi (2019), Brixiova et al. (2020) and Balcar et al. (2024). It allows to control for confounding variables by matching “treated” units (family-owned firms) with untreated units (nonfamily-owned firms) that have similar propensity scores, i.e., a similar probability of receiving the treatment given a set of observed covariates. We used the PSM to pair firms with similar characteristics that differ only in family ownership (referred to as the 'treatment') to compare credit related behavior and outcome (referred to as the 'output') between these groups. We matched the firms based on the same characteristics or variables as those in the previous probit model, precisely their strategy and management characteristics (MGMT). We also incorporated a set of control variables (C)

to account for the variations between firms and countries. Table 2 (Models 3, 6, and 9) gives more details on all the variables used in the matching.

Furthermore, we employ three commonly used matching methods: nearest neighbor matching, radius matching and kernel matching. The nearest neighbor propensity score matching (PSM) associates each treated company with N control companies with the closest propensity scores. The use of replacement allows control companies to be matched to several treated companies, increasing the probability of a high-quality match for each treated company.[8] The radius matching method matches treated companies with all neighboring companies within a given radius (maximum propensity score distance).Finally, the PSM kernel matches all treated companies with a weighted average of control companies (we applied the Epanechnikov kernel).

4. Results

a. Baseline findings

Family firms in our sample from Egypt, Morocco, Tunisia, and Jordan exhibit a higher predicted probability of needing credit (by 16.5 percentage points; Model 1) and a lower probability of applying for it (by -12.1 pp.; Model 4), resulting in a higher probability of being credit-constrained (by 17.3 pp.; Model 7), compared to nonfamily firms in accordance with the results of Murro and Perruzzi (2019). In absolute terms, the predicted probability of needing credit is 45.5% for family companies and 27.7% for nonfamily firms. In addition, the predicted probability of applying for credit is 8.6% for family firms compared to 19.9% for nonfamily firms, while the predicted probability of being credit-constrained stands at 43.1% for family firms, contrasting with 24.1% for nonfamily firms. These substantial and statistically significant differences in credit need and access may have adverse effects on the further development of family firms. These results account for differences in many characteristics between family and nonfamily firms, such as firm size, sector of economic activity, firm age, ownership of buildings as potential collateral, and performance expectations for the future.

[8] In line with Frisco et al (2007), this allows for reducing the bias in the determination of the average treatment effects on the treated firms.

The following analysis focuses on the role of various components of management as a key factor influencing the financial behavior of family firms. To enhance our empirical model, we introduced the experience of the top manager in the business sector (see Models 2, 5, and 8 in Table 2). Figure 2 shows that more experienced managers (i) need credit more than the less experienced ones and, at the same time (ii) are less likely to apply for credit. Since the self-selection out of credit markets is the main driver of the credit constraints in our countries, the combination of the two factors can explain how experienced managers can operate firms that are subject to greater financial constraints. The lower likelihood of firms with top experienced manager to apply for credit can be explained by risk aversion (Sharma and Tarp, 2018; Yeoh and Hooy, 2020) but it is also consistent with observations in our database that experienced managers perceive financing as an obstacle to firm's operations.

Moreover, this raises the question of whether this behavior is driven by a lack of confidence in obtaining credit based on past experiences or a realistic assessment of the credit markets (Cowling et al., 2021). Controlling for differences in the experience of managers resulted in a slight decrease in the coefficient of the family firms' variable. This decrease reflects the significantly longer sector experience of top managers in family firms (23.1 years compared to 18.1 years in nonfamily firms; t = -6.77).

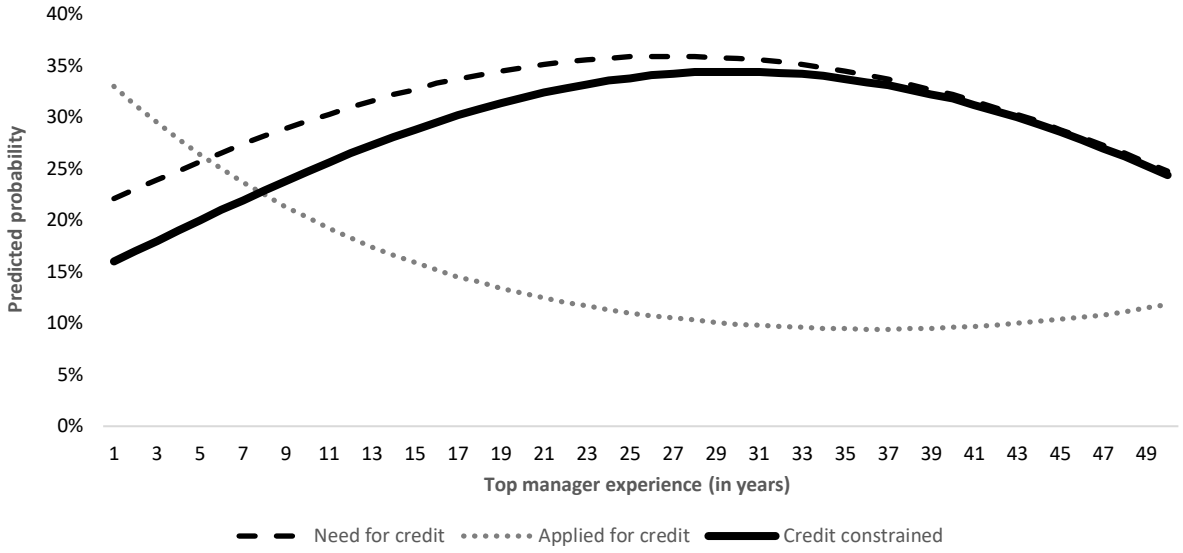
Table 2: Ownership type and credit constraints in Arab SMEs (average marginal effects)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	Needs credit			Applied for credit			Credit constrained		
Ownership									
Family share >50%	0.165***	0.140***	0.081**	-0.121***	-0.092**	-0.069	0.173***	0.140***	0.076**
	(0.042)	(0.040)	(0.038)	(0.044)	(0.047)	(0.049)	(0.041)	(0.039)	(0.036)
Female among owners	-0.044	-0.025	-0.034	0.018	0.033	0.036	-0.019	-0.004	-0.015
	(0.057)	(0.058)	(0.056)	(0.067)	(0.050)	(0.048)	(0.054)	(0.055)	(0.053)
Firm governance									
Female top manager		0.015	0.060		-0.106	-0.109		0.047	0.097
		(0.073)	(0.070)		(0.077)	(0.074)		(0.070)	(0.067)
Top manager experience		0.014**	0.012**		-0.010	-0.011*		0.017***	0.014***
		(0.006)	(0.005)		(0.007)	(0.007)		(0.005)	(0.005)
Top manager experience		-0.000**	-0.000**		0.000	0.000		-0.000***	-0.000**
squared		(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)
Business strategy			-0.219***			0.053			-0.235***

			(0.040)			(0.044)			(0.037)
Board of directors			0.101**			-0.058			0.112***
			(0.041)			(0.040)			(0.039)
Business membership			-0.011			0.075*			-0.030
organizations			(0.042)			(0.044)			(0.040)
Political function			0.086			-0.060			0.112*
			(0.069)			(0.049)			(0.065)
Quality certification			-0.014			0.078			-0.014
			(0.050)			(0.051)			(0.045)
Firm characteristics									
Expected sales: decrease	-0.011	-0.011	-0.017	0.097	0.097	0.070	-0.028	-0.030	-0.037
	(0.047)	(0.047)	(0.045)	(0.066)	(0.065)	(0.057)	(0.045)	(0.045)	(0.042)
Expected sales: the same	baseline	baseline	baseline	baseline	baseline	Baseline	baseline	baseline	baseline
Expected sales: increase	0.086**	0.083**	0.100***	0.023	0.032	0.025	0.090**	0.083**	0.101***
	(0.038)	(0.038)	(0.038)	(0.038)	(0.037)	(0.038)	(0.038)	(0.037)	(0.037)
Firm age	0.000	-0.000	0.000	0.001	0.002	0.002	-0.000	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Building ownership	0.012	0.005	0.017	-0.016	-0.003	-0.012	0.015	0.003	0.021
	(0.037)	(0.036)	(0.035)	(0.040)	(0.039)	(0.037)	(0.036)	(0.035)	(0.034)
Firm size: 1-19 employees	baseline	baseline	baseline	baseline	baseline	Baseline	baseline	baseline	baseline
Firm size: 20-100 employees	-0.072**	-0.077**	-0.051	0.145***	0.142***	0.129***	-0.106***	-0.113***	-0.091***
	(0.035)	(0.035)	(0.036)	(0.056)	(0.049)	(0.050)	(0.031)	(0.030)	(0.029)
Main economic activity	yes	Yes	yes	yes	yes	Yes	yes	yes	yes
Country	yes	Yes	yes	yes	yes	Yes	yes	yes	yes
Adjusted McFadden	0.059	0.066	0.099	0.147	0.167	0.190	0.061	0.073	0.117
Observations	3,288	3,288	3,288	1,162	1,162	1,162	3,288	3,288	3,288

Source: Authors. Note 1: The table reports Probit average marginal effects. Three, two and one star (∗) mean, respectively, a 99, 95 and 90% level of significance. Standard errors clustered at the firm level are in parentheses. All of the variables are defined in Table 1A. Note 2: Credit behaviors and outcomes are defined as follows (See also Figure 1): 1 = Need for a loan (applied or did not apply despite needing a loan), 0 = No need for a loan (sufficient capital). Applied for credit: 1 = Firm applied for a loan, 0 = Firm did not apply for a loan. Credit constrained: 1 = Constrained (did not receive a loan in full or did not apply despite needing a loan), 0 = Not constrained (received a loan or did not apply because it was not needed).

Figure 2: Top manager's experience & predicted probability of credit behavior and outcomes



Source: Authors

The experience of the top manager is one of the key components of management quality and firm governance. Therefore, we introduced additional variables capturing characteristics of management and business organization (see Models 3, 6, and 9). The marginal effects of managerial experience showed negligible changes after controlling for variables such as business strategy, the presence of a board of directors/supervisory board, membership in business organizations, political function of firm's representatives, and internationally-recognized quality certifications. This confirmed a weak relationship between the experience of top managers and management quality. Results in Table 2 indicate that only a formalized business strategy and the presence of a board of directors/supervisory board significantly correlate with our variables of interest. A formalized business strategy is associated with a lower need for credit, possibly due to efficient resource allocation, thorough risk assessment, operational efficiency, and effective cash flow management (Rhyne, 1986; Schwenk and Shrader, 1993; Duréndez et al., 2016), all of which reduce the need for external financing.

In contrast, the presence of a board of directors/supervisory board is correlated with a higher need for credit, potentially reflecting more ambitious expansion plans or investment opportunities. Pucheta-Martínez and Gallego-Álvarez (2020) show that the size and independence of the board are positively associated with firm performance. None of the

variables capturing management characteristics, including top manager's experience, were significantly correlated with credit application at 0.05 level (Model 6; Table 2).

This suggests that formal business strategies or the establishment of boards of directors/supervisory boards are not created solely to support credit applications, indicating no reverse causality. In terms of credit constraints, we observe a negative correlation with formal business strategy and a positive correlation with the presence of a board of directors/supervisory board, like the findings for the need for credit. Notably, the inclusion of management variables led to a significant alteration in the marginal effect for family firms´ variable in Table 2, highlighting unfavorable disparities in management practices of family businesses. For example, only 23.0% of family firms have a formalized business strategy compared to 44.1% of nonfamily firms, and 65.2% of family firms have boards of directors/supervisory compared to 58.4% of nonfamily firms. The effect of different management characteristics is particularly evident in credit application, where the dummy variable for family firms becomes statistically insignificant after controlling for management variables.

The access of female-owned or female-managed firms to credit remains to be a policy issue of significant interest: In what follows we therefore discuss the role of female owners and managers of family firms on their credit behavior (needing credit, applying for it) and outcomes (experiencing credit constraints). Morsy et al. (2019) provide evidence of the disproportionate disadvantage faced by women in Africa, particularly in North Africa, in accessing finance. The same study points out that women, compared to their male counterparts, are more likely to opt out of the credit market due to their low perceived creditworthiness. Regarding the role of female ownership (firms where one of top 3 owners is a woman) in the Arab countries studied, our results in Table 2 show that while having a top female manager is positively (negatively) associated with credit constraints and need for credit (applying for credit), however, the coefficients are not statistically significant. This could be due to the disproportionately low number of women involved in the formal sector as firms with top female manager make up 6.2% of all firms.

We conducted further analysis and found statistically significant differences between male and female-owned firms in terms of credit applications acceptance[9]. Firms with female among

[9] Regression results are available on request.

owners or those with women in top management are less likely to obtain credit when they apply for it. This could indicate either an underestimation of women's entrepreneurial abilities by the banks or limited capacity of women to create viable projects. Due to the small number of observations on women-led firms in our sample we do not present these results. Expanding the existing datasets so that suitable analysis of the informal sector, where most women in Arab countries operate, can be undertaken is a priority for future research.

b. Heterogeneity analysis

The above analysis reveals that family firms in the Arab countries studied tend to be more credit constrained than nonfamily firms. Specifically, they exhibit a significantly higher probability of needing credit but a lower probability of applying for it, resulting in a higher likelihood of being credit constrained. The analysis also shows that their more constrained access to credit is partly due to weaker managerial practices than those of nonfamily firms (Samara, 2021). Controlling for managerial practices led to a significant decrease in the coefficients linking family ownership with credit need and credit constraints. The dummy variable for family ownership became statistically insignificant in the case of credit application.

These results prompt an interesting question regarding whether management characteristics hold the same significance for family and nonfamily firms. To investigate this, we estimated a series of models with interaction terms between the dummy variable for family firms and each variable capturing management characteristics. We found no statistically significant differences in the effects of females in top management, the experience of the top manager in the sector of business, and having internationally-recognized quality certification on the examined dependent variables (i.e., need for credit, applying for credit, and credit constraints) between family and nonfamily firms (results are not reported here). However, other management characteristics exhibit different effects on family and nonfamily firms, although the interaction terms are often statistically significant only at the 0.1 level (Table 3).

Models 10 and 12 confirm that companies with formalized business strategies have a lower probability of needing credit and being credit constrained. However, this effect appears to be weaker for family firms. One possible hypothesis is that the weaker effect in family firms may be attributed to differences in the quality and implementation of strategy plans compared to other firms (Samara, 2021). Unfortunately, the dataset does not provide sufficient data to verify

this hypothesis. Model 11, on the other hand, confirms that there is no statistically significant relationship between formalized business strategy and the application for credit.

Models 13-15 reveal that the positive correlation between the presence of a board of directors/supervisory board and the probability of needing credit and facing credit constraints is observed only for family firms, as this relationship was found to be insignificant for other firms. On the one hand, this result underlines the significance of the board for family firms, as the higher probability of needing credit could signal the identification of growth opportunities by the board that need financing through credit. On the other hand, this finding raises questions about the efficiency of the boards, especially if they are influenced by family ties. Families can therefore put their personal interests before those of the firm (Carney, 2005; Charbel et al., 2013). In such cases, their effectiveness may be compromised, leading to a higher need for credit and an increased risk of being credit constrained. Indeed, several papers show that the managerial and business strategies of a firm but also their implementation differ depending on whether it is a family-owned business or not (Gudmundson et al., 1999; Chrisman et al., 2013; Tsoutsoura, 2021). In addition, Model 14 confirms that the presence of a board is not related to the probability of credit application.

We also analyzed potential differences in the effect of business membership organizations on the examined outcomes. Model 17 highlights the importance of membership in business organizations for applying for credit. This positive effect may arise from various factors, such as formal and informal information on the application process, or the creation of non-formal relations through networking among members. However, the model reveals that the positive effect is statistically significant for nonfamily firms, while it is lower or even negative (at the 0.1 level) for family firms, resulting in higher credit constraints for the latter (see Model 18). This suggests that family firms may not be able to leverage membership in business organizations as effectively as other companies.

The last variable examined pertaining to managerial characteristics was whether the owner, the top manager, or the board member held in the past a political position. The only difference observed in this variable between family and nonfamily firms is in the case of the probability of credit application. Interestingly, we found that the past political position of the firm's representatives is negatively correlated with the probability of applying for credit in the case of

nonfamily firms. For family firms, correlation is positive, but significant only at 0.1 level, , which nevertheless suggest that family firms may more frequently attempt to take advantage of social networks associated with political functions to obtain credit, pointing again to weaker managerial practices. Amore and Bennedsen (2013) showed that family businesses tend to invest a lot of resources in maintaining interpersonal relations with political leaders.

Table 3: Management and credit constraints in family and nonfamily firms (av. marg. effects)

VARIABLES	Need for credit	Applied for credit	Credit constrained	Need for credit	Applied for credit	Credit constrained
	(10)	(11)	(12)	(13)	(14)	(15)
Family share >50% * Business strategy	0.139*	-0.033	0.138*			
	(0.079)	(.099)	(0.076)			
Family share >50% * Board of directors				0.285***	-0.092	0.251***
				(0.077)	(0.097)	(0.074)
Family share >50%	0.042	-0.064	0.034	-0.087	-0.014	-0.070
	(0.045)	(0.060)	(0.041)	(0.054)	(0.053)	(0.051)
Business strategy	-0.258***	0.058	-0.280***	-0.195***	0.047	-0.213***
	(0.047)	(0.057)	(0.044)	(0.040)	(0.044)	(0.037)
Board of directors	0.109***	-0.059	0.120***	0.016	-0.027	0.035
	(0.041)	(0.040)	(0.039)	(0.049)	(0.051)	(0.047)
Other variables in Table 2	yes	yes	yes	Yes	yes	yes
Adjusted McFadden	0.103	0.191	0.122	0.112	0.194	0.128
Observations	3,288	1,162	3,288	3,288	1,162	3,288
	(16)	(17)	(18)	(10)	(20)	(21)
Family share >50% * Business membership organizations	0.106	-0.181*	0.146*			
	(0.088)	(0.101)	(0.086)			
Family share >50% * Political function				-0.014	0.267*	-0.120
				(0.142)	(0.128)	(0.136)
Family share >50%	0.003	0.043	-0.032	0.082**	-0.093*	0.083**
	(0.074)	(0.062)	(0.071)	(0.039)	(0.051)	(0.036)

Business membership organizations	-0.034	0.123**	-0.063	-0.011	0.073*	-0.030
	(0.046)	(0.057)	(0.044)	(0.042)	(0.043)	(0.040)
Political function	0.083	-0.047	0.108*	0.090	-0.181**	0.141*
	(0.069)	(0.045)	(0.065)	(0.084)	(0.081)	(0.078)
Other variables in Table 2	yes	yes	yes	Yes	yes	yes
Adjusted McFadden	0.101	0.199	0.120	0.099	0.201	0.118
Observations	3,288	1,162	3,288	3,288	1,162	3,288

Source: Authors. Note 1: The table reports Probit average marginal effects. Three, two and one star (∗) mean, respectively, a 99, 95 and 90% level of significance. Standard errors clustered at the firm level are in parentheses. All of the variables are defined in Table 1A. Note 2: Credit behaviors and outcomes are defined as follows (See also Figure 1): 1 = Need for a loan (applied or did not apply despite needing a loan), 0 = No need for a loan (sufficient capital). Applied for credit: 1 = Firm applied for a loan, 0 = Firm did not apply for a loan. Credit constrained: 1 = Constrained (did not receive a loan in full or did not apply despite needing a loan), 0 = Not constrained (received a loan or did not apply because it was not needed).

c. Robustness and selection-bias check

In this subsection, we investigate the robustness of our results and address endogeneity issues. First, we assess the robustness of the findings presented in Table 2 by using different definitions of the family firm variable. Table 4 displays the original estimates of Models 1-9 from Table 2, where the family firm variable was defined as a dummy variable with a value of 1 for holding more than 50% of shares by the same family, consistent with the definition used throughout the paper. We then re-estimated these models by using alternative definitions of family firms: a dummy variable with a value of 1 for holding more than 20% of shares by the same family (Models 1A-9A), and a continuous variable defined as the percentage share of the firm owned by the same family (Models 1B-9B). As shown in Table 4, all three variable specifications have a similar pattern, supporting the robustness of our results.

Table 4: Alternative specification of family business (average marginal effects)

VARIABLES	Need for credit			Applied for credit			Credit constrained		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Ownership									
Family share >50%	0.165***	0.140***	0.081**	-0.121***	-0.092**	-0.069	0.173***	0.140***	0.076**

	(0.042)	(0.040)	(0.038)	(0.044)	(0.047)	(0.049)	(0.041)	(0.039)	(0.036)
Other variables in Table 2	yes	yes	Yes	yes	yes	yes	Yes	yes	yes
Adjusted McFadden	0.059	0.066	0.099	0.147	0.167	0.190	0.061	0.073	0.117
Observations	3,288	3,288	3,288	1,162	1,162	1,162	3,288	3,288	3,288
	(1A)	(2A)	(3A)	(4A)	(5A)	(6A)	(7A)	(8A)	(9A)
Ownership									
Family share >20%	0.202***	0.182***	0.126***	-0.110***	-0.081*	-0.060	0.211***	0.183***	0.121***
	(0.039)	(0.038)	(0.036)	(0.042)	(0.048)	(0.052)	(0.037)	(0.036)	(0.034)
Other variables in Table 2	yes	yes	Yes	yes	yes	yes	Yes	yes	yes
Adjusted McFadden	0.071	0.076	0.105	0.144	0.165	0.189	0.075	0.084	0.124
Observations	3,288	3,288	3,288	1,162	1,162	1,162	3,288	3,288	3,288
	(1B)	(2B)	(3B)	(4B)	(5B)	(6B)	(7B)	(8B)	(9B)
Ownership									
Family share in %	0.002***	0.002***	0.001***	-0.001***	-0.001*	-0.001	0.002***	0.002***	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)
Other variables in Table 2	yes	yes	yes	yes	yes	yes	Yes	yes	yes
Adjusted McFadden	0.067	0.073	0.102	0.147	0.166	0.190	0.070	0.081	0.121
Observations	3,288	3,288	3,288	1,162	1,162	1,162	3,288	3,288	3,288

Source: Authors. Note 1: The table reports Probit average marginal effects. Three, two and one star (∗) mean, respectively, a 99, 95 and 90% level of significance. Standard errors clustered at the firm level are in parentheses. All of the variables are defined in Table 1A. Note 2: Credit behaviors and outcomes are defined as follows (See also Figure 1): 1 = Need for a loan (applied or did not apply despite needing a loan), 0 = No need for a loan (sufficient capital). Applied for credit: 1 = Firm applied for a loan, 0 = Firm did not apply for a loan. Credit constrained: 1 = Constrained (did not receive a loan in full or did not apply despite needing a loan), 0 = Not constrained (received a loan or did not apply because it was not needed).

In addition, we utilized the propensity score matching (PSM), that is pairing firms with similar characteristics that differ only in family ownership (the 'treatment') and comparing credit-related behavior (the 'output') between these groups. We employed three commonly used matching methods: the nearest neighbor matching, the radius matching, and the kernel

matching[10]. All the PSM models presented – the nearest neighbor matching, the radius matching, the kernel matching – were checked for meeting common support condition, i.e. overlap in the distribution of propensity scores of the treated and untreated firms, and the balance condition, ensuring that propensity scores adequately balance characteristics between treated and untreated firms.

The results of propensity score matching in Table 5 are based on fully specified models of need for credit (Model 3), applying for credit (Model 6), and being credit constrained (Model 9). By employing different matching algorithms to ensure the robust results, we observe that family firms, compared to what their outcomes would have been if they were nonfamily firms, have a higher probability of needing credit, ranging from 7.5 to 8.8 percentage points (pp) (Models 22-27). They also have a lower probability of applying for credit, ranging from -5.4 to -8.2 pp, and a higher probability of being credit constrained, ranging from 10.2 to 10.9 pp. These results largely support our previous findings.

Table 5: Average effect of family business on credit-related behavior (average treatment effect on the treated, ATT)

	Nearest neighbor k=3	Nearest neighbor k=5	Nearest neighbor k=10	Radius matching r=0.01	Radius matching r=0.05	Kernel matching
	(22)	(23)	(24)	(25)	(26)	(27)
Need for credit	0.075*	0.079*	0.082**	0.083**	0.086**	0.088**
(comparable with Model 3)	(0.045)	(0.041)	(0.039)	(0.035)	(0.036)	(0.036)
Obs. Treated	1,070	1,070	1,070	1,069	1,070	1,070
Obs. Untreated	2,218	2,218	2,218	2,217	2,218	2,218
Obs. Off support	-	-	-	2	-	-
	(28)	(29)	(30)	(31)	(32)	(33)
Applied for loan	-0.068*	-0.054**	-0.075***	-0.082***	-0.067***	-0.068***
(comparable with Model 6)	(0.037)	(0.027)	(0.029)	(0.031)	(0.023)	(0.023)

[10] We applied the psmatch2 command in Stata, which allowed us to implement a variety of PSMmethods, including the nearest neighbor matching, the radius matching, and the kernel matching. No particular functional form of the conditional expectations was assumed.

Obs. Treated	519	519	519	502	519	519
Obs. Untreated	643	643	643	632	643	643
Obs. Off support	-	-	-	28	-	-
	(34)	(35)	(36)	(37)	(38)	(39)
Credit constrained	0.109**	0.104***	0.102***	0.103***	0.107***	0.107***
(comparable with Model 9)	(0.044)	(0.041)	(0.039)	(0.035)	(0.036)	(0.037)
Obs. Treated	1,070	1,070	1,070	1,069	1,070	1,070
Obs. Untreated	2,218	2,218	2,218	2,217	2,218	2,218
Obs. Off support	-	-	-	2	-	-

Source: Authors. Note 1: The table reports Probit average marginal effects. Three, two and one star (∗) mean, respectively, a 99, 95 and 90% level of significance. Standard errors clustered at the firm level are in parentheses. All of the variables are defined in Table 1A. Note 2: Credit behaviors and outcomes are defined as follows (See also Figure 1): 1 = Need for a loan (applied or did not apply despite needing a loan), 0 = No need for a loan (sufficient capital). Applied for credit: 1 = Firm applied for a loan, 0 = Firm did not apply for a loan. Credit constrained: 1 = Constrained (did not receive a loan in full or did not apply despite needing a loan), 0 = Not constrained (received a loan or did not apply because it was not needed).

Note 3: The matching here is based on the same set of variables as the fully specified models of credit need (Model 3), credit demand (Model 6) and credit constraint (Model 9) in Table 2.

5. Conclusion

This article investigated the impact of the family ownership on credit access of SMEs in several Arab countries. This topic is important for at least two reasons. First, limited access to credit further impedes development of the already subdued private sector, and thus job creation in economies where employment creation, especially for women and youth, is a priority. Second, family ownership is highly widespread in Arab countries and can also be a means for women to enter the labor market, including as business owners and managers. Removing barriers to family firms' operations and expansion is therefore a key policy priority.

The study utilized nationally representative data from the World Bank Enterprise Surveys conducted in Egypt, Jordan, Morocco, and Tunisia between 2019 and early 2020. We employed a binomial probit model to analyze the association between family ownership of SMEs and credit-related behaviors, including the need for credit, credit application, and credit constraints.

The model controlled for various firm-specific variables, including size, sector of economic activity, age, ownership of buildings as collateral, future sales expectations, and country differences. Our findings reveal that family-owned firms in the countries of interest demonstrated a significantly higher predicted probability of requiring credit (by 16.5 percentage points) and a lower probability of applying for it (by -12.1 percentage points) than nonfamily ones, leading to a heightened likelihood of being credit-constrained (by 17.3 percentage points). These notable disparities between credit needs and access are likely to hinder the operations and expansion of family-owned firms and ultimately also the countries' growth and job creation.

Examining empirically the relationship between firms' managerial practices and credit-related behaviors showed that the more constrained access to credit by family than nonfamily firms can be partly explained by differences in management traits between the two firm types. By controlling these managerial practices, the gaps in credit needs and credit constraints between family and nonfamily firms markedly narrowed. Further, the empirical analysis revealed that firms with a formal written business strategy tend to encounter fewer credit constraints. These findings held under various robustness checks, including alternative specifications of family ownership and a selection-bias assessment with propensity score matching.

These findings have several policy implications. Firstly, demand side-policies, including financial literacy training and advocacy, must encourage viable family-owned firms to reduce self-selection out of the credit markets and apply for bank credit more frequently. The adoption of well-designed formal business strategies alongside strengthening other managerial practices may prove particularly beneficial for positive outcomes. On the supply side, it is essential to enhance the capacity of banks in the countries studied to better assess risks and recognize high potential projects presented by family-owned and other SMEs. It is equally important to develop new and innovative financing instruments, including from non-bank financial sector, that better serve the specific needs of the family-owned SMEs in the Arab region.

This paper leaves several important areas to further research. One pertains to the design and implementation of government incentives to accelerate the registration of the informal family businesses firms in the region, which would help unlock their productive and job-creating capacities. Further research is also needed on the extent and ways to optimize contributions of

women owners and managers to family firms' strategic priorities and operations in order to reach full potential of Arab family-owned SMEs.

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Appendices

Table 1A. Definition of variables.

Variable and Enterprise Surveys variable name	Definition and coding
Dependent variables	
Need for credit	0: No need for a loan: establishment had sufficient capital
<k16, k17>	1: Need for loan: applied for loan or did not apply although need loan
Applied for credit	0: Firm did not apply for loan
<k16>	1: Firm applied for loan
Credit constrained	0: Not constrained: received loan or did not apply because does not need loan
<k16, k17, k20a1>	1: Constrained: did not receive a loan in full or did not apply even though needs a loan
Ownership	
Family share >50%	0: Family owns ≤ 50% of the company
<BMb1>	1: Family owns > 50% of the company
Family share > 20%	0: Family owns ≤ 20% of the company
<BMb1>	1: Family owns > 20% of the company
Family share in %	Percentage share of the firm owned by the same family
<BMb1>	(continuous)
Female among owners	0: No females among the owners
<b4>	1: Females among the owners
Management	
Female top manager	0: Male top manager
<b7a>	1: Female top manager
Top manager experience	Number of years of work experience in the sector of business
<b7>	(continuous)
Business strategy	0: Firm does not have formalized business strategy
<BMb3>	1: Firm has formalized written business strategy with clear KPIs
Board of directors	0: Firm does not have a board of directors or a supervisory board
<BMb4>	1: Firm has a board of directors or a supervisory board
Business membership organizations <BMb6>	0: Firm does not participate in a business membership organization 1: Firm participates in a business membership organization
Political function	0: Owner, CEO, top manager, or board member did not participate in a
<BMb5>	political position

	1: Owner, CEO, top manager, or board member participated in a political position
Quality certification <b8>	0: Firm does not have an internationally-recognized quality certification 1: Firm has an internationally-recognized quality certification
Firm characteristics	
Expected sales <BMd1a>	1: Next year, total sales are expected to decrease 2: Next year, total sales are expected to stay the same 3: Next year, total sales are expected to increase
Firm age <b5, a14y>	The difference between actual year and the year in which the firm began operations (continuous)
Building ownership <g6a>	0: The firm does not own buildings it occupies or less than 100 % of them. 1: The firm owns 100 % of buildings it occupies.
Firm size <l1>	0: 1-19 employees 1: 20-100 employees
Main economic activity <d1a1a>	1: Manufacturing 2: Retail trade 3: Wholesale trade 4: Construction 5: Hotel or restaurant 6: Services
Country	Morocco Egypt Tunisia Jordan

Source: Authors