Government ownership in the MENA region: the roles of institutional voids, sociocultural norms and control-enhancing mechanisms

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Abstract

Purpose – *This study aims to examine the impact of institutional voids and sociocultural norms on the prevalence of government ownership in the Middle East and North Africa (MENA) region. It also tests the moderating effect of control-enhancing ownership mechanisms, specifically block ownership and pyramid structures, on these relationships.*

Design/methodology/approach – *Lead-lag regressions were applied to mitigate reverse causality issues on 1,215 firms from 11 MENA countries from 2010 to 2017. Instrumental variables two-stage least squares was used for a greater control over endogeneity issues. The propensity score matching was used as a main robustness check as well as fixed effects at the year-level and the country-level.*

Findings – *This study demonstrates that government ownership in the MENA region functions as a response to institutional voids and societal acceptance of power. The findings further illustrate that the efficiency of government ownership as a response to institutional voids is diminished and the extent of control and power in firms is enhanced when control-enhancing ownership mechanisms such as block and pyramid ownership structures are adopted.*

Originality/value – *This study introduces a novel model, leveraging a unique data set to address key research gaps, with a particular focus on the under-explored MENA region. It provides insights into how institutional voids and sociocultural norms shape government ownership, extending beyond traditional research on formal institutions, such as legal origins and financial markets. Additionally, it examines the under-examined dynamics of government control-enhancing ownership structures within the institutional environment.*

Keywords *Government ownership, Institutional voids, Sociocultural norms, Control-enhancing ownership mechanisms, MENA region*

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1. Introduction

The Middle East and North Africa (MENA) region has long been a focal point of global interest due to its rich historical legacy and strategic economic importance (Drine, 2013). Over the past century, the region has undergone significant transformations, influenced by colonial legacies, postindependence state-building efforts and the forces of globalization (Cammett, 2013). Central to these transformations is the interplay between institutional dimensions and government ownership that have shaped economic and social outcomes in MENA countries (Cuervo-Cazurra, 2011).

In many Eastern economies – including those in the MENA – restructuring their markets during the late capitalist era, the initial lack of mature financial systems, legal frameworks and market institutions necessitated government intervention to achieve economic growth and social development (Cuervo-Cazurra, 2011). To ensure stability, provide infrastructure and guide early economic reforms, the state intervened, and in some cases, expanded its role to address the challenges of rapid postindependence reconstruction and industrialization due to insufficient private sector capabilities (Cuervo-Cazurra, 2011; Drine, 2013). The state consequently maintained control over key industries to stabilize the economy and guide growth, leading to the significant development and dominance of state-led models (OECD, 2019).

State ownership in MENA countries has historically been characterized by a strong presence in key sectors such as oil and gas, utilities and infrastructure (OECD, 2019). This model of state control has its roots in the postcolonial era, where newly independent states sought to assert sovereignty and manage resources deemed vital for national development (Cammett, 2013). Historical and cultural factors have likewise fostered a general acceptance of centralized authority in MENA countries (King, 2009). This acceptance makes it easier for the state to assume and maintain control over key market players. The success of state-led economic models in improving living standards and achieving rapid economic growth, particularly during the mid-20th century, has reinforced societal acceptance of government ownership and legitimized continued state control (Cuervo-Cazurra, 2011). Nevertheless, while this approach facilitated rapid economic growth and development for a certain period, it also led to the entrenchment of state bureaucracies and the creation of monopolistic structures, underlying the role of state ownership in amplifying institutional weaknesses (Hertog, 2019). Eventually, by the late-20th century, the oil price collapse exposed the fragility of state-led economies that were heavily reliant on oil revenue. Nonetheless, the state's influence remained strong in MENA economies as marginal market-oriented reforms took hold (Cuervo-Cazurra, 2011; Farah *et al.*, 2021).

Since the late capitalist era and up to date, the relationship between institutional factors and government ownership tends to lean more strongly toward government ownership being a consequence of institutional deficiencies and societal acceptance of power, particularly in emerging economies (Bremmer, 2010; Gamble, 2019). This is because the initial conditions of institutional underdevelopment and cultural acceptance of centralized authority necessitated state intervention as a stabilizing and developmental force (Evans, 2012; Musacchio *et al.*, 2015). Over time, while government ownership reinforced these conditions, its origin as a response to institutional deficiencies and societal norms is more foundational and continues to be significant as of and during the late capitalist era (Streeck, 2014; Stiglitz, 2017). Accordingly, this paper aims to focus on and further examine this specific relationship, as understanding it can illuminate the persistence of government ownership in MENA countries and the associated complexities and challenges.

1.1 An institutional perspective

Institutions are broadly defined as formal and informal "rules of the game" that shape organizational fields, influencing how organizations behave, structure themselves and achieve legitimacy (North, 1990; Scott, 1995). The institutional theory posits that organizations are embedded within a complex network of sociocultural, economic, regulatory and political factors that influence or constrain their behaviors, practices and structures to maintain legitimacy (Scott, 2008, 2013; Jackson and Deeg, 2008). Global variations in organizational practices can be understood through each organization's institutional context (Aguilera and Grøgaard, 2019; Haxhi and Aguilera, 2017). One such context is the setting of institutional voids (Mair and Marti, 2009). The concept of institutional voids, particularly relevant in emerging markets, offers a complementary perspective alongside the institutional theory to explain how different environments shape organizational behaviors and practices (Arslan, 2012; Chakrabarty and Bass, 2014; Doh *et al.*, 2017; Liedong *et al.*, 2020; Wang *et al.*, 2022a). Institutional voids denote the lack or underdevelopment of key formal institutions – such as political, financial and regulatory frameworks – that support efficient market functioning (Khanna and Palepu, 1997, 2000). Recent views, however, interpret these voids as conditions that limit and restrict market access and functioning, rather than simple "gaps" in institutions (Mair *et al.*, 2012). Common in emerging markets, institutional voids pose significant challenges for firms

(Mair and Marti, 2009), impacting access to capital, governance, contract enforcement, regulatory transparency and political impediments (Kim and Song, 2017). These institutional deficiencies consequently increase transaction and operational costs (Khanna and Rivkin, 2001), elevate business uncertainty (Henisz and Delios, 2000) and influence firm strategies (Liedong *et al.*, 2020; Marquis and Raynard, 2015) and corporate governance mechanisms (Chakrabarty and Bass, 2014; Inoue *et al.*, 2013). The institutional theory suggests that firms respond by either filling these voids or adapting their strategies (Khanna *et al.*, 2015), often by collaborating with local market players (Khanna and Palepu, 2010), including state investors (Arslan, 2012; Palepu and Khanna, 1998) or creating new organizational structures to navigate constraints (Wang *et al.*, 2022b). Institutional factors hence shape organizational strategies and structures, making institutional voids actionable constructs that firms can address through adaptive responses (Doh *et al.*, 2017; Greenwood *et al.*, 2011; Khanna *et al.*, 2015; Wang *et al.*, 2022a).

Additionally, the institutional theory suggests that institutions drive organizations to conform through isomorphic pressures, ensuring legitimacy (DiMaggio and Powell, 1983; Scott, 2008). Most notable research in this area highlights how informal institutions exert pressures that shape organizational behaviors and practices, compelling firms to adopt strategies and procedures that enhance credibility and competitive positioning (Kostova and Roth, 2002; Scott, 2007; Scott, 2008). This conformity promotes homogeneity within fields as organizations align with societal norms to ensure legitimacy and improve survival chances (Kostova *et al.*, 2008). Much of the existing research underlines the importance of normative pressures – unwritten societal expectations that drive organizational response (Bundy *et al.*, 2013; Durand *et al.*, 2019) and compel organizations to adopt practices aligning with social norms to sustain legitimacy and acceptance, including those related to ownership structures (Holderness, 2017). By conforming to these pressures, organizations strengthen their credibility and competitive edge (Greenwood *et al.*, 2011; Scherer *et al.*, 2013), reflecting isomorphic tendencies that underscore social legitimacy's role in shaping organizational strategies and practices (DiMaggio and Powell, 1983).

To advance international business scholarship, it is essential to emphasize the diverse nature of institutions (Aguilera and Grøgaard, 2019) and to introduce new dimensions to existing knowledge frameworks (Fainshmidt *et al.*, 2018). This approach is particularly pertinent in understanding complex regions of global geopolitical significance, such as the MENA (Farah *et al.*, 2021). This study is accordingly grounded in the institutional theory to examine the diverse institutional landscape of the MENA, underscoring the role of both formal and informal dimensions in shaping government ownership and its control patterns. The study of corporate governance extends beyond purely economic and legal perspectives, requiring a broader consideration of other formal institutions and sociocultural factors (Aguilera *et al.*, 2016). The institutional theory provides a robust framework for highlighting the unique dynamics within the MENA, a region marked by diverse colonization histories, distinct state forms and entrenched political traditions and sociocultural norms (Jamali *et al.*, 2020). Unlike prior research, which often focuses on a limited selection of institutions, this study explores a broader array of institutions to capture various institutional dynamics. In doing so, this study extends on the institutional theory and examines the intricate institutional landscape in the MENA, providing valuable insights and critical perspectives on government ownership within a region of significant geopolitical and economic relevance.

2. Literature review and theoretical framework

Existing research indicates that government ownership is shaped by institutional conditions and is more prevalent in weaker institutional settings (Child *et al.*, 2012; Musacchio *et al.*, 2015; Inoue *et al.*, 2013). This research stream has predominantly highlighted institutional voids in formal systems – particularly in regulatory frameworks and financial markets

(La Porta *et al.*, 2002, 2008) – while often overlooking other critical institutional dimensions (Liedong *et al.*, 2020; Inoue *et al.*, 2013). Additionally, studies on legal contexts tend to focus on legal origins (Borisova *et al.*, 2012) rather than on the strength and development of regulatory frameworks, including investor protections or control of corruption (Khanna and Palepu, 1997). While some research explored additional institutional dimensions (Chakrabarty, 2009; Mair *et al.*, 2012), it has yet to fully address the diversity of formal and informal institutions, especially in relation to government ownership or in the MENA context (Barbar, 2025). Furthermore, studies investigating government ownership often focus narrowly on voids in formal institutions (Wang *et al.*, 2022a) or on the impact of host and home institutional dynamics on firm internationalization and entry strategies (Cui and Jiang, 2012; Meyer *et al.*, 2014), rather than examining how local and informal institutions shape governance mechanisms.

Khanna and Palepu (1997) propose a framework of institutional dimensions that includes financial, product and labor markets, as well as regulatory systems and corruption. Doh *et al.* (2017) extend this by highlighting the critical roles of political and sociocultural factors in understanding institutional environments. Bothello *et al.* (2019) further note that research on institutional voids often emphasizes formal market-supporting and contract enforcement institutions, yet it tends to overlook other key formal institutions and informal factors like sociocultural norms, which significantly shape economic interactions. Together, these studies underscore the need for a broader, more holistic approach to institutional analysis in emerging markets, one that accounts for both formal and informal dimensions.

Another research stream emphasizes the prevalence of control-enhancing ownership structures in emerging markets (Armitage *et al.*, 2017), particularly in MENA countries (Martinez-Garcia *et al.*, 2022) and explores the governance implications of these configurations (Filatotchev *et al.*, 2008). Such structures are often adopted to maintain heightened involvement and control, which can negatively impact firms (Claessens *et al.*, 2000). Although these configurations seem to be influenced by institutional factors (Wang *et al.*, 2012; Young *et al.*, 2002), their interaction with the broader institutional environment and government ownership remains underexplored (Chen *et al.*, 2014; Inoue *et al.*, 2013). Overlooking the varied ownership structures governments adopt may obscure a complete understanding of the extent and efficiency of government involvement (Grosman *et al.*, 2016), particularly within the context of institutional voids and sociocultural norms, which present unique challenges and elicit specific firm responses (Chakrabarty, 2009). Furthermore, not distinguishing between different ownership structures risks implying a uniformity that overlooks the varying objectives pursued by the government (Bruton *et al.*, 2015; Inoue *et al.*, 2013). Current research largely examines these governance models within private firms, underscoring the need for a dedicated focus on state-owned enterprises (SOEs) (Wang *et al.*, 2012).

The influence of institutions on governance mechanisms in the international business literature calls for a comprehensive exploration of institutional dimensions, particularly concerning government ownership (Bothello *et al.*, 2019; Doh *et al.*, 2017; Liedong *et al.*, 2020). Current research gaps and equivocal findings on SOEs in MENA countries underscore this need as well (Al-Janadi, 2021; Farah *et al.*, 2021). The region's high state ownership (Farah *et al.*, 2021; Olugbade *et al.*, 2019), significant institutional challenges and unique sociocultural dimensions (OECD, 2019) highlight the importance of examining institutional impacts on government ownership and the role of control-enhancing mechanisms in understanding the intricate relationship between institutional factors and corporate governance in the region.

Emerging markets, such as those in the MENA region, provide an ideal landscape for testing the applicability of theoretical frameworks, particularly those grounded in institutional theory (Wright *et al.*, 2005). First, its institutional configurations not only set it apart globally but also distinguish it from other emerging economies, making it an ideal setting to explore the interplay between institutional voids, sociocultural dimensions and state ownership (Nadal, 2013). Second, government ownership is both widespread (Barbar and Mutlu, 2020; Farah *et al.*, 2021) and politically charged, as demonstrated by recent political debates linked to excessive control and cronyism, notably during the Arab Spring uprisings (Barbar and Khodr, 2023). Third, current studies on government ownership often overlook critical aspects of the institutional environment and lack a comprehensive examination across different MENA countries (Martinez-Garcia *et al.*, 2022). Fourth, the prevalence of control-enhancing ownership structures, coupled with their largely unexplored implications for firms operating within the region's institutional voids and sociocultural landscapes, further highlights the need to scrutinize how these factors shape governance outcomes. Finally, with corporate governance still developing in the region, as reflected by recent reform efforts to strengthen local markets (Koldertsova, 2011), this study is particularly timely.

This study offers three main contributions. First, it extends on the institutional theory by exploring the often-overlooked MENA context (Fainshmidt *et al.*, 2018), addressing gaps in the literature on institutional influences beyond legal and financial markets (Bothello *et al.*, 2019; Doh *et al.*, 2017). This approach emphasizes the role of informal institutions and underscores the importance of a comprehensive exploration of diverse institutional voids and institutional conditions. Second, it differentiates government ownership structures, recognizing that varied control and ownership patterns impact the degree and nature of government involvement in firms (Grosman *et al.*, 2016). By challenging the assumption that government ownership is uniform, the study provides a nuanced understanding of different ownership structures and their governance implications for SOEs. Third, by analyzing data and providing empirical evidence from 11 MENA countries, this research fills gaps in emerging market studies (Wright *et al.*, 2005), particularly regarding the influence of institutional contexts on government ownership objectives.

Drawing on the foundational principles of the institutional theory and building on the models developed by Khanna and Palepu (1997) as well as the propositions by Doh *et al.* (2017) and Bothello *et al.* (2019), this study explores the influence of five institutional dimensions, both formal and informal, on the prevalence of government ownership in the MENA region. With respect to formal institutions, the study follows Khanna and Palepu's (1997) framework by focusing on (1) market conditions across financial, labor and product markets, (2) control of corruption and (3) legal frameworks, particularly property rights. Expanding on Doh *et al.*'s (2017) model, the study also examines the influence of (4) political constraints as an indicator of political democracy and (5) power distance as an informal institutional dimension reflecting critical sociocultural characteristics in the MENA. Bothello *et al.* (2019) further underscore Doh *et al.*'s (2017) emphasis on examining institutional dimensions that extend beyond formal structures, highlighting the role of informal institutions rooted in sociocultural dynamics.

The study further scrutinizes these relationships by testing the moderating impact of two key control-enhancing mechanisms: block and pyramid ownership structures [1]. Drawing on the principal–principal agency theory – which emphasizes agency conflicts among different classes of owners, particularly between controlling and minority shareholders in concentrated and pyramidal ownership structures – this approach highlights that block and pyramid ownership structures can intensify conflicts between majority and minority owners (Morck *et al.*, 2005; Hu and Sun, 2019). Given that many firms in emerging markets (Young *et al.*, 2002) and MENA countries (Martinez-Garcia *et al.*, 2021, 2022) are under state control with concentrated or pyramidal ownership structures, the potential for conflicts among majority and minority shareholders increases. Recognizing that governance mechanisms, and thus agency issues, vary across institutional contexts (Bruton *et al.*, 2010), it is essential to integrate an agency perspective with institutional analysis (Fitza and Tihanyi, 2017; Xia and Walker, 2015). The institutional theory posits that organizations are shaped by the institutional environment in which they operate (North, 1990; Scott, 2008, 2013), providing a foundation for organizational objectives, structures and strategies, as well as for addressing agency issues, configuring power relations, influencing identities and guiding behaviors (Greenwood *et al.*, 2014; Ocasio *et al.*, 2017; Peng *et al.*, 2018). Organizations are therefore expected to adapt their governing logics to align with institutional conditions, which is critical for their long-term viability (Scott, 2008, 2013). Since ownership structures are not just about *who* controls firms but also *how* these arrangements align with the broader institutional environment, they can significantly influence the manner and extent to which government ownership operates within its institutional context (Thomsen and Pedersen, 2000; Wang *et al.*, 2012).

This study hence adopts a theoretical framework that is grounded in the institutional theory to examine the prevalence of government ownership, and integrates agency and institutional perspectives to explore the governance implications of government control-enhancing ownership structures in the MENA region. The institutional theory – which posits that organizational strategies and structures are shaped by the formal and informal conditions of the institutional environment (North, 1990; Scott, 2008, 2013) – serves as the foundational lens to examine the impact of institutional voids and sociocultural norms on the prevalence of government ownership. In emerging economies such as those in the MENA, institutional voids – marked by underdeveloped market, legal and political systems – are especially pronounced, often prompting the adoption of alternative governance mechanisms like state ownership (Cuervo-Cazurra *et al.*, 2014). Sociocultural norms, particularly high power distance, further reinforce societal acceptance of government ownership and centralized authority (Chen *et al.*, 2022). Drawing on the principles of the institutional theory and following the expanded models proposed by Doh *et al.* (2017) and Bothello *et al.* (2019), which emphasize the sociopolitical and cultural embeddedness of organizations, this study hence incorporates both institutional voids in formal systems (market conditions, corruption control, property rights and political constraints) and informal institutional dimensions (power distance), and argues that these institutional factors shape the prevalence of government ownership in the MENA. Additionally, since agency issues vary across institutional contexts (Bruton *et al.*, 2010), integrating agency perspective with institutional analysis (Fitza and Tihanyi, 2017; Xia and Walker, 2015) offers a deeper understanding of how government ownership is shaped by the broader institutional context. Accordingly, this study also draws on the principal – principal agency theory (Young *et al.*, 2008) – which focuses on agency conflicts between controlling and minority shareholders in concentrated and pyramidal ownership structures – to explore the governance implications of government control-enhancing ownership structures. In regions such as the MENA, where block and pyramid ownership are common and often linked to the state (Martinez-Garcia *et al.*, 2021, 2022), these agency conflicts are exacerbated by weak institutional conditions, especially weak investor protections (Filatotchev *et al.*, 2001; La Porta *et al.*, 2000), necessitating an integrated agency – institutional perspective to capture the complexity of institutional dynamics and control-enhancing ownership mechanisms. Thus, by synthesizing these theoretical strands, this framework offers a nuanced understanding of how institutional deficiencies and dynamics shape government ownership and the governance mechanisms surrounding it.

The rest of the paper is organized as follows: Section 2 presents the literature review and theoretical framework, Section 3 the development of hypotheses, followed by a description of the data and methodology in Section 4. Section 5 reports the results, robustness checks, key research implications, and managerial and policy implications. This is followed by the limitations of the study in Section 6. The paper concludes with final remarks in Section 7.

3. Hypotheses development

3.1 Institutional voids in market conditions (financial, labor and product markets), control of corruption, property rights and political constraints

Financial markets in the MENA present challenges like limited liquidity, restricted financing options and a heavy reliance on commercial banks (Ghosh, 2017). High capital costs make private financing difficult, positioning the government as a more viable investor with advantages in liquidity, capital expenses and debt support (Borisova and Megginson, 2011; Musacchio *et al.*, 2015). Given these constraints, governments often emerge as essential financiers, offering favorable terms and subsidizing credit to fund projects otherwise inaccessible through private channels (Cuervo-Cazurra *et al.*, 2014; Musacchio and Lazzarini, 2014). Additionally, many MENA countries grapple with high unemployment, skill mismatches and a reliance on the informal sector (OECD, 2019). Weak labor markets can discourage private investment, leading to a shift toward government ownership, as firms hesitate to initiate new projects due to increased risks (Wang *et al.*, 2022a). Governments may increase ownership to stimulate job creation and economic growth, providing job stability at the firm-level (Cuervo-Cazurra, 2018; Bruton *et al.*, 2015). Similarly, in weak product markets marked by limited competition and inefficient resource distribution, government ownership tends to rise as private investment declines (Liu *et al.*, 2018). In such challenging conditions, government intervention through ownership stakes supports strategic firms and protects public interests (Carney *et al.*, 2016; Cuervo-Cazurra *et al.*, 2014; Estrin *et al.*, 2016). Thus, government ownership often plays a vital role in addressing market failures, stabilizing prices and ensuring economic stability (Demirbag *et al.*, 2011).

Corruption in many regions, particularly in the MENA and other postcolonial states, often traces back to the colonial period, where exploitative practices and lack of accountability were common (Acemoglu *et al.*, 2001; Kırşanlı, 2024). These colonial legacies created institutional weaknesses that persisted into the postindependence era. As newly established states sought economic growth, widespread corruption hindered private sector development, leading governments to adopt state-led models to maintain stability and drive progress (Stiglitz, 2017; Olugbade *et al.*, 2019). Increased government ownership, in response to this inherited corruption, often reinforced state control, creating cycles in which corruption and government involvement continued to reinforce one another (Bouchet *et al.*, 2018; Kubbe and Varraich, 2020). While government ownership can sometimes perpetuate corruption, it generally arises as a response to pre-existing institutional issues rather than as the root cause (Faisal and Jafri, 2017; Manyaka and Nkuna, 2014). The initial need for state control in the postindependence era emerged from the erosion of private sector confidence due to inherited and persisting corruption, necessitating government intervention to maintain economic order (Kang, 2002; Khan and Sundaram, 2000; Mkandawire, 2011). Limited corruption control often distorts economic outcomes, favoring connected entities over public interest and efficiency (Rose-Ackerman and Palifka, 2016). This distortion erodes trust, as contracts and business opportunities may be influenced by unethical practices such as bribery and favoritism (Uhlenbruck *et al.*, 2006). Investors may view enterprises in these conditions as prone to corrupt practices, increasing perceived investment risk and reducing prospects (Asiedu and Freeman, 2009). In environments with weak corruption control, local firms are often favored over foreign investors (Habib and Zurawicki, 2002) and incumbent entities such as SOEs tend to be prioritized over private firms, small–medium enterprises (SMEs) and start-ups (Bruno *et al.*, 2013). This prevalence of government ownership, while not ideal, disproportionately benefits larger government-linked enterprises, diminishing private sector confidence and leading to expanded state control, which perpetuates government dominance over a competitive private sector (Nguyen and van Dijk, 2012).

Additionally, deficiencies in legal frameworks, especially gaps in property rights, significantly influence investment conditions by discouraging private investment and limiting diversification opportunities (La Porta *et al.*, 2002, 2008). Weak property rights create uncertainty about the ability of individuals and firms to secure their assets (Globerman and Shapiro, 2003), increasing expropriation risks, particularly for minority investors (Friedman *et al.*, 2003). This uncertainty exacerbates conflicts of interest among shareholders, undermines investor confidence and weakens investment prospects (Hussain *et al.*, 2023). Poorly defined property rights are thus linked to informal payments, expropriation risks and a greater likelihood of political intervention in markets (Cull and Xu, 2005; Singh and Huang, 2015). Such conditions are often seen as key institutional voids in emerging economies (Khanna and Palepu, 2000), which may be addressed by SOEs (Estrin *et al.*, 2009). In environments marked by asset insecurity and enforcement challenges, SOEs – being government-backed – can help stabilize property rights frameworks, particularly in cases requiring bailouts or default protection (Gourevitch and Shinn, 2010; Pistor and Xu, 2005).

Investment opportunities are likewise significantly shaped by a country's level of democracy, political stability and policy strength (Daude and Stein, 2007). Political constraints play a crucial role in defining the investment climate (Henisz, 2002). Low political democracy levels introduce instability, raising concerns about market legitimacy and increasing perceived risk (Henisz and Delios, 2001). The concentration of power and unpredictable policymaking foster volatility, which undermines market competitiveness, stability and reliability (Brouthers, 2002; Hussain *et al.*, 2023). These conditions create substantial risks for investors, such as sudden regulatory changes, policy rigidity and expropriation threats (Delios and Henisz, 2000; Henisz, 2000). Consequently, in politically constrained environments, governments may increase their stakes in firms to consolidate power and compensate for private investment shortfalls caused by heightened risk and uncertainty (Roe, 2000).

Government ownership frequently arises as a response to these institutional voids, supporting firms and markets by offering essential resources, employment stability and regulatory enforcement (Cuervo-Cazurra *et al.*, 2014; Cuervo-Cazurra and Li, 2020). This ownership role accordingly addresses distorted investment conditions and mitigates uncertainties (Demirbag *et al.*, 2011; Estrin *et al.*, 2009). The institutional theory emphasizes the strong link between context and firm strategy (Peng *et al.*, 2008, 2009, 2018), suggesting that organizational arrangements and governance structures often substitute for the lack or absence of supporting institutions (Doh *et al.*, 2017; Liedong *et al.*, 2020). The concept of institutional voids provides a framework to understand how such conditions impair and restrict firm-market dynamics (Wang *et al.*, 2022a) by creating uncertainty (Gao *et al.*, 2017), and reveals opportunities for capable investors to step in (Doh *et al.*, 2017; Khanna *et al.*, 2015). In contexts where formal institutions are weak, absent or constraining, government entities often step in to fill these voids, ensuring stability, continuity and legitimacy (Carney *et al.*, 2016; Cuervo-Cazurra *et al.*, 2014; Estrin *et al.*, 2009). Hence:

H1a. In MENA countries, government ownership emerges as a response to institutional voids in market conditions, corruption control, property rights and political constraints.

3.2 Sociocultural norms: power distance

While much research on emerging markets emphasizes formal institutions as sources of constraints and voids (Stephan *et al.*, 2015), informal institutions, particularly normative ones, are equally significant (Bothello *et al.*, 2019; Doh *et al.*, 2017). Understanding local sociocultural conditions is crucial, as it enables firms to gain a strategic advantage by aligning with the sociocultural norms of their environment (Chung and Luo, 2013; London and Hart, 2004). Organizational values and norms often develop as firms adapt to their surroundings to achieve legitimacy (Arslan, 2012). These normative influences can be viewed as a "logic of appropriateness," shaped by shared beliefs, values and cultural standards that define acceptable behavior (DiMaggio and Powell, 1983; Francis *et al.*, 2009). Consequently, based on the institutional theory, normative isomorphism reflects how sociocultural norms prompt organizations to conform to collective expectations, thereby attaining legitimacy (Kostova and Roth, 2002; Scott, 2008, 2013). In contexts with strongly embedded sociocultural norms, organizations increasingly institutionalize by adjusting their practices and structures in response to normative pressures (Kostova *et al.*, 2008).

Power distance represents the extent of centralized authority, hierarchical structures and unequal power distribution in a society (Hofstede, 2001). In high power distance cultures, class divisions are common, resulting in power concentration among elites and creating a divide between those in authority and the general population (Chakrabarty, 2009; Estrin *et al.*, 2016). This imbalance fosters a climate where government control over firms and involvement in market activities are more readily accepted (Hennart and Larimo, 1998) and government involvement in economic affairs and decision-making is expected (Chen *et al.*, 2022; De Jong and Semenov, 2006). In such societies, normative pressures drive isomorphism as organizations align with government ownership models to reflect societal expectations for hierarchical power and centralized authority (Chen *et al.*, 2022; De Jong and Semenov, 2006). Consequently, in high power distance societies, government ownership is more prevalent, reinforcing isomorphic tendencies and the pursuit of legitimacy (Estrin *et al.*, 2016). Thus, government ownership emerges not only as a response to institutional voids but also as an adaptation to institutional pressures (Marquis and Raynard, 2015). Hence:

H1b. In MENA countries, government ownership emerges as a response to sociocultural norms characterized by high power distance.

3.3 The moderating effect of control-enhancing ownership mechanisms: block and pyramid ownership structures

While government ownership may arise as a response to institutional voids to provide stability and legitimacy (Estrin *et al.*, 2009; Khanna *et al.*, 2015), its political and social agendas are equally important (Okhmatovskiy, 2010; Inoue *et al.*, 2013; Tihanyi *et al.*, 2019). Governments may pursue objectives that extend beyond the firm's interests, sometimes prioritizing these goals at the expense of the organization's welfare (Cui and Jiang, 2012; Martinez-Garcia *et al.*, 2021; Meyer *et al.*, 2014). Thus, ownership structure is crucial in determining whether the government acts as a strategic or political investor (Musacchio *et al.*, 2015; Wang *et al.*, 2022b).

Recognizing that government ownership extends beyond firm objectives to encompass broader political and social agendas, a balanced approach that integrates the interests of other stakeholders can enhance fairness and foster greater support for firms (Bruton *et al.*, 2015; Inoue *et al.*, 2013). However, when the government uses block or pyramid ownership structures, the focus may often shift from addressing institutional voids to advancing political and social agendas (Chen and Young, 2010; Liljeblom *et al.*, 2020; Tihanyi *et al.*, 2019). This aligns with the principal-principal agency theory, which suggests that such ownership structures can exacerbate conflicts between controlling and minority shareholders (Young *et al.*, 2002, 2008), especially in environments with weak investor protections (Filatotchev *et al.*, 2001; La Porta *et al.*, 2000). According to the principal–principal agency theory, block and pyramid ownership structures often prioritize government interests over firm benefits (Lazzarini and Musacchio, 2018). This can increase risks for minority shareholders, including expropriation, tunneling (Bae *et al.*, 2002; Jiang *et al.*, 2010; Solarino and Boyd, 2020) and other agency issues (Boyd and Solarino, 2016; Morck *et al.*, 2005). As a result, the effectiveness of state ownership may be compromised in dominant ownership structures that prioritize control over fair and transparent management due to heightened power imbalances and weakened governance and oversight mechanisms (Chen *et al.*, 2011; Grosman *et al.*, 2016).

In block ownership, the government holds a significant share, exerting influence through control premiums (Dyck and Zingales, 2004). In pyramid structures [2], control extends through ownership chains, with voting rights surpassing ownership rights (Claessens *et al.*, 2002), allowing for lower cost-effective decision-making (Liljeblom *et al.*, 2020; Young *et al.*, 2008). These structures elevate incentives for the government to align firm objectives with its socio-political agenda, often at the expense of the firm and other shareholders, especially minority shareholders (Borisova *et al.*, 2012; Chen *et al.*, 2011; Hu and Sun, 2019). Consequently, sociopolitical motives may drive the organization, leading to conflicts and increased agency costs (Sauerwald and Peng, 2013).

In regions with emerging institutional frameworks, these principal–principal conflicts and investor expropriation are more pronounced due to underdeveloped legal protections (Inoue *et al.*, 2013; Young *et al.*, 2008). These challenges consequently diminish the benefits of state ownership in such contexts (Inoue *et al.*, 2013). The institutional theory suggests that organizational strategies and practices are deeply influenced by the national context (Peng *et al.*, 2008, 2009, 2018), including the institutional conditions surrounding government ownership (Musacchio and Lazzarini, 2014; Zhou *et al.*, 2017). The institutional environment shapes ownership control and owners' intentions (Aguilera and Crespi-Cladera, 2016). Ownership structures are thus embedded within national institutions, affecting corporate strategies and aligning them with country-specific goals (Thomsen and Pedersen, 2000; Wang *et al.*, 2012). For example, in firms with concentrated ownership, dominant shareholders may prioritize control over profitability, especially where property rights and investor protections are weak (Abdallah and Ismail, 2017; Buallay *et al.*, 2017). Specifically, in government-owned firms, strategies often align with national policies, prioritizing social or political goals at the expense of firm interests (Lazzarini and Musacchio, 2018; Zhou *et al.*, 2017). Thus, while state ownership can address institutional voids by enhancing legitimacy and addressing market deficiencies (Estrin *et al.*, 2009; Khanna *et al.*, 2015), political and social goals can take priority over firm interests (Boyd and Solarino, 2016; Inoue *et al.*, 2013; Tihanyi *et al.*, 2019). The efficacy of state ownership in filling institutional gaps therefore depends on the ownership structures adopted (Inoue *et al.*, 2013). This study argues that block and pyramid ownership structures limit the efficiency of government ownership as a response to institutional voids. Hence:

H1a. In MENA countries, the impact of institutional voids on government ownership is negatively moderated by block and pyramid ownership structures, whereby the efficiency of government ownership as a response to institutional voids diminishes when it adopts block and pyramid ownership structures.

In sociocultural settings with high power distance, decision-making and control are typically concentrated among elite groups or at the highest levels (De Jong and Semenov, 2006). This centralized authority is often reinforced by ownership structures like block or pyramid ownership, where few investors hold substantial control (Sacristán-Navarro *et al.*, 2022; Sauerwald and Peng, 2013). Such arrangements align with normative pressures from the institutional theory, which suggests that organizations adopt socially accepted practices to gain legitimacy (Durand *et al.*, 2019). By conforming to these norms, organizations strengthen their credibility and competitive standing (Bundy *et al.*, 2013; Durand *et al.*, 2019; Greenwood *et al.*, 2011; Scherer *et al.*, 2013). This conformity fosters isomorphic tendencies, underscoring the role of sociocultural legitimacy in shaping firm strategies essential for survival (DiMaggio and Powell, 1983). In high power distance cultures, normative pressures often reflect societal values that favor centralized authority (Daniels and Greguras, 2014). Thus, governance structures that enhance control align with cultural expectations, further emphasizing authority and centralized power (Li and Harrison, 2008). Consequently, government control of firms tends to be more pronounced under these ownership structures in high power distance countries (De Jong and Semenov, 2006). The cultural acceptance of unequal power distribution, coupled with control-enhancing ownership structures, creates conditions conducive to stronger government involvement in firms. Hence:

H2b. In MENA countries, the impact of power distance on government ownership is positively moderated by block and pyramid ownership structures, whereby government control is reinforced and strengthened through block and pyramid ownership structures.

4. Data and methodology

4.1 Data collection and sample

The Thomson Reuters Eikon database was used to obtain a list of all the publicly listed firms in the MENA region from 2010 to 2017. The sample was initially constituted of 1,244 firms. After dropping inactive firms and firms without any data relevant for this study (mainly ownership and corporate governance data), the sample was eventually composed of 1,215 publicly listed firms between 2010 and 2017 from Bahrain, Egypt, Jordan, Kuwait, Lebanon, Oman, Qatar, Morocco, Saudi Arabia, Tunisia and the United Arab Emirates [3]. Thomson Reuters Eikon database contained the most extensive ownership data [4] for this study and was hence used to collect ultimate ownership data for the list of 1,215 publicly listed firms that was generated. Based on Thomson Reuters Eikon's shareholders' classification as "government" owners [5], government ownership percentage was obtained, a dummy variable for whether the final largest owner is the government and another dummy variable for whether the government is a block owner at the 10% and 20% thresholds [6], respectively, were calculated. The chain length of pyramid ownership was then calculated by following the ownership chain of investors and a dummy variable for whether the government follows a pyramid ownership structure [7] was created.

4.2 Analysis

Both the Hausman and the Breusch–Pagan Lagrange Multiplier tests indicate an insignificant *p*-value, suggesting that the pooled ordinary least squares (OLS) is the preferred model. Pooled OLS regressions with industry fixed effects and heteroskedasticity-robust standard errors clustered at the firm-level were hence used (Onali *et al.*, 2017). Lead-lag regressions were applied to mitigate reverse causality issues and the models were run using robust standard errors to account for heteroskedasticity. The different variables of formal institutions and control variables were lagged by one year and the national sociocultural dimension of power distance was measured using data that was originally collected in the 1970s and updated during the 1980s and the 1990s (Hofstede, 2001). The longitudinal nature of the data from multiple sources, the addition of more fixed effects (as part of the robustness checks), and the use of time-lagged independent variables and control variables mitigate reverse causality biases (Chakrabarty, 2009; Fu *et al.*, 2023).

The longitudinal research design proposed and followed by Chakrabarty (2009) was adopted to account for temporal precedence, strengthen causal inference and ensure the reliability of the analysis. This approach is particularly crucial in a region like the MENA, which has experienced significant institutional and geopolitical shifts in recent decades. Specifically, the explanatory variables rely on data from earlier periods, capturing conditions that predate the observed outcomes. This strengthens causal claims by establishing that changes in explanatory variables occurred prior to any observed changes in outcome variables, hence mitigating concerns about reverse causality (Fu *et al.*, 2023). While both institutional void variables and Hofstede's sociocultural measure are time-lagged to ensure temporal precedence, they are measured from different periods due to their distinct characteristics (Chakrabarty, 2009). Institutional voids are measured using earlier – but not temporally distant – data to capture institutional factors that can evolve over time and affect ownership structures. This is particularly important in a region like MENA, where such changes are both frequent and impactful. The same logic extends to control variables, especially those at the country-level. In contrast, Hofstede's indices, which reflect stable and deep-rooted sociocultural values, are based on older data, as these attributes change slowly and remain consistent over time (Hofstede, 2001). This approach ensures the analysis captures both the dynamic institutional context and the enduring sociocultural foundations influencing government ownership. Aligning each variable with an appropriate time frame enhances the accuracy and causal validity of the findings (Chakrabarty, 2009).

The use of multiple data sources in research, as explained and shown in the work of Chakrabarty (2009) and Bradley and Klein's (2016), underscores the critical role of diverse databases in accurately capturing complex institutional dynamics. Chakrabarty (2009)'s reliance on a range of established databases reflects the importance of incorporating multiple measures to assess institutional voids and cultural factors. Similarly, Bradley and Klein (2016) highlight the value of integrating various country-level data sources to account for the complexity of institutional contexts. This approach not only enriches the analysis by encompassing a broad spectrum of variables – such as cultural, legal and economic conditions – but also mitigates potential biases that may arise from using a single data set. Ultimately, the combination of multiple data sets ensures greater reliability and validity in findings, offers a more nuanced and comprehensive understanding of the institutional landscape, captures institutional complexity and reduces single-source bias (Chakrabarty, 2009; Bradley and Klein, 2016).

The issue of endogeneity that could bias results was addressed by using the instrumental variables two-stage least squares (IV-2SLS) methodology. IV-2SLS is a method used in econometrics to address endogeneity in regression analysis, which occurs when an explanatory variable is correlated with the error term, resulting in biased and inconsistent estimates. IV-2SLS solves this by using instruments; variables that are correlated with the endogenous explanatory variables but uncorrelated with the error term. In the first stage, the endogenous variables are regressed on the instruments and any exogenous variables to obtain predicted values that are free from endogeneity. In the second stage, the original regression model is estimated using these predicted values as explanatory variables, ensuring that the estimates are consistent and unbiased. This method effectively isolates the variation in the explanatory variables that is exogenous, thereby addressing the endogeneity problem. Based on Kostova *et al.* (2008), regulatory, cognitive and normative dimensions constitute countries' institutional profiles and are valid instruments to be used. The rule of law from the World Bank's Worldwide Governance Indicators was hence used as a proxy for regulatory dimension, innovation from the Global Competitiveness Index of the World Economic Forum as a proxy for cognitive dimension, and individualism from the Hofstede Cultural Dimensions as a proxy for normative dimension. These instruments are relevant and exogenous, satisfying the correlation condition with the explanatory variable. They do not directly correlate with the error term in the regression model and are not affected by unobserved factors that affect government ownership. At $\alpha = 0.10$, the Durbin–Wu–Hausman test of endogeneity failed to reject the null hypothesis, suggesting that the explanatory variable is not endogenous (see Tables 4, 5 and 6).

4.3 Measurements

The following set of continuous variables comprises the explanatory variables: market conditions as the average mean of financial markets development, labor markets efficiency and good markets efficiency, as well as control of corruption, property rights, political constraints and power distance. The aggregate mean of the three measures of financial markets development, labor markets efficiency and good markets efficiency was calculated and used to address multicollinearity concerns due to the high correlation between these three variables. Institutional voids in financial, labor and product markets arise when there are inadequate mechanisms to support the efficient functioning and growth of these markets (Khanna and Palepu, 1997). Low control of corruption indicates a high level of corruption perception, signifying a lack of institutional control of corruption, i.e. lack to monitor, prevent and penalize corrupt activities (Kaufmann *et al.*, 2011). Institutional voids in property rights exist when systems for defining, enforcing and protecting ownership rights are weak or absent. Political constraints translate into reduced feasibility of policy change and undermined effectiveness of democratic processes (Henisz, 2002). Power distance measures the extent to which unequal distribution of power is accepted within a society

(Hofstede, 2001). It reflects the perceived division between upper and lower societal tiers regarding power dynamics. The outcome variable represents the ownership percentage held by the largest state investor. The moderators include three dichotomous variables:

1. a variable equal to 1 if the government is the largest owner and holds at least 10% of shares, and 0 otherwise;
2. a variable equal to 1 if the government is the largest owner and holds at least 20% of shares, and 0 otherwise; and
3. a variable equal to 1 if the government is the largest owner and uses a pyramid ownership structure (ownership chain length > 1), and 0 otherwise.

Details on the explanatory variables, outcome variables, moderators and control variables are presented in Table 1.

5. Results and discussion

Table 2 provides an overview of the summary statistics of our variables. The descriptive statistics show that around 19% of firms in the MENA region are state-owned. On average, government ownership is 7.4% of the total sample. Among firms having the state as their final largest investor, government ownership in the MENA is on average 38.27%. Around 15% of firms adopt block government ownership at the 20% threshold and 18% adopt block government ownership at the 10% threshold. Among firms having the state as their final largest investor, 76% adopt block ownership at the 20% threshold and 93% adopt block ownership at the 10% threshold. In total, 4.5% of firms adopt pyramid government ownership and among firms having the state as their final largest investor, 23% adopt pyramid ownership.

A correlation matrix including dependent, independent and control variables all together is presented in Table 3. The correlation table suggests that bivariate correlations are unlikely to be a concern. The results for the maximum variance inflation factor (VIF) are all less than 3.19 and the overall average VIF is 1.77, indicating that multicollinearity is unlikely to be an in issue in the analysis (Kennedy, 2003).

The results in Table 4 show that market conditions, control of corruption, property rights and political constraints are negative and significant, supporting *H1a*. These relationships indicate that government ownership is more prevalent amid weaker and restrictive institutional dimensions, or in other terms, government ownership in the MENA region is a response to institutional voids. This aligns with research by La Porta *et al.* (2002), which highlights governments' use of legal and political authority to support firms and meet socioeconomic objectives in contexts of institutional deficiencies. Additionally, these findings support prior work on the influence of financial market development, regulatory frameworks like property rights (La Porta *et al.*, 2002) and political freedom (La Porta *et al.*, 2008) on state ownership. Specifically, the findings suggest that government ownership functions as a response mechanism that addresses distorted investment conditions and mitigates uncertainties in weak institutional settings (La Porta *et al.*, 2002; Inoue *et al.*, 2013; Musacchio *et al.*, 2015). Consistent with broader insights on firm responses to institutional voids (Doh *et al.*, 2017; Wang *et al.*, 2022a), this study presents government ownership as a strategic approach to navigate underdeveloped and constrained environments, reinforcing the theoretical view that institutional conditions shape governance mechanisms (Chakrabarty and Bass, 2014; Child *et al.*, 2012; Filatotchev *et al.*, 2013, 2019).

Table 4 likewise shows that power distance is positive and significant, supporting *H1b*. This indicates that higher power distance in the region leads to higher government ownership, or in other terms, government ownership in the MENA is higher amid sociocultural norms characterized by high power distance. These findings align with studies showing the influence of societal norms on firm behavior and practices (Peng *et al.*, 2009) and build on

Table 1 Variable definitions and sources

Variable	*Measure*	*Source*
Outcome variables		
Government ownership %	Ownership percentage held by the final largest state investor	Thomson Reuters Eikon
Government ownership	Dichotomous variable with a value of 1 if government is the final largest owner, 0 otherwise	Thomson Reuters Eikon
Moderators		
Block government ownership (10% threshold)	Dichotomous variable with a value of 1 if government is the final largest owner and holds 10% and above of shares, 0 otherwise	Thomson Reuters Eikon
Block government ownership (20% threshold)	Dichotomous variable with a value of 1 if government is the final largest owner and holds 20% and above of shares, 0 otherwise	Thomson Reuters Eikon
Pyramid government ownership	Dichotomous variable with a value of 1 if government is the final largest owner and adopts a pyramid ownership structure (ownership chain > 1), 0 otherwise	Thomson Reuters Eikon
Explanatory variables		
Market conditions	The aggregate mean of financial markets, labor markets and product markets	Global Competitiveness Index from the World Economic Forum
Control of corruption	Perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption	World Bank's Worldwide Governance Indicators
Property rights	The extent to which a country's laws protect private property rights and the extent to which these laws are enforced	Heritage Foundation
Political constraints	Feasibility of policy change defined as the extent to which a change in the preferences of any political actor may lead to a change in government policy, i.e. political democracy	Henisz (2002)
Power distance	Acceptance of unequal distribution of power in a society	Hofstede Cultural Dimensions
Control variables		
Firm size	Natural log of firm total assets	Bureau van Dijk
Firm age	Natural log of firm age	Bureau van Dijk
ROA	(Net income / total assets) * 100	Bureau van Dijk
Tobin's Q	(Market capitalization / total assets) * 100	Bureau van Dijk
Board size	Total number of directors on the board	Bureau van Dijk
Board independence	Ratio of the firm board's independent members to board size multiplied by 100	Bureau van Dijk
Female board representation	Ratio of female directors to board size multiplied by 100	Bureau van Dijk
Board committees	Total number of board committees	Bureau van Dijk
Audit committee	Dichotomous variable with a value of 1 for whether the firm has an audit committee, 0 otherwise	Bureau van Dijk
Shareholders' rights	Dividends payout	Bureau van Dijk
Revenue growth	[(Revenue in current year−revenue in previous year)/revenue in previous year] * 100	Bureau van Dijk
Leverage ratio	Debt-to-equity ratio	Bureau van Dijk
GDP per capita	Natural log country GDP per capita	World Bank's World Development Indicators
GPD growth	Natural log of country GDP growth	World Bank's World Development Indicators
Industry	Dichotomous variable with a value of 1 for each industry type, 0 otherwise	Bureau van Dijk

Source(s): Author's own work

Estrin *et al.*'s (2016) work, which highlights power distance's impact on SOE outcomes. This study extends on these insights by focusing on how power distance affects the prevalence, rather than outcomes, of SOEs. It also supports Estrin and Prevezer's (2011) findings on the role of informal institutions in shaping corporate governance mechanisms in emerging markets, emphasizing how authority and hierarchy drive government ownership in the MENA region.

Government ownership thus serves as a compensatory mechanism in response to institutional voids that constrain firm and market operations, as well as a response to societal norms that accept hierarchical power structures. These findings support the

Table 2 Descriptive statistics					
Variables	*Observations*	*Mean*	*SD*	*Min.*	*Max.*
Government ownership %	8,681	7.411	18.226	0	99.89
Government ownership %	1,681	38.270	23.123	2	99.89
Government ownership	8,681	0.194	0.395	0	1
Block government ownership (10% threshold)	8,681	0.181	0.385	0	1
Block government ownership (10% threshold)	1,681	0.933	0.249	0	1
Block government ownership (20% threshold)	8,681	0.147	0.354	0	1
Block government ownership (20% threshold)	1,681	0.761	0.427	0	1
Pyramid government ownership	8,681	0.045	0.207	0	1
Pyramid government ownership	1,681	0.233	0.423	0	1
Market conditions	8,681	4.283	0.526	0	5.325
Control of corruption	8,681	0.098	0.487	−1.037	1.407
Property rights	8,681	49.706	11.046	20	76.7
Political constraints	8,681	0.314	0.325	0	0.773
Power distance	8,681	78.025	7.877	62	93
Firm size	8,681	12.307	2.187	5.175	19.222
Firm age	8,681	3.205	0.704	0.693	5.100
ROA	8,681	2.205	9.662	−97.697	83.991
Tobin's Q	8,681	0.762	0.830	0	15.334
Board size	8,681	7.531	3.2	1	35
Board independence	8,681	13.2	21.074	0	100
Female board representation	8,681	4.517	10.788	0	100
Board committees	8,681	1.596	1.803	0	8
Audit committee	8,681	0.504	0.5	0	1
Shareholders' rights	8,681	2.428	3.141	0	28.82
Revenue growth	8,681	1.07	19.644	−37.277	554.667
Leverage ratio	8,681	0.483	0.298	0	7.24
GDP per capita	8,681	9.389	1.105	7.800	11.351
GPD growth	8,681	1.084	0.681	−1.553	2.975

Note(s): $N = 8{,}161$ indicates total sample; $N = 1{,}681$ indicates observations of government ownership specifically, i.e. 1,681 firms out of 8,681 belong to the government; Min = 0 for government ownership % of the total sample (first row) indicates that the value 0 is for firms that are not government-owned; $N = 8{,}161$ was used the analysis. Measures for $N = 1{,}681$ were just shown in this table for descriptive purposes
Source(s): Author's own work

propositions of Khanna and Palepu (1997), Mair *et al.* (2012), Doh *et al.* (2017) and Bothello *et al.* (2019), and extend on the work of Wang *et al.* (2022a) by highlighting how institutional voids – beyond legal, political and capital factors – and sociocultural norms shape firm responses specifically elated to ownership.

Next, the effect of interaction between the four formal institutions with block government ownership at the 10% and 20% threshold, respectively, is tested. Given the consistency of the results of both thresholds, those at the 20% are presented while those at the 10% are kept un-tabulated. The results in Table 5 show that the interaction terms between block government ownership and, respectively, market conditions, control of corruption, property rights and political constraints are negative and significant. The interaction effect between these four formal institutions and pyramid government ownership is likewise tested. The results in Table 6 also show that the interaction terms between pyramid government ownership and, respectively, market conditions, control of corruption, property rights and political constraints are negative and significant. These findings support *H2a*, that the efficiency of government ownership as a response to institutional voids diminishes when block and pyramid ownership structures are adopted. These results align with the view that the effectiveness of government involvement depends on the ownership structure in place (Musacchio *et al.*, 2015; Wang *et al.*, 2022b), and specifically support Inoue *et al.* (2013) who argue that the state's positive impact diminishes under pyramidal structures. Consistent with principal–principal agency literature (Young *et al.*, 2002, 2008), these

Table 3 Correlation matrix

Variables	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*	*(10)*	*(11)*
(1) Government ownership %	1.000										
(2) Government ownership	0.830***	1.000									
(3) Block government ownership (20%)	0.887***	0.848***	1.000								
(4) Pyramid government ownership	0.220***	0.443***	0.306***	1.000							
(5) Market conditions	−0.018*	−0.034**	−0.014*	−0.051***	1.000						
(6) Control of corruption	−0.019*	−0.019*	−0.003*	−0.062***	0.355***	1.000					
(7) Property rights	−0.090***	−0.023*	−0.043***	−0.001*	0.117***	0.273***	1.000				
(8) Political constraints	−0.120***	−0.127***	−0.116***	−0.072***	−0.117***	−0.113***	−0.070***	1.000			
(9) Power distance	0.078***	0.120***	0.096***	0.134***	−0.026*	−0.092***	−0.001*	0.102***	1.000		
(10) Firm size	0.151***	0.178***	0.142***	0.045***	0.199***	0.138***	−0.063***	−0.191***	0.165***	1.000	
(11) Firm age	0.048***	0.013	0.009	−0.040***	−0.178***	−0.172***	−0.168***	0.128***	0.033**	0.138***	1.000
(12) ROA	0.123***	0.107***	0.116***	−0.032**	0.027*	−0.027*	−0.068***	−0.077***	0.054***	0.144***	0.133***
(13) Tobin's Q	0.053***	0.021	0.036**	−0.072***	0.050***	−0.040***	−0.077***	−0.117***	−0.108***	−0.211***	−0.008
(14) GDP per capita	−0.003	0.072***	0.041***	0.064***	0.413***	0.329***	0.315***	−0.303***	0.469***	0.258***	−0.135***
(15) GPD growth	0.043***	0.042***	0.037***	−0.045***	0.329***	0.174***	−0.038***	−0.309***	−0.011	0.090***	−0.056***
(16) Board size	0.007	0.074***	0.029**	0.040***	0.007	0.050***	−0.002	−0.174***	−0.069***	0.395***	0.109***
(17) Board independence	−0.003	0.007	−0.002	−0.016	0.268***	0.177***	0.002	−0.443***	−0.030**	0.017	−0.067***
(18) Female board representation	0.025**	−0.002	0.007	0.003	−0.191***	−0.171***	−0.143***	0.125***	−0.038***	−0.022**	0.102***
(19) Board committees	0.035***	0.095***	0.042***	0.021*	0.257***	0.231***	0.083***	−0.374***	−0.069***	0.367***	0.047***
(20) Audit committee	0.049***	0.073***	0.054***	−0.025**	0.071***	0.145***	0.010	−0.375***	−0.045***	0.168***	0.041***
(21) Shareholders' rights	0.056***	0.091***	0.062***	0.023**	0.217***	0.099***	0.006	−0.115***	0.105***	0.600***	0.049***
(22) Revenue growth	−0.012	−0.009	−0.007	0.011	−0.018	−0.011	0.013	0.003	−0.006	−0.011	−0.016
(23) Leverage ratio	0.019*	0.030**	0.016	0.040***	0.010	−0.004	−0.086***	−0.058***	−0.045***	0.347***	0.133***

Note(s): *$p < 0.1$, **$p < 0.05$ and ***$p < 0.01$
Source(s): Author's own work

(*continued*)

Table 3

Variables	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
(1) Government ownership %												
(2) Government ownership												
(3) Block government ownership (20%)												
(4) Pyramid government ownership												
(5) Market conditions												
(6) Control of corruption												
(7) Property rights												
(8) Political constraints												
(9) Power distance												
(10) Firm size												
(11) Firm age												
(12) ROA	1.000											
(13) Tobin's Q	0.294***	1.000										
(14) GDP per capita	0.030**	−0.020	1.000									
(15) GPD growth	0.054***	0.084***	0.125***	1.000								
(16) Board size	0.064***	−0.063***	0.011	0.062***	1.000							
(17) Board independence	0.036***	0.096***	0.246***	0.125***	0.047***	1.000						
(18) Female board representation	0.025**	−0.038***	−0.197***	−0.025**	0.077***	−0.069***	1.000					
(19) Board committees	0.055***	−0.027**	0.239***	0.132***	0.380***	0.302***	−0.028	1.000				
(20) Audit committee	0.096***	0.004	0.082***	0.118***	0.241***	0.326***	−0.056***	0.719***	1.000			
(21) Shareholders' rights	0.313***	−0.049***	0.239***	0.047***	0.230***	−0.001	−0.023**	0.215***	0.106***	1.000		
(22) Revenue growth	−0.018	−0.014	−0.019*	−0.004	−0.015	−0.013	−0.005	−0.002	−0.003	−0.001	1.000	
(23) Leverage ratio	−0.270***	−0.268***	−0.022**	0.038***	0.181***	−0.004	0.030**	0.152***	0.071***	0.260***	−0.013	1.000

Table 4 Impact of institutional voids and sociocultural norms on government ownership

	Lead-lag regression (1) *Government ownership* $\%_{(t+1)}$	*IV-2SLS* (2) *Government ownership* $\%_{(t+1)}$	*Fixed effect (year)* (3) *Government ownership* $\%_{(t+1)}$	*Fixed effect (country)* (4) *Government ownership* $\%_{(t+1)}$
Market conditions	−5.654*** (1.020)	−10.067*** (1.680)	−6.819*** (1.168)	−5.585*** (1.022)
Control of corruption	−6.670*** (0.900)	−6.300*** (0.888)	−6.563*** (0.976)	−6.255*** (0.897)
Property rights	−0.129*** (0.0336)	−0.083** (0.0344)	−0.119*** (0.0367)	−0.129*** (0.0336)
Political constraints	−6.826*** (0.907)	−7.461*** (0.910)	−8.211*** (1.053)	−7.449*** (0.998)
Power distance	6.826*** (0.0506)	7.461*** (0.0606)	8.211*** (0.0522)	7.449*** (0.0503)
Firm size	−0.248 (0.633)	−0.237 (0.635)	−0.056 (0.624)	−0.239 (0.631)
Firm age	1.161*** (0.331)	1.111*** (0.330)	1.100*** (0.335)	1.170*** (0.331)
ROA	0.189*** (0.0233)	0.190*** (0.0234)	0.183*** (0.0236)	0.190*** (0.0234)
Tobin's Q	1.739*** (0.320)	1.811*** (0.322)	1.678*** (0.320)	1.723*** (0.320)
Board size	−0.716*** (0.0749)	−0.710*** (0.0748)	−0.729*** (0.0752)	−0.718*** (0.0750)
Board independence	−0.015 (0.0125)	−0.014 (0.0125)	−0.018 (0.0128)	−0.009 (0.0136)
Female board representation	0.054** (0.0263)	0.053** (0.0262)	0.052** (0.0262)	0.053** (0.0263)
Board committees	0.814*** (0.198)	0.771*** (0.198)	0.839*** (0.198)	0.804*** (0.198)
Audit committee	−3.431*** (0.675)	−3.433*** (0.673)	−3.676*** (0.680)	−3.339*** (0.676)
Shareholders' rights	1.795*** (0.679)	1.749** (0.682)	1.636** (0.668)	1.762*** (0.677)
Revenue growth	−0.006 (0.00430)	−0.006 (0.00432)	−0.006 (0.00419)	−0.006 (0.00437)
Leverage ratio	1.853 (1.714)	1.902 (1.718)	1.032 (1.707)	1.821 (1.710)
GDP per capita	−2.866*** (0.692)	−0.269 (1.008)	−2.456*** (0.739)	−1.749* (0.997)
GPD growth	0.168 (0.292)	0.102 (0.293)	0.321 (0.349)	0.107 (0.297)
Industry	Yes	Yes	Yes	Yes
Year			Yes	
Country				Yes
Constant	2.661 (3.447)	13.407*** (3.924)	5.554 (3.968)	−5.924 (6.941)
Hausman test (*p*-value)		5.940 (0.110)		
R^2	0.156	0.154	0.159	0.156
Observations	8,681	8,681	8,681	8,681

Note(s): Standard errors in parentheses $^{*}p < 0.1$; $^{**}p < 0.05$ and $^{***}p < 0.01$
Source(s): Author's own work

Table 5 Moderating effect of block government ownership at the 20% threshold on the impact of institutional voids and sociocultural norms on government ownership

	Lead-lag regression (1) *Government ownership* $\%_{(t+1)}$	*IV-2SLS* (2) *Government ownership* $\%_{(t+1)}$	*Fixed effect (year)* (3) *Government ownership* $\%_{(t+1)}$	*Fixed effect (country)* (4) *Government ownership* $\%_{(t+1)}$
Block government ownership	−96.667*** (4.492)	−94.353*** (4.550)	−96.309*** (4.489)	−96.666*** (4.488)
Market conditions	−0.871*** (0.240)	−1.376*** (0.784)	−0.880*** (0.239)	−0.989*** (0.239)
Market conditions × Block government ownership	−8.053*** (1.060)	−7.451*** (1.073)	−7.993*** (1.056)	−8.023*** (1.057)
Control of corruption	−2.850*** (0.378)	−2.844*** (0.376)	−3.372*** (0.423)	−2.264*** (0.383)
Control of corruption × Block government ownership	−1.026*** (0.313)	−0.924*** (0.310)	−0.951*** (0.313)	−1.074*** (0.315)
Property rights	−0.061*** (0.0115)	−0.023* (0.0128)	−0.079*** (0.0132)	−0.060*** (0.0115)
Property rights × Block government ownership	−0.174*** (0.0554)	−0.191*** (0.0552)	−0.173*** (0.0551)	−0.179*** (0.0554)
Political constraints	−1.018*** (0.331)	−0.355 (0.333)	−1.312*** (0.402)	−0.242 (0.356)
Political constraints × Block government ownership	−11.865*** (1.785)	−11.576*** (1.780)	−11.883*** (1.780)	−11.807*** (1.781)
Power distance	0.165*** (0.0208)	0.085*** (0.0296)	0.174*** (0.0212)	0.158*** (0.0206)
Power distance × Block government ownership	0.024*** (0.00147)	0.024*** (0.00148)	0.024*** (0.00147)	0.023*** (0.00149)
Firm size	−0.290 (0.246)	−0.304 (0.244)	−0.314 (0.250)	−0.275 (0.244)
Firm age	0.758*** (0.148)	0.733*** (0.148)	0.798*** (0.150)	0.769*** (0.148)
ROA	0.010 (0.00990)	0.012 (0.00996)	0.009 (0.00996)	0.011 (0.00991)
Tobin's Q	0.675*** (0.140)	0.723*** (0.142)	0.674*** (0.141)	0.658*** (0.139)
Board size	−0.279*** (0.0328)	−0.278*** (0.0327)	−0.279*** (0.0329)	−0.281*** (0.0328)
Board independence	0.017*** (0.00627)	0.017*** (0.00626)	0.019*** (0.00645)	0.024*** (0.00681)
Female board representation	0.037*** (0.00934)	0.036*** (0.00931)	0.036*** (0.00932)	0.036*** (0.00933)
Board committees	0.189** (0.0942)	0.198** (0.0940)	0.213** (0.0942)	0.178* (0.0941)
Audit committee	−1.071*** (0.290)	−1.093*** (0.290)	−1.123*** (0.292)	−0.963*** (0.293)
Shareholders' rights	0.931*** (0.264)	0.922*** (0.262)	0.953*** (0.268)	0.887*** (0.261)
Revenue growth	−0.002 (0.00305)	−0.002 (0.00300)	−0.002 (0.00299)	−0.002 (0.00296)
Leverage ratio	0.097 (0.710)	0.129 (0.709)	0.138 (0.720)	0.055 (0.705)
GDP per capita	−1.906*** (0.179)	−0.326 (0.480)	−2.003*** (0.187)	−0.485 (0.388)
GPD growth	−0.125 (0.136)	−0.039 (0.134)	−0.240 (0.161)	−0.218 (0.138)
Industry	Yes	Yes	Yes	Yes
Year			Yes	
Country				Yes
Constant	−3.185** (1.307)	1.018 (1.681)	−1.913 (1.432)	−14.181*** (3.198)
Hausman test (*p*-value)		6.134 (0.111)		
R^2	0.823	0.823	0.824	0.824
Observations	8,681	8,681	8,681	8,681

Note(s): Standard errors in parentheses $^{*}p < 0.1$; $^{**}p < 0.05$ and $^{***}p < 0.01$
Source(s): Author's own work

Table 6 Moderating effect of pyramid government ownership on the impact of institutional voids and socio-cultural norms on government ownership

	Lead-lag regression (1) Government ownership $\%_{(t+1)}$	*IV-2SLS* (2) Government ownership $\%_{(t+1)}$	*Fixed effect (year)* (3) Government ownership $\%_{(t+1)}$	*Fixed effect (country)* (4) Government ownership $\%_{(t+1)}$
Pyramid government ownership	−49.274*** (0.614)	−48.734*** (0.997)	−49.249*** (0.615)	−49.507*** (0.637)
Market conditions	−3.409*** (1.045)	−3.036*** (1.998)	−3.708*** (1.062)	−2.492*** (1.558)
Market conditions × Pyramid government ownership	−2.974* (1.629)	−3.461* (1.817)	−3.009* (1.653)	−3.929*** (2.689)
Control of corruption	−5.674*** (1.003)	−5.216*** (1.016)	−5.674*** (1.047)	−6.653*** (1.356)
Control of corruption × Pyramid government ownership	−4.256*** (1.310)	−3.890*** (1.301)	−4.310*** (1.311)	−5.556** (1.919)
Property rights	−0.180*** (0.0369)	−0.167* (0.0396)	−0.192*** (0.0392)	−0.233*** (0.0767)
Property rights × Pyramid government ownership	−0.215** (0.101)	−0.212** (0.108)	−0.214** (0.101)	−0.586*** (0.141)
Political constraints	−5.295** (2.395)	−4.268 (2.095)	−4.914** (2.422)	−3.444*** (2.977)
Political constraints × Pyramid government ownership	−8.271*** (2.601)	−7.003*** (2.506)	−8.246*** (2.608)	−9.418*** (2.935)
Power distance	0.470*** (0.0593)	0.379** (0.0751)	0.483*** (0.0600)	0.384** (0.0632)
Power distance × Pyramid government ownership	0.320*** (0.0939)	0.216*** (0.00789)	0.321*** (0.0950)	0.423** (0.170)
Firm size	1.843** (0.737)	1.818** (0.746)	1.979*** (0.741)	1.820 (1.337)
Firm age	2.030*** (0.385)	1.955*** (0.383)	1.958*** (0.390)	1.643** (0.761)
ROA	0.111*** (0.0306)	0.116*** (0.0306)	0.109*** (0.0308)	0.173** (0.0698)
Tobin's Q	0.507 (0.331)	0.520* (0.335)	0.483 (0.332)	0.548* (0.389)
Board size	−0.716*** (0.109)	−0.708*** (0.108)	−0.721*** (0.109)	−1.165*** (0.203)
Board independence	0.023* (0.0135)	0.020 (0.0133)	0.022 (0.0137)	0.009 (0.0342)
Female board representation	0.098*** (0.0277)	0.095*** (0.0276)	0.097*** (0.0278)	0.131*** (0.0340)
Board committee	−0.810*** (0.218)	−0.843*** (0.218)	−0.802*** (0.219)	−0.829** (0.402)
Audit committee	1.452* (0.770)	1.296* (0.767)	1.378* (0.773)	0.784 (1.591)
Shareholders' rights	−0.458 (0.791)	−0.517 (0.800)	−0.566 (0.794)	−1.233 (1.344)
Revenue growth	0.009 (0.00793)	0.009 (0.00828)	0.009 (0.00790)	0.024*** (0.00785)
Leverage ratio	0.495 (2.017)	0.587 (2.034)	0.016 (2.036)	0.614* (3.027)
GDP per capita	−6.045*** (0.552)	−4.851 (1.241)	−6.215*** (0.571)	−5.261 (1.654)
GPD growth	−1.627*** (0.388)	−1.398*** (0.363)	−1.541*** (0.436)	−1.953 (0.743)
Industry	Yes	Yes	Yes	Yes
Year			Yes	
Country				Yes
Constant	8.857** (4.236)	9.259*** (5.283)	8.232* (4.422)	9.482*** (6.850)
Hausman test (*p*-value)		3.402 (0.144)		
R^2	0.218	0.219	0.217	0.320
Observations	8,681	8,681	8,681	8,681

Note(s): Standard errors in parentheses $^{*}p < 0.1$; $^{**}p < 0.05$ and $^{***}p < 0.01$
Source(s): Author's own work

findings also extend on research suggesting that government ownership may not always align with firm interests, particularly under concentrated control ownership structures (Liljeblom *et al.*, 2020). Furthermore, these findings align with studies indicating that institutional deficiencies and inadequate investor protection facilitate value expropriation by controlling shareholders (Chen *et al.*, 2011). The results confirm the argument that, in countries with weaker institutions, government ownership often favors political and social objectives over purely economic ones (Okhmatovskiy, 2010; Inoue *et al.*, 2013; Tihanyi *et al.*, 2019). Building on Wang *et al.*'s (2012) work, this research finds that the effectiveness of state intervention is shaped by ownership structure. By integrating agency perspective with institutional analysis, this study aligns with existing literature, suggesting that the efficacy of government ownership depends on contextual and governance factors (Bruton *et al.*, 2015; Peng *et al.*, 2016; Wang *et al.*, 2022b).

The interaction terms between power distance and, respectively, block government ownership (Table 5) and pyramid government ownership (Table 6) are positive and significant, supporting *H2b*. The results hence imply that high power distance may drive governments to assume high control and involvement in firms. In particular, with the presence of ownership structures such as block or pyramid ownership amid high power distance societies, the likelihood of government involvement and control is even more pronounced. These findings build on the argument that state intervention is more pronounced in pyramid ownership structures, especially in environments with weak market and regulatory institutions, by highlighting the moderating role of informal institutions on firm structure, as noted by Neves *et al.* (2022) and Sauerwald and Peng (2013). The results suggest that the combination of high power distance and control-enhancing ownership structures promotes greater government control in firms. This indicates that societal norms favoring power hierarchy and strong government involvement exert a stronger influence over firms. Overall, these findings support the institutional theory, which posits that firms are shaped by both formal and informal conditions in their institutional context (Bothello *et al.*, 2019; Greenwood *et al.*, 2011; Kostova *et al.*, 2008), and that governance structures, like control-enhancing ownership, institutionalize sociocultural dimensions (Khanna and Palepu, 2000).

5.1 Robustness checks

To test for the robustness of the analysis and to account for omitted variable bias, country-fixed effects and year-fixed effects were, respectively, added (see Tables 4, 5 and 6). The propensity score matching (PSM) (Imbens and Wooldridge, 2009) was used as an additional robustness check. PSM reduces bias by balancing the distribution of observed covariates between treated and untreated units; it helps to make treatment and control groups more comparable by matching units that have similar propensities for receiving the treatment. A dummy variable was hence used as a measure of the explanatory variable. The results of the PSM are presented in Table 7. Rows 1 till 4 indicate an inverse relationship between the formal institutions (except property rights) and government ownership, while Row 5 indicates a positive relationship between power distance and government ownership. Rows 6 till 9 indicate that high levels of block government ownership negatively moderate the impact of institutional voids on government ownership, while Row 10 indicates that high levels of power distance positively moderate it. Rows 11 till 14 indicate that high levels of pyramid government ownership negatively moderate the impact of institutional voids on government ownership, while row 15 indicates that high levels of power distance positively moderate it. The results are hence significant and consistent with the main findings. Finally, the analysis was rerun with the different variables of formal institutions and control variables lagged by two years. The results of the models in Tables 4, 5 and 6 remain stable and consistent with the results of the main analysis, confirming the reliability and validity of the analysis and findings. They have therefore been kept un-tabulated.

Table 7 Propensity score matching

Outcome variables	*Explanatory variables*	*Moderators*	*Conditions*	*Treated*	*Controls*	*Difference*	*S.E.*	*t-test*	$p < 0.05$	*Matching pair no.*
(1) Government	Market conditions			5.057	5.166	−0.109	0.024	−4.530	Yes	1,556
(2) Government	Control of corruption			0.130	0.145	−0.016	0.020	−2.590	Yes	1,556
(3) Government	Property rights			48.993	49.571	−0.578	0.435	−1.680	No	1,556
(4) Government	Political constraints			0.231	0.293	−0.062	0.011	−5.500	Yes	1,556
(5) Government	Power distance			79.433	76.958	2.475	0. 271	9.120	Yes	1,556
(6) Government	Market conditions	Block ownership	High	5.023	5.123	−0.010	0.028	- 3.570	Yes	1,197
(7) Government	Control of corruption	Block ownership	High	0.114	0.138	−0.024	0.023	−2.280	Yes	1,197
(8) Government	Property rights	Block ownership	High	48.470	49.426	−0.957	0.507	−2.980	Yes	1,197
(9) Government	Political constraints	Block ownership	High	0.225	0.289	−0.064	0.013	−5.060	Yes	1,197
(10) Government	Power distance	Block ownership	High	79.448	77.167	2.281	0.305	7.480	Yes	1,197
(11) Government	Market conditions	Pyramid ownership	High	5.120	5.152	−0. 032	0.043	−2.910	Yes	338
(12) Government	Control of corruption	Pyramid ownership	High	0.025	0.052	−0.077	0.031	−2.450	Yes	338
(13) Government	Property rights	Pyramid ownership	High	49.093	50.212	−1.119	0. 755	−2.480	Yes	338
(14) Government	Political constraints	Pyramid ownership	High	0.409	0.428	−0.019	0.026	−2.780	Yes	338
(15) Government	Power distance	Pyramid ownership	High	81.383	80.439	0.944	0.647	6.610	Yes	338

Source(s): Author’s own work

5.2 Research implications

Academics and practitioners increasingly recognize that the nature of governance issues and firm-level governance mechanisms in various countries are deeply rooted in each country's unique national business system, shaped by its financial, legal, political and social institutions (Aguilera *et al.*, 2008; Filatotchev *et al.*, 2013, 2019; Peng *et al.*, 2008). Aligned with the institutional theory, this study finds that government ownership in the MENA region serve as a strategic response to both institutional voids and normative pressures, underscoring that government ownership is not solely a reaction to market deficiencies (Khanna *et al.*, 2015), but also a mechanism to align with sociocultural expectations for legitimacy (Bundy *et al.*, 2013). The study thus underscores that corporate governance mechanisms – particularly ownership – are constructed through legitimate acceptance, reflecting their institutional embeddedness within corporate objectives and control mechanisms, and necessitating a broader perspective that extends beyond formal institutional dimensions to encompass sociocultural norms (Aguilera *et al.*, 2016).

The findings likewise suggest that control-enhancing mechanisms, like block and pyramid ownership structures – common in the MENA region (Martinez-Garcia *et al.*, 2022) – are instrumental in amplifying government control and aligning with the region's high power distance norms. This research demonstrates that institutional conditions shape government ownership and that the role of the government depends on firms' specific context and governance structures (Musacchio *et al.*, 2015). In settings characterized by weak institutions, SOEs often prioritize broader political agendas over firm benefits, aligning with the principal–principal agency perspective on potential conflicts of interest (Inoue *et al.*, 2013; Tihanyi *et al.*, 2019). By highlighting these dynamics, the study calls for a nuanced integration of agency perspective with institutional analysis to account for the differing agency issues in different ownership structures that arise in various institutional contexts (Bruton *et al.*, 2010; Peng *et al.*, 2016; Inoue *et al.*, 2013; Wang *et al.*, 2022b).

Furthermore, this study provides empirical insights from a distinctive sample of publicly listed firms across 11 MENA countries, demonstrating that government ownership is not only a strategic response to institutional voids but also to sociocultural norms. These findings suggest that government ownership structures in the MENA region are significantly shaped by the broader institutional environment, thereby contributing to the understanding of corporate governance mechanisms in emerging markets and advancing the ongoing discourse on governance strategies and state influence in these contexts (Meyer and Peng, 2016; Wright *et al.*, 2005).

5.3 Managerial and policy implications

The dynamics of the institutional environment in the MENA region, along with the prevalence of SOEs, underscore the need for a more comprehensive understanding of policy discussions, decisions and outcomes. This research provides critical insights for policymakers, practitioners and managers, particularly as corporate governance reforms unfold across the region. It emphasizes the growing responsibility of MENA policymakers to enhance the competitive potential of SOEs beyond political objectives. Accordingly, this research offers the following recommendations:

First, effective governance of SOEs in the MENA region requires a tailored institutional approach rather than the replication of global corporate governance standards (Farah *et al.*, 2021). Given the region's sociocultural, political, economic and historical contexts, policies must be designed to reflect these local dynamics and address institutional voids. Governance frameworks should therefore be adapted to the specific institutional conditions of countries in the region, rather than merely adopting international best practices. By doing so, MENA countries can improve the efficiency and competitiveness of SOEs while ensuring alignment with broader development goals.

Second, control-enhancing mechanisms like block and pyramid ownership structures concentrate power, reducing transparency and accountability while increasing inefficiencies (Musacchio *et al.*, 2015; Wang *et al.*, 2022b). Governance reforms should therefore focus on addressing the challenges associated with these structures to improve both accountability and operational efficiency in SOEs. Implementing a standardized corporate governance code and adopting best practices – such as transparency in objectives, performance metrics and regulatory oversight – can significantly enhance the overall quality of governance and operational practices. Furthermore, listing SOE shares on national exchanges and making performance data publicly accessible can reduce political interference, stimulate local capital markets and support the transition of SOEs toward more competitive market roles (Naceur *et al.*, 2008).

Third, to unlock the region's economic potential and reduce the prevalence and reliance on government ownership as a stabilizing force, policy and institutional reforms should focus on creating conditions that attract both local and foreign investors. This can be achieved by lowering institutional barriers, updating foreign investment laws, offering targeted incentives (e.g. tax breaks) and enhancing regulatory frameworks to foster investor confidence. Strengthening the private sector is crucial for diversifying the economy, reducing dependence on government ownership and enhancing market competitiveness (OECD, 2019). Additionally, reforms should include efforts to build institutional capacity, improve anti-corruption measures and strengthen property rights, thereby ensuring market resilience and competitiveness. Such efforts will support SMEs, encourage private sector participation and contribute to broader national economic development (Bjørnskov and Foss, 2016).

6. Limitations and future studies

This study has several limitations that provide opportunities for future research. One limitation is that the government ownership variable is measured as the stake owned by the final largest owner, being the government. However, this measure does not capture the different types of state institutions, such as public pension funds, SWFs, state-owned holding companies or life insurance companies, which may play distinct roles in governance. Future research could address this limitation by differentiating between various types of government institutions, as each has different objectives, strategies and impacts on governance. Additionally, while this study primarily focuses on ownership structure, it does not fully explore broader corporate governance mechanisms, including board structure, shareholder rights, corporate social responsibility, auditing, internal controls and executive compensation. More specifically, this study emphasizes government ownership, whereas other key owners in the region, such as family owners, also play a significant role in governance and warrant further investigation. This highlights the importance of further research into the region's institutional conditions and their impact on various corporate governance mechanisms beyond government ownership. Finally, this study focuses on formal and informal institutional conditions, while other factors, such as policies and national strategies reflecting policy changes and institutional reforms, could also influence governance mechanisms. Future research could examine national policies and visions in MENA countries, identify barriers to effective governance and propose opportunities and recommendations for institutional and governance reforms.

7. Conclusion

This study explores the impact of both formal and informal institutions in MENA countries, highlighting how institutional voids and sociocultural norms influence the prevalence of government ownership. It posits that government ownership emerges as a response to these institutional voids and societal acceptance of power. This study also examines the moderating effect of block and pyramid government ownership structures and argues that while government ownership can be a response to institutional deficiencies, its efficiency is diminished and control within firms is heightened when control-enhancing mechanisms like block and pyramid ownership structures are used.

Notes

1. Crossholding is another control-enhancing ownership mechanism in which companies hold shares in each other, fostering collaboration but potentially complicating relationships. Martinez-Garcia *et al.* (2022) examined various ownership structures and found that crossholdings are virtually absent in the Gulf Cooperation Council, with less than 1% of firms adopting this structure. In contrast, pyramiding emerged as the most prevalent structure, followed by block ownership. Given the near absence of crossholdings among SOEs in the study's sample, the analysis instead concentrated on these two dominant control-enhancing ownership structures.
2. A pyramid arises when an ultimate owner arranges affiliated firms through chains of ownership, where the ultimate owner "directly controls a firm, which in turn controls another firm, which might itself control another firm and so forth" (Almeida and Wolfenzon, 2006, p. 2638).
3. While the MENA region includes more countries, ownership data of publicly listed firms in the region were only available for the eleven MENA countries on Thomson Reuters Eikon when this study began.
4. Thomson Reuters Eikon provided a list of all publicly listed firms (total of 1,244 firms) in 11 MENA countries. For each firm and for each year, the database provided data on owners' type, ownership percentage and ultimate ownership chain (see footnote 7).
5. Ownership belonging to sovereign wealth funds (SWFs) was classified separately and did not count as part of the government ownership measures.
6. Both thresholds are based on Claessens *et al.* (2000) and Faccio and Lang (2002).
7. The number of pyramidal chains for each firm was counted by back tracking their owners until the ultimate owner – the state – is identified (based on Wang *et al.*, 2022b). Pyramid ownership is the product of the percentage of ownership held by the largest investors along the pyramidal chain (based on Claessens *et al.* (2000) and Faccio and Lang (2002).

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