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# Board characteristics, ownership structure, and financial sustainability: evidence from Palestine and Jordan

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## Abstract

This study explores the relationship between board characteristics, ownership structure, and financial sustainability. The research methodology employs panel data analysis using secondary data. Data collected from annual reports to 113 companies listed on Palestine and Amman Exchanges distributed over three sectors: services, industry and investment. Descriptive and inferential statistics were used; correlation matrix was used to evaluate linear relationships between variables. To test multicollinearity, the VIF was used, and the regression was conducted using the Pooled Ordinary Least Squares (OLS) regression method. There is a significant positive relationship between (gender diversity, board independence, academic background, and foreign ownership) and financial sustainability on the long run, but no significant relationship between (CEO duality, board independence, ownership structure and foreign ownership) and financial sustainability the short run.

This study highlights the impact of effective governance and balanced ownership structure on companies' financial sustainability. The study suggests that companies must adhere to governance principles to ensure their financial sustainability. The findings suggest practical pathways for enhancing the ultimate provision of decision-makers with valuable information. It creates governance structures that support sustainable practices. This study closes a gap in the literature and provides insightful recommendations for corporate managers, auditors, and regulators in Jordan and Palestine and other emerging economies.

**Keywords** Board characteristics, Ownership structure, Financial sustainability

## Introduction

Ensuring sustainability and making decisions to achieve it are primarily corresponding with effective corporate governance. Strong corporate governance guarantees sustainability, which drives corporate growth [69].

However, the importance of financial sustainability is due to its impact on the long-term growth and continuity

of companies. Financial sustainability information enables investors and shareholders to better understand how the company manages financial risks associated with environmental, social, and governance dimensions. Additionally, financial sustainability practices can enhance trust among stakeholders and improve relationships with employees, customers, and the local community, thereby attracting more investments and promoting sustainable long-term growth for the company [87].

The importance of financial sustainability is particularly evident in challenging circumstances such as pandemics, as exemplified by the COVID-19 outbreak, which disrupted the operational activities of corporate entities and impacted major economies worldwide [37]. Such incidents erode investor confidence, making them

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hesitant to further invest in institutional entities. Corporate entities are designed to operate indefinitely and expand their operations to gain more market share. In the absence of additional investment through appropriate stock and bond issuance, sustainable growth must be maintained [4]. It is worth noting that sustainable corporate growth represents the highest and most optimal level that businesses can achieve, enabling them to increase their income without depleting their financial resources [75].

The board of directors has an important role in building corporate governance frameworks and agency theory primarily through its supervisory and oversight functions. It is responsible for defining the strategic direction of the company, overseeing management's activities and ensuring alignment with stakeholder interests. In corporate governance the board establishes policies, procedures, and controls to guide operations and decision-making, while also monitoring compliance with regulations and evaluating performance for accountability. Within agency theory, the board acts as a representative of shareholders, working to mitigate conflicts between shareholders and management by aligning their interests. Through mechanisms such as executive compensation and risk management oversight, the board ensures that management acts in the best interests of shareholders to maximize value. In essence, the board of directors plays an important role and contribution in corporate governance, through providing important oversight and guidance for long-term sustainability and success [74, 77, 95].

The distribution of ownership structure among shareholders, including institutional investors, foreign investors, and concentrated ownership, can impact the alignment of interests between stakeholders and the company's financial sustainability goals. For example, the institutional investors may advocate for sustainable business practices and long-term value creation, while concentrated ownership by insiders may prioritize short-term gains over sustainability [18, 31, 51, 88].

Empirical evidence shows that companies with effective governance often exhibit higher levels of transparency and accountability and pursue long-term strategies that contribute to financial stability and resilience to economic crises. Conversely, the absence of appropriate governance mechanisms leads to weak oversight and increased management risks, threatening an organization's ability to achieve sustainability, some recent literature emphasizes that effective risk management and specialized and independent boards of directors are essential factors in supporting sustainable growth and enhancing investor confidence [2, 67], [15, 76]).

Despite growing interest in corporate governance, the actual impact of board composition and ownership

structure on financial sustainability remains unclear in the context of emerging economies such as Palestine and Jordan, where the private sector faces unique regulatory, institutional, and economic challenges. Differences in ownership patterns (institutional, foreign, or concentrated) add further complexity to aligning stakeholder interests with sustainability goals. Hence, there is an urgent need for field studies that can help uncover the nature of the relationship between these variables and the extent of their impact on corporate sustainability.

The choice of the Palestinian and Jordanian markets together for the study is justified by strong scientific and methodological grounds, as they constitute two similar economic and regulatory environments that contribute to the consistency and generalizability of the results. Both markets are characterized by a similar sectoral structure and company size (mostly small and medium-sized enterprises of a local nature), which reduces the differences in size and structure that may distort the analysis. As for governance, there are important intersections in legislative frameworks, disclosure requirements, and the composition of boards of directors (limits of powers, requirements for disclosing transactions and ownership), which makes governance variables comparable and jointly analyzable so that the effect of board characteristics or ownership structure on the research variables can be more reliably isolated. In addition, both countries are classified as regional emerging markets, so they share similar institutional challenges such as limited liquidity, the level of development of capital markets, and the impact of companies on the local political and economic environment, which increases the value of the study in terms of understanding the behavior of institutions in a typical market context for the region. This overlap in characteristics also enhances the dimensions of the statistical methodology. Combining the two markets increases the sample size and improves the power of the tests, reduces the effect of random variance between firms, and enables the researcher to use longer time periods and better control models, which raises the validity of the conclusions and extends the generalizability to regionally similar markets. It also makes the results more useful for policymakers and practitioners dealing with disclosure and governance challenges in converging emerging markets.

Accordingly, the study objectives aim to serve this research gap by comparing the impact of governance characteristics and ownership structure on financial sustainability among companies operating in Palestine and Jordan, seeking to answer the following main question:

How do board characteristics and ownership structure affect financial sustainability in companies listed on the

Palestine Exchange (PEX) and Amman Stock Exchange (ASE)?

## Literature review & hypotheses development

### Literature review

#### *Board diversity and sustainability outcomes*

According to the gender diversity field, studies indicate that female representation on boards positively impacts corporate social responsibility (CSR) engagement and reporting, so female directors contribute to the establishment of ethical policies and direct resources toward value-maximizing social projects [49]. Additionally, firms with higher board gender diversity tend to have better social and environmental performance [20]. But independent directors are linked to enhanced corporate environmental performance. They facilitate the formation of sustainability-themed alliances, which are strategic partnerships with pro-environment organizations that improve environmental outcomes [83, 84]. Independent boards also enhance the legitimacy of CSR reporting by promoting transparency and accountability [49].

The mechanisms that linking board composition to sustainability presents through the presence of women and independent directors increases the likelihood of forming alliances with renewable energy organizations, which in turn boosts corporate environmental performance, so these alliances help firms mitigate resource needs and explore growth opportunities in sustainability [83, 84].

Additionally, boards with diverse compositions are better equipped to integrate sustainability into corporate strategies, this integration is crucial for addressing stakeholder concerns and maintaining organizational legitimacy in the marketplace [83].

In conclusion, the evidence suggests a need for policies that promote board diversity to enhance sustainability outcomes. However, the over-reliance on quantitative methodologies in existing studies limits the understanding of how diversity influences sustainability performance [16]. On the other hand, the impact of board composition on sustainability can vary across industries. For instance, in the oil and gas sector, sustainability-themed alliances are a recognized pathway for promoting environmental responsibility [83].

#### *Ownership structure and governance efficiency*

Ownership structure refers to the pattern of ownership of overall; the correlation between ownership structure and efficiency of governance is complicated. A high degree of ownership concentration could result in both positive and negative results. In some cases, like in Ukraine, ownership concentration, including state ownership, is shown to enhance efficiency, possibly linked to unique

country conditions [110]. Conversely, in China, ownership concentration is a negative influence on investment efficiency in state-owned firms (SOEs) [26].

Foreign ownership of companies frequently increases the quality of corporate governance but does not necessarily improve efficiency. For example, among banks in Ghana, foreign banks are more efficiency-seeking but not necessarily more profit-seeking relative to their domestic competitors [21]. Ukrainian companies owned by foreign concerns are more inefficient, while their governance qualities improve [110].

It could result in inefficiencies, but in the context of the banking sector of Ghana, it is related to cost inefficiency [21]. Correspondingly, in the Ukrainian context, it negatively affects efficiency [110].

A characteristic of efficiency is that it positively relates to the presence of an independent board. This is observed in the context of Chinese firms, which indicates that more independent firms are more efficient, implying that the board is an effective governance structure [99]. A larger board is observed to provide mixed results in that it is more profit-efficient but slightly less cost-efficient in the context of firms in Ghana [21]. Compensation through incentives, such as stock options for the CEO, is seen to enhance investment efficiency for firms in China [26]. This implies that management-shareholder alignment is important for improving governance efficiency.

While ownership structure and corporate governance are important determinants of firm efficiency, their impact may be very different under different institutional and cultural backgrounds. In particular, the efficiency-enhancing effect of higher ownership concentration in Ukraine is unlikely to be replicated in other settings due to country-specific factors that prevailing in the latter case [110]. Similarly, the positive association between foreign ownership and good governance practices in other nations could not necessarily result in higher efficiency levels in the banking industry of Ghana [21].

#### *Institutional context of Palestine and Jordan*

*Entrepreneurship and institutional support:* In Palestine or Jordan, for example, factors such as institutional frameworks significantly influence entrepreneurship, leading entrepreneurs in these areas to often experience resource constraints, which necessitate their reliance on social capital for support [68].

The context of Palestine, in particular, is characterized by conflict and occupation, which influences women's digital entrepreneurship. Despite the empowering role of digital technology for women, an antagonistic context hinders their development by confining them to the home-based business, thereby undermining their empowering role [9].

Microfinance institutions (MFIs) play a crucial role in providing services to the poor in Palestine and Jordan, and therefore, their productivity is of utmost importance to these institutions [89].

*Governance and regulatory frameworks:* Currently, renewable energy governance in Palestine faces significant changes over the transition to more collaborative and horizontal-based governance networks. In this respect, such a transition is vital both for overcoming restrictions related to the conflict and further creating conditions for sustainable energy solutions. That was said in [55].

In building an effective regulatory framework in the Palestinian Authority, there is a real need for a sound mechanism and institutions that can oversee and implement regulatory policies efficiently. This would be in the interest of ensuring high-quality regulation and in support of institutional development.

*Socio-political dynamics:* From the historical and political relationship between Jordan and Palestine, through constant union and secession, the recognition by Jordan of Palestinian statehood in 1988 went a long way toward Palestinian independence, although full statehood is still hampered by continuous occupation and political dynamics [53]. But in Jordan, the institutional response to violent extremism remains highly securitized and religiously driven, with little emphasis on the structural community-level drivers. The approach underlines the requirement for more adaptive and multi-faceted policies in response to the rising challenge posed by the violent extremism [22]. While the institutional contexts of Palestine and Jordan present numerous challenges, they also offer opportunities for development and collaboration.

### Hypotheses development

It can be concluded that enhancing gender diversity in corporate governance bodies can play an effective role in enhancing corporate performance and improving governance practices. [40] emphasize the significant contribution of board diversity in enhancing organizational culture, mitigating fraud risks and reducing agency costs. Compelling evidence provides support for the idea that gender diversity enhances the financial sustainability of microfinance institutions. Moreover, female CEOs and directors appear to exert a positive influence on board effectiveness, as previous studies indicate [56, 66].

Companies with female board members may enjoy better representation and understanding of their customer base, which can lead to strategic advantages and improved financial results [74]. Githaiga & Kosgei [35] found that board gender diversity is positively and significantly associated with sustainability reporting.

However, the study conducted by [103] presents findings indicating that there is no significant relationship between corporate governance mechanisms, gender diversity, and financial sustainability. Pucheta-Martínez and Gallego-Álvarez's [65] found that female directors have a useful impact on company performance based on previous information.

In the field of board gender diversity, board gender diversity has a positive and not significant impact on firm performance, but under the moderating effect of CSR, the results go from positive and not significant to positive and significant [92], while a study by Mansour et al. [62, 64] examines the impact of board gender diversity on the performance of the Jordanian banking sector, taking into account that the socio-cultural environment in Jordan exhibits a higher degree of gender bias compared to more developed environments, so the relationship between BGD and performance was a strong positive correlation between board diversity by type (BGD) and market-based performance indicators (Tobin's Q) [62, 64].

In a different research context, Mansour et al. [62, 64] investigated how female CEOs and board composition, in terms of gender, influence environmental innovation, so the study showed that female CEOs are more committed to the environment than their male counterparts. It also found that board composition, in terms of gender, strengthens the relationship between female CEOs and environmental innovation; in addition, female CEOs have a greater influence on promoting environmentally friendly innovation in energy companies.

Reducing corporate risk and achieving financial stability also depends heavily on strengthening environmental, social, and governance (ESG) practices, which mitigate exposure to market volatility and regulatory changes. In other words, increased gender diversity on boards of directors enhances this effect in reducing risk and suggests that diverse boards contribute to improved decision-making and risk management [93].

Governance theories, such as stakeholder theory and resource dependence theory, indicate that board diversity enhances the quality of decisions and the company's ability to understand stakeholder needs, leading to enhanced financial sustainability through the adoption of comprehensive and effective policies that take into account environmental, social and economic risks. We can formulate the following hypothesis:

*H1:* There is a positive impact of gender diversity on financial sustainability within companies listed on the Palestine Exchange (PEX) and Amman Stock Exchange (ASE).

The existing literature about board size shows divergent perspectives presenting nuanced insights into the debate. One school of thought supports larger boards of directors, contending that they provide greater oversight and reduce agency costs.

Supporters argue that larger boards present a diverse scope of perspectives and expertise, which can improve decision-making and mitigate potential conflicts of interest. Conversely, an opposing viewpoint indicates that smaller boards may be more effective as they enable quicker decision-making and foster stronger cohesion among members. Critics of larger boards argue that they may suffer from coordination challenges and decision-making inefficiencies due to their size. However, supporters counter that larger boards can draw upon a wider pool of talent and experience, potentially leading to more robust governance procedures. Thus, the relationship between board size and corporate performance is complex and context-dependent needing careful consideration of various factors such as industry dynamics, firm size, and regulatory environment [57, 91].

Previous research has displayed a positive correlation between the size of the board of directors and the extent of voluntary disclosures. For example, studies conducted by [57, 58] have provided evidence supporting this relationship. Similarly, scholarly investigations focusing on the link between board size and corporate social responsibility (CSR) disclosures have also suggested a positive association. Ntim & Soobaroyen [77], for instance, found empirical support for the notion that larger board sizes are associated with increased levels of CSR disclosures.

A larger board size often indicates greater diversity of perspectives and expertise, allowing for more comprehensive decision-making and strategic oversight. With a diverse set of skills and experiences among board members, companies may benefit from improved governance and strategic guidance, leading to better financial outcomes [74]. According to the study by Shamil, Shaikh, Ho, & Krishnan [95], there is a documented positive association between board size with sustainability reporting, similar to the study by [111] board size has a positive relationship with financial performance.

In the new study by Zureigat, Al\_Hazimeh, Batayneh, & Alrawashedha [111], it is indicated that board size has a highly significant positive impact on financial performance; this means that a larger board size is associated with better financial performance based on literature review information.

According to agency and resource theories, a larger board may improve oversight and reduce conflicts of interest, positively impacting financial sustainability through more informed decision-making and stronger governance. However, excessively large boards can lead

to slower decision-making processes. The hypothesis could be:

*H2:* There is a positive impact of board size on financial sustainability within companies listed on the Palestine Exchange (PEX) and Amman Stock Exchange (ASE).

The number of board meetings held can enhance communication and coordination among board members, which helps achieve a common understanding of the goals and challenges facing the company. In addition, the presence of financial experts on the board can contribute to providing appropriate financial advice and guidance to improve the company's performance and achieve its financial goals. Thus transparency and accountability are enhanced, and the company can make better decisions based on accurate financial analyses and constructive discussions among board members [34].

The research by Nguyen & Huynh [74] provides empirical evidence suggesting that several characteristics of the board of directors positively influence corporate financial performance. Specifically, factors, such as board meeting frequency, are identified as having a favorable impact on financial performance.

In the field of corporate governance, the frequency of board meetings emerges as a significant factor in the study conducted by [39]; their research uncovers a relationship between board meeting frequency and financial performance, revealing an unexpected outcome compared to previous studies' findings. It was found that increasing the frequency of board meetings has a negative impact on the company's return on assets. This suggests that while regular board meetings are essential for effective governance, an excessive number of meetings may lead to inefficiencies in the decision-making process or indicate underlying organizational challenges that hinder financial performance.

Agency theory suggests that increased board meetings enhance oversight and reduce conflicts of interest, and the legitimacy and stakeholder theories contribute to the explanation that more meetings lead to greater commitment to financial sustainability through performance monitoring and risk management. Based on the literature reviewed, the hypothesis for board meetings is as follows:

*H3:* There is a significant positive impact of the frequency of board meetings on financial sustainability within companies listed on the Palestine Exchange (PEX) and Amman Stock Exchange (ASE).

CEO duality, which refers to the combined role of chairman and CEO in firms, has been a subject of debate in corporate governance. Agency theorists argue that

CEO duality compromises board functions and independence. To address this concern, some propose a dual leadership structure, where the roles of chairman and CEO are separated. Studies by [25, 33], and [36] have reported varying associations between CEO duality and voluntary disclosures. While Chau & Gray [25] found a positive association, Forker [33], Gul Leung (2004) reported negative associations. Conversely, research by [41] and [14] found no significant link between dual leadership and voluntary disclosures. Similarly, studies examining the relationship between dual leadership and corporate social responsibility (CSR) disclosures have yielded conflicting results, with some indicating negative associations or no association at all [77, 91].

Chu [29] suggested that the duality of the Board of Directors has a positive impact on financial performance. However, the study in Vietnam only used a relatively simple method of static analysis and the research time was short, so it is not comprehensive. [95], there is a documented positive association between board size and dual leadership with sustainability reporting. This study also found that sustainability reporting is likely to be affected depending on the size of the company and the growth of the company.

In contrast, Alia & Mardawi [6] identified a significant negative relationship between board size, CEO duality, and Corporate Social Responsibility Disclosure (CSR) among Palestinian companies.

A recent study conducted by Pavlopoulos, Magnis, & Iatridis [81] aimed to identify the factors that determine the extent to which companies adopt integrated reporting, which is a type of reporting that combines financial and non-financial performance (such as environmental, social and governance performance). In other words, large, indebted companies with a dual management structure tend to use integrated reporting, perhaps to enhance transparency and trust. Conversely, companies with strong financial performance (high ROA) may reduce the use of these reports because they may view them as unnecessary.

Previous studies show conflicting results regarding the relationship between CEO duality and voluntary disclosure or sustainability reporting. These discrepancies can be explained by the presence of several factors that may influence this relationship. These factors include the different cultural and legal context between countries, industry structure and company-specific variables, in addition to the different research methodologies used to study this relationship.

Agency theory posits that combining the positions of CEO and Chairman of the Board leads to a concentration of power and weak oversight, which may negatively impact financial sustainability due to increased

opportunistic behavior and reduced transparency. Based on the literature reviewed, the following hypothesis is proposed regarding CEO duality and its impact on financial sustainability:

*H4:* CEO duality has a significant effect on financial sustainability within companies listed on the Palestine Exchange (PEX) and Amman Stock Exchange (ASE).

Corporate governance plays an important contribution in shaping the behavior and performance of companies, influencing their sustainability practices and financial outcomes. In recent years' scholars have increasingly focused on understanding the relationship between corporate governance mechanisms and various dimensions of corporate performance, including sustainability reporting and financial performance.

Core, Holthausen, & Larcker [30] found that board independence provides an improvement role of economic performance by raising the quality of decision-making.

Githaiga & Kosgei [35] conducted a study to explore the relationship between board independence and sustainability reporting. Their findings revealed a noteworthy and positive correlation between these two variables, indicating that companies with greater board independence tend to engage more in sustainability reporting practices. Board independence refers to the extent to which board members are free from undue influence or conflicts of interest allowing them to make decisions in the best interests of the company and its stakeholders.

The positive association found by Githaiga & Kosgei [35] suggests that independent boards are more likely to prioritize sustainability initiatives and communicate their efforts to stakeholders through comprehensive reporting mechanisms, so this underscores the significance of board independence in fostering corporate transparency, accountability, and sustainable business practices.

The study by Hamad, Mhammad, Mahmood, & Khzir [39] revealed a positive relationship between board independence and the financial performance of companies. The study indicated that boards with a higher proportion of independent members often exhibit superior financial performance indicators, such as shareholder returns and earnings per share profitability. This positive relationship can be attributed to the critical role played by independent voices and diverse perspectives on the board. By sharing their ideas and expertise, independent board members can enrich decision-making processes, enhance management oversight, and ultimately deliver greater value to shareholders. This underscores the importance of board independence as a key factor in improving companies' financial performance.

Adebayo, Onikoyi, Kareem, & Lamidi [4] investigated the impact of corporate governance mechanisms on the sustainable growth of manufacturing firms in Nigeria during the financial crisis period; the study found that board independence exhibited a positive association with corporate sustainable growth. Specifically, the presence of independent directors on the board was linked to improved corporate performance. Therefore, the study underscores the importance of maintaining a board structure that includes independent directors to enhance oversight and ensure that management decisions align with the company's long-term objectives.

Independence is one of the most important tools for reducing agency problems, as it reduces management dominance and increases oversight, which enhances transparency and strengthens the commitment to financial sustainability through more balanced and unbiased decisions. The hypothesis for the impact of board independence on financial sustainability within organizations could be formulated as follows:

*H5:* There is a significant positive impact of board independence on financial sustainability within companies listed on the Amman and Palestine Stock Exchanges.

Board members with higher levels of education may bring valuable experience and knowledge to the board. Their educational background may include related fields such as finance, accounting, or business administration, allowing them to contribute insights that positively impact financial decision-making and overall company performance [74].

Previous research by [12, 34, 100] has consistently highlighted the positive impact of board members' academic background on business performance. Specifically, variables such as the education level of board members have been identified as significant factors contributing to improved business outcomes. This implies that board members with higher levels of education possess the cognitive abilities necessary for effective decision-making, strategic planning, and problem-solving within the organization. Additionally, Hsu, Chen, & Cheng [43] emphasized the importance of education in enhancing board members' capabilities in processing information, recognizing new insights, and understanding abstract concepts. Furthermore, Katmon, Mohamad, Norwani, & Farooque [52] found that a higher education level among board members is associated with enhanced Corporate Social Responsibility (CSR) disclosure practices, indicating the role of education in promoting transparency and responsible business practices. However, Tjahjadi, Soewarno, & Mustikaningtiyas [101] provided a contrasting perspective by suggesting that boards with lower

education levels may be linked to poorer environmental sustainability performance underscoring the importance of academic background in addressing specific business challenges such as environmental sustainability concerns.

The contradictions in the findings of studies regarding the impact of board members' academic background on business performance may stem from variations in research methodologies, contextual factors, sample heterogeneity, time frames, measurement issues, and interaction effects. These factors contribute to the complexity of the relationship under investigation highlighting the need for further research to elucidate the underlying mechanisms and contextual nuances involved.

Resource theory suggests that diverse academic backgrounds enhance the board's ability to analyze risks and guide the company toward sustainable financial practices. Members with financial or environmental backgrounds contribute to higher quality decisions related to sustainability. Based on the literature reviewed, the hypothesis regarding the impact of board members' academic background on financial sustainability can be formulated as follows:

*H6:* The academic background of board members significantly influences financial sustainability within companies listed on the Amman and Palestine Stock Exchanges.

Multiple corporate board memberships refer to an individual's participation on the boards of more than one company, so this topic is of great importance in corporate governance, as it has positive and negative impacts on both the companies involved and the individuals involved.

On the positive side, multiple membership can lead to the exchange of knowledge and experiences between companies, strengthen relationships and networks, and improve the quality of corporate governance. On the negative side, multiple memberships may lead to conflicts of interest, lack of focus on any one company, and difficulty managing time [60].

The findings from Liu, Miletkov, Wei, & Yang [60] align with the essence of the CSRC's 2001 Guidelines, which mandated that listed company boards should include a minimum of one-third independent directors. Overall, the study suggests that the dual membership of board members, along with their independence, contributes to enhancing company performance. In other words, the study results show that they are consistent with the guidelines issued by the China Securities Regulatory Commission (CSRC) in 2001, which stipulated that one-third of the board members of listed companies should be independent.

The presence of members holding multiple positions in the boards of different companies enhances decision-making and the implementation of best practices, thereby contributing to achieving more sustainable financial results in the long term. Fama & Jensen [32] noted that multiple board memberships are an important procedure for the future because if the multiple board memberships contain the most successful managers, a common outcome of a functioning market for top managers can be effective corporate governance.

According to Adams, Hermalin, & Weisbach [3], a board of directors with multiple memberships is a reflection of the respective manager's capabilities. Better-skilled managers tend to serve on more outside boards compared to their lower-skilled counterparts, while the least-skilled managers do not receive outside directorships. This implies that boards with multiple memberships enhance efficiency and governance due to the high skill levels of their members. In the recent research by Jahan, Lubberink, & Van Peurseem [44], evidence suggests that prestigious multiple board memberships positively impact firm performance, thereby contributing to long-term sustainability.

According to resource theory, members who serve on other boards bring valuable experience and networks that enhance financial sustainability. However, agency theory warns against excessive board membership, as it can lead to weakened commitment and time dedicated to the company. Based on the literature reviewed, the hypothesis regarding the impact of multiple memberships of the board of directors on Financial Sustainability can be formulated as follows:

*H7:* The multiple membership of the board of directors positively impacts the financial sustainability of companies within companies listed on the Palestine Exchange (PEX) and Amman Stock Exchange (ASE).

Committees are integral components of organizational structures, playing crucial roles in decision-making, oversight, and governance processes; the effectiveness of these committees is paramount to the overall success and performance of an organization; based on the study by PVVS & Palaniappan [85], the consolidation or separation of roles between the CEO and the Chairman of the Board, along with the effectiveness of the audit committee, has an impact on the financial performance of the company. Additionally, sound governance mechanisms can also support a positive impact on financial performance, such as the effectiveness of the audit committee, and an effective audit committee should include qualified and knowledgeable members, with a majority being independent [1, 106].

Lary and Taylor (2012) displayed the significant role of audit committee effectiveness in financial reporting and auditor independence. They find that a higher level of audit committee independence and competence is significantly associated with a reduction in financial restatements, indicating improved accuracy and integrity in financial statements.

But on the contrary, according to the study of Alqatamin, [8], the frequency of audit committee meetings (a measure of committee effectiveness) has been shown to have a statistically insignificant positive impact. Thus, it can be generally stated that the efficiency of committees affects the financial performance of companies and supports sustainability. Agency theory and resource theory explain that effective committees such as an audit committee and a risk committee increase the level of oversight and the quality of reporting, thereby supporting financial sustainability by reducing operational and financial risks. Based on the literature reviewed, the hypothesis regarding the effect of Committees effectiveness on financial sustainability can be formulated as follows:

*H8:* The effectiveness of committees positively influences financial sustainability within companies listed on the Palestine Exchange (PEX) and Amman Stock Exchange (ASE).

Foreign ownership has been a subject of interest in academic research due to its potential implications for economic performance and firm behavior. Crinò & Onida [31] examine the influence of foreign participation on economic performance in Lombardy, a key region for Foreign Direct Investment (FDI) in Italy. Their study explores various aspects of economic performance, such as capital intensity, knowledge-intensity, productivity, wages, returns on investments, and financial structure. The study indicates that foreign ownership creates a real economic impact, particularly in the manufacturing sector, by raising productivity, wages, and knowledge intensity. However, these foreign firms may suffer from lower returns on investment. In the service sector, however, these benefits are often the result of smart investment choices rather than just foreign ownership. This means that foreign multinational companies exhibit higher levels of knowledge, productivity, and wages than local companies. However, they achieve lower returns on investment, which may indicate higher operating costs or long-term investments.

Foreign ownership can significantly impact a firm's economic performance, as highlighted by [18]. Their study investigates the presence of a foreign ownership premium by comparing Italian firms owned by foreign

entities with purely domestic firms. Results indicate that foreign-owned companies exhibit superior performance in terms of size, profitability, and financial stability. This premium tends to strengthen over time and is particularly pronounced in the service sector. However, the advantage diminishes if the foreign investor operates from a fiscal haven. In other words, foreign ownership can significantly impact the economic performance of companies. The study focused on the so-called “foreign ownership premium,” comparing the performance of Italian companies owned by foreign parties with those that are fully managed domestically. The results showed that foreign companies achieve superior performance in terms of size, profitability, and financial stability, indicating tangible economic benefits from foreign ownership. The study also showed that this premium tends to increase over time and is more pronounced in the services sector than in other sectors, reflecting the knowledge-, technology-, and innovation-driven nature of this sector. However, the study also showed that these benefits decline significantly when the foreign investor is from a tax haven country. This may be due to the fact that this type of investment may not aim to improve operational performance, but rather to achieve tax gains, thus reducing the expected positive impact of foreign ownership on company performance.

Stakeholder theory and legitimacy theory explain that foreign investors often demand higher levels of disclosure and governance, which promotes financial sustainability by reducing risks and increasing transparency. The hypothesis for the impact of foreign ownership on financial sustainability could be:

*H9:* There is a significant positive impact of foreign ownership on financial sustainability within companies listed on the Palestine Exchange (PEX) and Amman Stock Exchange (ASE).

The relationship between ownership concentration and corporate reporting quality is multifaceted, with divergent perspectives existing in academic literature. Ownership concentration, referring to the distribution of ownership within a company, has been subject to debate regarding its influence on the accuracy and reliability of corporate reports. Proponents of the first view argue that higher ownership concentration positively impacts reporting quality by fostering increased accountability, reducing information asymmetry, and motivating major shareholders to utilize reports for performance evaluation and investor attraction; however, contrasting viewpoints suggest that concentrated ownership may lead to reduced disclosure incentives and potential manipulation of financial data for

personal gain, thereby diminishing the reliability of corporate reports. Notably, a study by Yuen, Liu, Zhang, & Lyu (2009) supports the notion that major shareholders may rely less on official reports due to their access to internal information, challenging the premise of ownership concentration positively influencing reporting quality. In conclusion, the relationship between ownership concentration and corporate reporting quality is nuanced, influenced by factors such as regulatory environment, industry dynamics, and the motivations of major shareholders, warranting further exploration in academic research.

In the research of Liu & Anbumozhi [59] investigated the influence of ownership concentration on corporate environmental information disclosure among Chinese listed companies; they sought to understand how ownership structure affects the level of environmental disclosure; the study revealed that ownership concentration had a significant impact on the extent of environmental information disclosed by companies. Specifically, the firms with higher ownership concentration tended to provide less environmental data to the public compared to those with more dispersed ownership. This suggests that concentrated ownership may lead to reduced transparency and accountability regarding environmental performance; also the findings underscore the importance of considering ownership structure as a determinant factor in environmental disclosure practices highlighting the need for greater transparency and stakeholder engagement in corporate environmental reporting.

Jensen & Berg [48] investigated the differences between companies practicing traditional sustainability reporting (TSR) and those adopting integrated reporting (IR), emphasizing the role of ownership concentration. Employing institutional theory, they aimed to identify potential determinants of IR adoption and test their relevance empirically. Their findings indicated that ownership concentration was a significant determinant distinguishing IR companies from those engaging in TSR, and this suggests that firms with higher ownership concentration may be more inclined to adopt integrated reporting practices compared to those with dispersed ownership structure.

Raimo, Vitolla, Marrone, & Rubino [88] conducted a study aiming to explore the relationship between ownership structure and the quality of integrated reporting (IR), by using agency theory as a framework, so the findings revealed that institutional ownership had a positive impact on the quality of integrated reports, while ownership concentration, managerial ownership, and state ownership had negative effects. These results were consistent with the alignment of integrated reports with the (IR) framework; also this study

provides valuable insights into the role of ownership structure in shaping IR policies and practices.

According to agency theory, ownership concentration can improve oversight and reduce opportunistic behavior. However, excessive ownership concentration can create undue power for large owners, potentially undermining financial sustainability if resources are exploited for their own benefit. The hypothesis for the impact of Concentration ownership on financial sustainability could be:

*H10:* There is a significant negative impact of ownership concentration on financial sustainability within companies listed on the Palestine Exchange (PEX) and Amman Stock Exchange (ASE).

Institutional investors with their substantial shareholdings play an important role in corporate governance by monitoring management activities cost-effectively. Their professional expertise and resources enable thorough evaluations of companies' performance and engagement with corporate leadership to advocate for strategic improvements, thereby enhancing accountability and fortifying financial markets [51].

Ownership by institutional investors refers to the significant stake these investors hold in a company, granting them greater influence and control over corporate decisions compared to individual investors, with substantial holdings institutional investors actively monitor corporate management activities, leveraging their resources, expertise, and access to information to assess company performance thoroughly, they engage in dialog with management, advocating for changes to enhance shareholder value. Additionally, institutional investors vote on key corporate matters at shareholder meetings, exerting significant influence due to the size of their holdings, so this ownership structure enables institutional investors to engage in closer monitoring activities and exert substantial pressure on corporate management to prioritize shareholder interests [88, 105].

To address information asymmetry firms with high institutional ownership are inclined to enhance the quality of information disclosure, this proactive approach is adopted by management to bridge the gap in information between themselves and shareholders, with institutional investors holding significant stakes, management recognizes the importance of transparent communication to build trust and confidence among investors. Consequently, firms with high institutional ownership are more motivated to provide comprehensive and accurate information to ensure transparency and mitigate uncertainties in the market so this

strategic effort contributes to fostering a favorable environment for investors and reflects positively on the firm's reputation and performance [14].

Raimo, Vitolla, Marrone, & Rubino [88] documented a favorable impact of institutional ownership on Integrated Reporting (IR) practices; this suggests that companies with a higher proportion of institutional investors are more likely to engage in and adhere to Integrated Reporting standards, the involvement of institutional investors often correlates with greater emphasis on transparency, accountability, and long-term value creation. Consequently, their influence can contribute positively to the adoption and implementation of IR practices within organizations.

Agency theory and stakeholder theory predict that institutional investors exercise strong oversight and demand sound governance, thereby promoting financial sustainability through more efficient decision-making and risk monitoring. The hypothesis regarding institutional ownership and financial sustainability could be formulated as follows:

*H11:* Institutional ownership has a significant positive impact on financial sustainability within companies listed on the Palestine Exchange (PEX) and Amman Stock Exchange (ASE) (Fig. 1).

## Method

### Empirical data

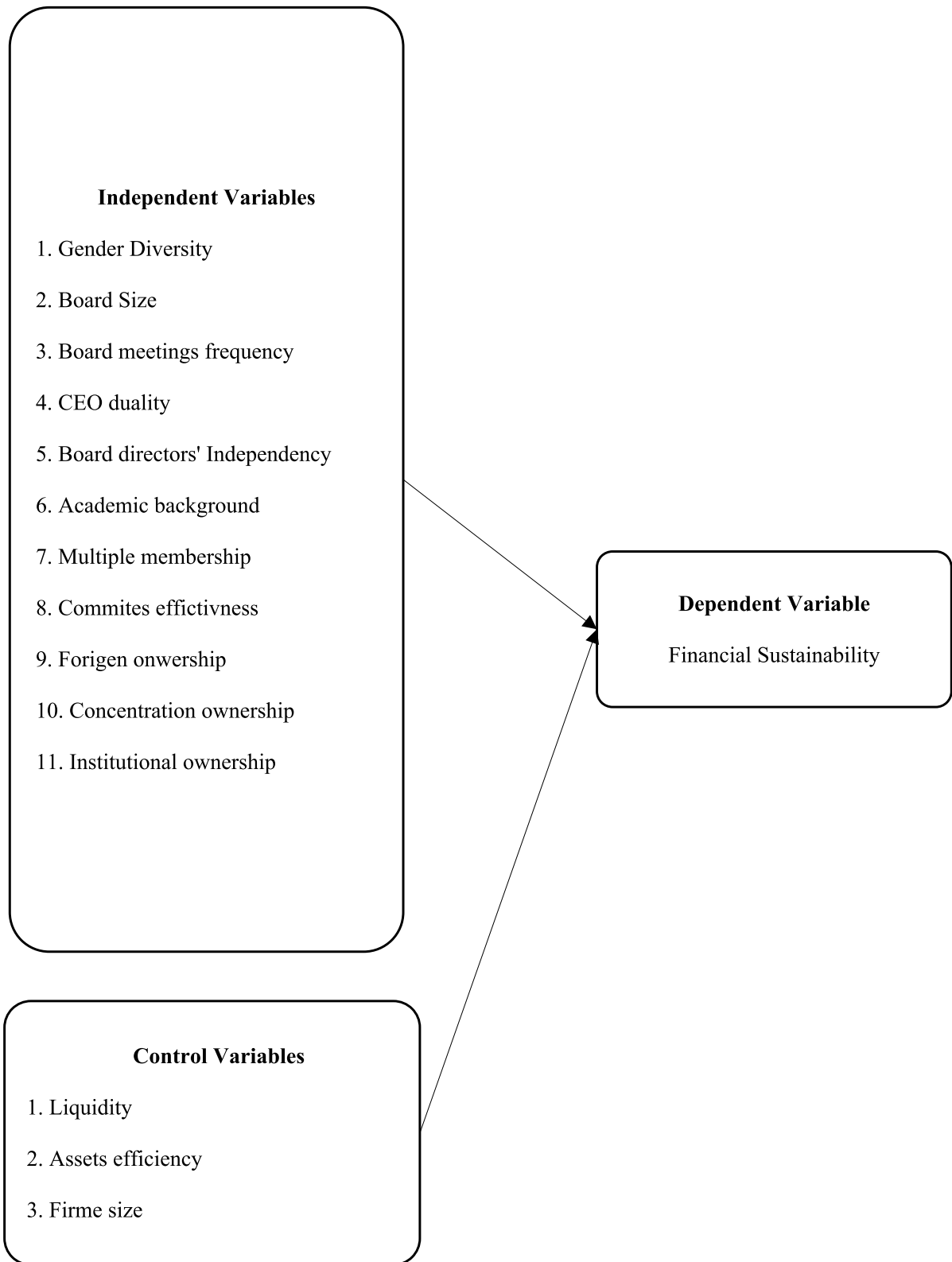
The study population includes all industrial, services and investing companies listed on the Palestine and Amman stock exchanges during the study period. On the other hand, the study sample was selected based on specific criteria: (1) The company be listed on the stock exchange during all years (2018–2023). (2) All of its annual reports are published were accessed (Table 1).

The total number of the sample reached 113 companies distributed over three sectors: services, industry and investment. Some companies were excluded from the study due to unavailability of necessary data for certain periods or not being listed on the stock exchange.

In Palestine, the selected sample included 29 companies, while 3 companies were excluded out of 32 listed companies. In Jordan, the selected sample included 84 companies, with the exclusion of 10 companies out of 94 listed companies, so this sample contributed significantly to achieving the objectives of the study by providing an accurate representation of companies in the three sectors according to the availability of data (Table 2).

### Statistical methods

Two kinds of data techniques used in this study: (1) descriptive statistics and (2) inferential statistics. On the other hand, the variance inflation factor (VIF) used to



**Fig. 1** A conceptual framework describing the relationship between Board characteristics, Ownership structure, financial sustainability *Source:* Author's own work

**Table 1** Selected sample. *Source:* Author’s own work

Country	Palestine			Jordan		
	Sector	Selected sample	Excluded	Population	Selected sample	Excluded
Services	8	1	9	39	6	45
Industry	11	0	11	45	4	49
Investment	10	2	12	–	–	–
Total	29	3	32	84	10	94

**Table 2** Variables and measurement. *Source:* Author’s own work

Independent variables	Definition	References
Gender diversity	Gender diversity refers to the proportion of females among the members of a board of directors	[15]
Board Size	Board Size indicates the total count of members comprising a board of directors	[2, 74]
Board Meetings per year	Board Meetings per year represents the total count of meetings held by the board of directors within a given year	[39]
CEO duality	CEO duality is represented as a binary variable: it is coded as 1 if the CEO also serves as a member of the board, and 0 if the CEO does not hold a board position	Abdeljawad and Masri, (2020); Jalal [45]
Board of Directors’ independence	Board of Directors’ independence is defined as the proportion of outside directors relative to the total number of board members	[28]
Academic background	Academic background denotes the percentage of directors holding a minimum of a master degree within an organization’s leadership	[97]
Multiple memberships of the Board of Directors	assigns a value of 1 if there is multiple membership and a value of 0 otherwise	[60]
Committees Effectiveness	is based on the frequency of meetings, specifically the number of committee meetings held during the year	[8, 85]
Foreign ownership	foreign ownership was measured as the percentage of the total shares owned by non-Palestinian or Jordanian investors in the company	[18]
Concentration ownership	Concentration ownership refers to the accumulation of shares held by the certain largest shareholders within a company	[4]
Institutional ownership	Institutional ownership refers to the proportion of outstanding shares held by institutional investors, encompassing both domestic and foreign financial institutions and trust funds	[43]
Dependent variables	Definition	References
ROA (Return on Assets)	ROA is measured by dividing NOI/ATA (where NOI represents Net Operating Income, and ATA represents Average Total Assets)	[73, 79]
OSS (Operational Self Sufficiency)	Financial Revenue – (Financial Expense + Net Impairment Loss + Operating Expense)	Okoye et al. [79]
Financial Leverage (DTA)	Debt to Assets Ratio = Total Liabilities/Total Assets of the firm	
Control variables	Definition	References
Liquidity (CR)	- Current Ratio (CR) = Current Assets/Current Liabilities	[42]
Asset Efficiency (ROS)	ROS = Net Income/Total Sales	
Firm’s Size (Size)	Natural Log (Total Assets)	[87]

test if the problem of multicollinearity exists. Moreover, multiple linear regression techniques using the pooled ordinary least squares (OLS) method used to examine the impact of board of directors’ characteristics and ownership structure on financial sustainability.

The research model equation:

$$ROA = \beta_0 + \beta_1(\text{Gender Diversity}) + \beta_2(\text{Board Size}) + \beta_3(\text{Board Meetings per Year}) + \beta_4(\text{CEO Duality}) + \beta_5(\text{Board of Directors’ Independence}) + \beta_6(\text{Academic Background}) + \beta_7(\text{Multiple Memberships of the Board of Directors}) + \beta_8(\text{Committees Effectiveness}) + \beta_9(\text{Foreign$$

Ownership) +  $\beta_{10}$ (Concentration Ownership) +  $\beta_{11}$ (Institutional Ownership) +  $\epsilon$ .

$OSS = \gamma_0 + \gamma_1(\text{Gender Diversity}) + \gamma_2(\text{Board Size}) + \gamma_3(\text{Board Meetings per Year}) + \gamma_4(\text{CEO Duality}) + \gamma_5(\text{Board of Directors' Independence}) + \gamma_6(\text{Academic Background}) + \gamma_7(\text{Multiple Memberships of the Board of Directors}) + \gamma_8(\text{Committees Effectiveness}) + \gamma_9(\text{Foreign Ownership}) + \gamma_{10}(\text{Concentration Ownership}) + \gamma_{11}(\text{Institutional Ownership}) + \epsilon$ .

Where

- ROA: Return on Assets.
- OSS: Operational Self-Sufficiency.
- $\beta_0, \beta_1, \dots, \beta_{11}$ : Regression coefficients for independent variables in the model predicting ROA.
- $\gamma_0, \gamma_1, \dots, \gamma_{11}$ : Regression coefficients for independent variables in the model predicting OSS.
- $\epsilon$ : Error term representing unexplained variation in the dependent variable.

## Empirical results

### Descriptive statistics

Regarding OSS, the mean value of 0.81 indicates that the level of financial sustainability on average is positive but not very high, and the value of the median (p50) of 0.17 reflects that half of the companies have a financial sustainability score of less than 0.17, which indicates that most values are in an almost low range, the minimum (Min) -0.33 shows the presence of companies with negative financial sustainability due to certain conditions or challenges, and the maximum (Max) 11.77 indicates that some companies achieve very high financial sustainability, Finally, the standard deviation (SD) of 1.97 indicates a large variation in financial sustainability scores between companies (Table 3).

The ROA mean and median are 0.01 and 0.02; this indicates a low return on assets, while the minimum and maximum ranged between -0.30 and 0.22, which means that some companies suffer significant losses while others achieve moderate positive returns due to unusual circumstances, the standard deviation (SD) is 0.08, and this result reflects relatively limited variation in performance.

Gender Diversity variable has the mean is 0.06 and indicates a very low presence of women on boards of directors, and the standard deviation (SD) is 0.11 reflects a slight variation between companies, and the maximum value was 0.50, Board Size has a mean value of 8.28 and this is the average number of board members the minimum and maximum range is between 4 and 18, which shows great variation between companies regarding the board size, the standard deviation (SD) was 2.64 and

**Table 3** Descriptive Analysis. Source: Author's own work

Variable	Mean	p50	Min	Max	SD
Operational Self-Sufficiency (OSS)	0.81	0.17	-0.33	11.77	1.97
Return on Assets (ROA)	0.01	0.02	-0.30	0.22	0.08
Gender Diversity (GD)	0.06	0.00	0.00	0.50	0.11
Board Size (BS)	8.28	8.00	4.00	18.00	2.64
Board Meetings (BM)	7.04	6.00	0.00	26.00	2.90
CEO duality	0.08	0.00	0.00	1.00	0.27
Independency (IND)	0.27	0.27	0.00	1.00	0.27
Academic Background (AB)	0.41	0.40	0.00	0.91	0.19
Multiple Memberships (MM)	0.97	1.00	0.00	1.00	0.17
Committees Effectiveness (CE)	13.50	16.00	0.00	43.00	8.87
Foreign Ownership (FO)	0.04	0.00	0.00	0.99	0.15
Concentration Ownership (CO)	0.66	0.71	0.00	1.00	0.23
Institutional Ownership (IO)	0.49	0.49	0.00	1.00	0.31
Financial Leverage (FL)	0.43	0.38	0.01	1.54	0.28
Liquidity (LIQ)	2.15	1.26	0.05	20.50	2.86
Asset Efficiency (AE)	-0.14	0.03	-29.39	4.06	1.58
Firm Size (FS)	7.52	7.51	5.61	9.32	0.65

indicates moderate and normal variation in the number of members.

According to Board Meetings the mean was 7.04 meetings annually and median was 6, and the minimum is 0 this shows that some companies did not hold any meetings according to the report disclosed by the company itself, the maximum was 26, and this number shows serious professional activity for some companies. Finally, the standard deviation (SD) was 2.90.

CEO Duality (Dual CEO position) the mean 0.08 indicates that the percentage of companies in which the CEO combines two functions (management and presidency) is low, and the values for this variable indicate that this situation in companies rarely occurs because it conflicts with corporate governance.

For Board Independence, the mean of 0.27 shows that the percentage of independent members is low, and the rest of the indicators in general indicate that companies have a board of directors that has an independent character.

For Academic Background, the mean (0.41) and the median (0.40) indicate that the proportion of members with an academic background is moderate on average. The maximum (0.91) and standard deviation (0.19) reflect that most companies have boards with a strong academic background and higher education, but for Multiple Memberships, the mean (0.97) and other indicators reflect that most members hold memberships in other companies.

For committees effectiveness the mean (13.50) shows that the average effectiveness is moderate, and the

standard deviation (8.87) indicates a high variation between companies. While for foreign ownership the mean (0.04) and the other indicators in the table reflect a decline in foreign ownership.

The Ownership Concentration variable showed a mean of 0.66, a median of 0.71, and a standard deviation of 0.23; this indicates that ownership is concentrated in the hands of a small number of shareholders. Institutional Ownership showed a mean and median of 0.49, with a standard deviation of 0.31 reflecting a relative balance between institutional and non-institutional ownership.

As for the control variables, Financial Leverage had a mean of 0.43, a median of 0.38, a minimum value of 0.01, a maximum value of 1.54, and a standard deviation of 0.28; this indicates that companies depending on debt on an average basis, according to Liquidity, it had a mean of 2.15 and a median of 1.26. The minimum and maximum values were 0.05 and 20.50, respectively, with a standard deviation of 2.86. This reflects good liquidity on average, while some companies may also have exceptionally high liquidity.

Asset Efficiency has the mean is -0.14, and the median is 0.03, which shows low asset efficiency on average, the minimum value was -29.39, reflecting that some companies have very low efficiency, the maximum value is 4.06 indicating that a few companies have high asset efficiency, and the standard deviation is 1.58. Finally, firm size (Company Size) has a mean of 7.52 and a median of 7.51 showing that the average size of companies in the sample is relatively large, and the minimum and maximum values were 5.61 and 9.32, respectively, indicating that company sizes are generally close, with a standard deviation of 0.65.

#### **Panel multi-collinearity test variance inflation factors (VIF)**

In general, correlation analysis or relationship matrix is used to test the problem of multicollinearity that may arise between the independent variables. This problem may occur when the independent variables are related to each other, which may lead to distortion of the results regression [38]. In other words, if there is a high correlation between the independent variables it can lead to unreliable results (Table 4).

For OSS and Firm Size, the relationship between OSS (sustainability proxy) and Firm Size is very strong and positive (0.6093), indicating that larger firms perform better. For ROA and Asset Efficiency, there is a strong positive correlation between return on assets (ROA) and asset efficiency (0.3863), which means that asset efficiency may positively affect return. The relationship between concentration and institutional ownership is strong and positive (0.6458), indicating that institutions typically hold larger stakes in firms with concentrated

ownership. Liquidity and Financial Leverage shows that the relationship between liquidity and leverage is negative (-0.4351), indicating that firms with high liquidity rely less on debt. Independency and Concentration present the relationship between board independence and concentrated ownership as negative and relatively strong (-0.2612), which may indicate that increasing concentrated ownership reduces directors' independence. Liquidity and Multiple Memberships show the correlation between liquidity and multiple memberships is negative (-0.4851), meaning that companies with board members holding multiple memberships may have less liquidity.

For ROA and Firm Size, there is a moderate positive correlation (0.2559), indicating that larger firms have higher returns on assets. Board Size and OSS present the relationship between board size and organization performance (OSS) is positive (0.2639), indicating that larger board size may contribute to improved performance. CEO Duality and Independency present the relationship is negative (-0.3030), which indicates that combining the positions of CEO and Chairman of the Board of Directors reduces board independence. Gender Diversity and OSS present the relationship between gender diversity and organizational performance as weak but positive (0.1046), which means that gender diversity may have a slight impact on performance. Academic Background and Board Size present a positive correlation between academic background and board size (0.2020), suggesting that larger boards may include members with strong academic backgrounds. Committees and Board Meetings present a positive relationship (0.6329), which indicates that an increase in the number of committees is associated with an increase in board meetings (Table 5).

Collinearity statistics, or the Variance Inflation Factor (VIF), it used to detect multicollinearity in regression analysis, so multicollinearity occurs when two or more independent variables in a regression model are highly correlated, which can lead to unreliable and unstable estimates of regression coefficients. In this study results, there is no multicollinearity in regression because the values for all variables are less than 5 [46, 47].

#### **Regression analysis**

Regression analysis is an important statistical tool for studying relationships between variables and identifying potential causal effects. In the context of panel data, which includes multiple observations of the same units over time, several analytical models are available, including the pooled simple linear regression model (Pooled Ordinary Least Squares). – (Pooled OLS) [98]. The Pooled OLS model is considered appropriate in cases where individual differences between units are not

**Table 4** Correlation Matrix. *Source:* Author’s own work

	OSS	ROA	Gender~y	BoardS~e	BoardM~s	CEOdua~y	Indepe~y	Academ~d	
OSS	1								
ROA	0.2490*	1							
GenderDive~y	0.1046*	0.1442*	1						
BoardSize	0.2639*	0.1314*	0.0265	1					
BoardMeeti~s	-0.0032	0.1146*	0.011	0.0277	1				
CEOduality	0.0863	0.038	0.0083	-0.0123	-0.1548*	1			
Independency	-0.1910*	-0.1483*	-0.1432*	-0.092	0.2525*	-0.3030*	1		
AcademicBa~d	0.1301*	-0.0252	0.0087	0.2020*	-0.0179	-0.1510*	0.0643	1	
MultipleMe~s	0.0387	-0.065	-0.1488*	0.1339*	-0.0154	0.0513	0.1796*	0.0389	
Committees~s	0.0556	0.0284	-0.0844	0.1160*	0.6329*	-0.4080*	0.5098*	0.0478	
ForeignOwn~p	0.0568	0.013	-0.035	-0.0288	-0.0673	-0.0312	-0.0188	-0.0214	
Concentrat~p	-0.0342	0.1059*	0.0412	-0.1241*	-0.1733*	-0.1206*	-0.2612*	-0.0106	
Institutio~p	0.0415	0.0829	-0.1109*	-0.0271	-0.1876*	0.0056	-0.4520*	0.0885	
FinancialL~e	0.1607*	-0.3347*	-0.089	-0.0673	0.0619	-0.1153*	0.1093*	0.053	
Liquidity	-0.0303	0.3266*	0.1238*	0.0525	-0.0017	0.0114	-0.1577*	-0.0924	
AssetEffic~y	0.0685	0.3863*	0.0313	0.1137*	0.0181	0.0716	-0.0845	-0.0422	
FirmSize	0.6093*	0.2559*	-0.003	0.3055*	0.0755	0.0539	-0.1748*	0.0575	
	Multipl~s	Commit~s	Foreig~p	Concen~p	Instit~p	Financ~e	Liquid~y	AssetE~y	FirmSize
MultipleMe~s	1								
Committees~s	0.0825	1							
ForeignOwn~p	-0.2929*	-0.0536	1						
Concentrat~p	-0.2427*	-0.1443*	0.1951*	1					
Institutio~p	-0.1110*	-0.1762*	0.2667*	0.6458*	1				
FinancialL~e	0.1570*	0.1043*	-0.0378	0.0836	0.0036	1			
Liquidity	-0.4851*	-0.0425	0.0958	0.1213*	0.0237	-0.4351*	1		
AssetEffic~y	-0.0315	-0.0348	0.0246	0.0796	0.0642	-0.1976*	0.0917	1	
FirmSize	-0.013	0.1392*	0.1376*	0.093	0.2270*	0.1587*	-0.0439	0.0796	1

\*, \*\*, \*\*\* indicates significance at 10, 5 and 1 percent level, respectively

**Table 5** Variance Inflation Factors (VIF) results. *Source:* Author’s own work

Explanatory Variables	VIF
Gender Diversity	2.690
Board Size	2.520
Board Meetings	2.090
CEO duality	2.050
Independency	1.800
Academic Background	1.650
Multiple Memberships	1.590
Committees Effectiveness	1.410
Foreign Ownership	1.370
Concentration Ownership	1.340
Institutional Ownership	1.300

important or when there are no fixed or random effects affecting the dependent variable. This model assumes that the data are homogeneous, and that the relationship

between the independent variables and the dependent variable is constant across units and time, and Pooled is characterized OLS is simple and easy to interpret, and this model suits this study because it deals with companies from two countries and several economic sectors and the goal is to study the phenomenon in general [61, 98, 107] (Table 6).

Before starting with the regression model, a multi-variate normality test was conducted, which showed that the data do not follow a normal distribution (Prob>chi2=0.0000). The heteroskedasticity test also showed the presence of a heteroskedasticity problem (Prob>chi2=0.0000), which justifies the use of robust standard errors to avoid biasing the results.

The F-statistic’s *p* value of 0.000 indicates that the regression models are statistically significant at a 99% confidence level; this means that the independent variables collectively explain a significant portion of the variability in both ROA and OSS.

**Table 6** Regression Analysis. Source: Author's own work

Variables	ROA			OSS		
	Coefficient ( $\beta$ )	t-stat	p value	Coefficient ( $\beta$ )	t-stat	p value
Gender Diversity	<b>0.063 ***</b>	<b>2.560</b>	<b>0.011</b>	<b>1.570 **</b>	<b>2.170</b>	<b>0.030</b>
Board Size	-0.001	-1.040	0.296	0.015	0.640	0.520
Board Meetings	<b>0.004 *</b>	<b>4.020</b>	<b>0.000</b>	<b>-0.069 *</b>	<b>-2.840</b>	<b>0.005</b>
CEO duality	-0.010	-1.240	0.217	0.350	1.370	0.172
Independency	-0.013	-0.900	0.370	<b>-1.488 *</b>	<b>-4.800</b>	<b>0.000</b>
Academic Background	0.007	0.500	0.618	<b>1.209 **</b>	<b>3.000</b>	<b>0.003</b>
Multiple Memberships	<b>0.077 *</b>	<b>3.570</b>	<b>0.000</b>	<b>0.796 **</b>	<b>2.470</b>	<b>0.014</b>
Committees Effectiveness	0.000	-1.010	0.314	<b>0.026 **</b>	<b>2.010</b>	<b>0.045</b>
Foreign Ownership	-0.012	-0.700	0.486	0.673	1.940	0.053
Concentration Ownership	<b>0.041 **</b>	<b>2.450</b>	<b>0.015</b>	-0.384	-0.820	0.414
Institutional Ownership	-0.014	-0.980	0.326	<b>-1.000 *</b>	<b>-2.620</b>	<b>0.009</b>
Financial leverage	<b>-0.071 *</b>	<b>-5.930</b>	<b>0.000</b>	<b>0.857 *</b>	<b>3.690</b>	<b>0.000</b>
Liquidity	<b>0.007 *</b>	<b>6.890</b>	<b>0.000</b>	<b>0.037 **</b>	<b>2.270</b>	<b>0.024</b>
Asset Efficiency	<b>0.015 *</b>	<b>2.700</b>	<b>0.007</b>	<b>0.054 **</b>	<b>2.210</b>	<b>0.028</b>
Firm Size	<b>0.036 *</b>	<b>6.100</b>	<b>0.000</b>	<b>1.696 *</b>	<b>9.510</b>	<b>0.000</b>
_cons (Intercept)	<b>-0.350 *</b>	<b>-6.920</b>	<b>0.000</b>	<b>-12.638 *</b>	<b>-8.750</b>	<b>0.000</b>
F-Statistic	0.000			0.000		
R-squared	38%			44%		
Number of obs	678			678		

\*, \*\*, \*\*\* indicate significance at 10, 5, and 1 percent level, respectively

R-Squared (38% for ROA, 44% for OSS), for ROA, the R-squared of 38% suggests that the independent variables explain 38% of the variance in ROA, and for OSS, an R-squared of 44% implies that 44% of the variance in OSS is explained by the independent variables also.

## Discussion

### Gender diversity (H1)

The results ( $\beta=0.063$  (for ROA),  $\beta=1.570$  (for OSS)) show a positive impact on the financial sustainability of both ROA and OSS with strong levels of statistical significance ( $p$  value = 0.011 for ROA and  $p$  value = 0.030 for OSS) and the results confirm that gender diversity in the board management has a significant positive impact on financial sustainability. This is consistent with [56, 66], which confirmed that the presence of women on boards of directors enhances performance effectiveness, especially in microfinance institutions, and attracts clients, also for Siele [96] that gender diversity on boards of directors improves practical performance and increases productivity, and the Githaiga & Kosgei [35] confirmed that gender diversity is positively related to sustainability reports.

On the other hand, the studies by [7, 103, 109] results indicates that there is no statistically significant relationship between governance mechanisms, gender diversity,

and financial sustainability. While Pucheta-Martínez and Gallego-Álvarez [65] found that women on boards have a positive impact on corporate performance. Also, the studies conducted by Saleh et al. [92] and Mansour et al. [62–64] present a positive and significant impact of gender diversity on firm performance, but under the moderating effect of CSR, the results go from positive and not significant to positive and significant. Mansour et al. [62–64] present a positive and insignificant impact of gender diversity on firm performance.

Having gender diversity on the board of directors supports greater visibility of sustainability issues, as women are typically more interested in contributions that highlight their performance in society and business.

From the Resource Dependence Theory perspective, gender-diverse boards to enhance the firm's access to special skills, perspectives, and external networks, strengthening decision-making and strategic resilience that drive sustainable results. Stakeholder Theory also supports this finding by suggesting that female board members tend to prioritize social responsibility, ethical governance, and stakeholder interests, which promote organizational reputation and long-term financial stability.

### Board size (H2)

The results of  $\beta=-0.001$  (for ROA),  $\beta=0.015$  (for OSS) but the effect is not statistically significant ( $p$ -value 0.05),

and therefore the results do not support the second hypothesis (H2), as board size did not show a clear effect on financial sustainability.

The results of the current study did not align with the findings of previous studies, which generally indicated a positive relationship between board size and sustainability performance or financial performance, for example, the study by [95] also upheld a good relationship between board size and CSR reporting, also Zureigat et al. (2023) reported that board size is positively correlated with financial performance, while a recent paper by Zureigat et al. [111] reported that board size positively and importantly affects financial performance.

Also studies of [27] and [103] show that board size has a significant impact on financial sustainability.

Naturally, the size of the board of directors supports sustainability issues, as previous studies have indicated. However, in the current study, the small sample size and the number of observations may be the reason for the unclear results.

The results showed that board size does not affect the financial sustainability of companies listed in Palestine and Jordan. This can be explained by the fact that a larger number of board members does not necessarily translate into greater effectiveness in oversight or strategic decision-making, given the nature of small and medium-sized markets in both countries, the dominance of family or concentrated ownership, limited resources, and a weak corporate culture related to sustainability and disclosure. According to agency, resource, stakeholder, and legitimacy theories, the impact of board size is only evident when boards are effective, possess diverse expertise, and are capable of influencing financial decisions. This is not always the case in the Palestinian and Jordanian corporate environment, which explains the lack of a statistical relationship between board size and financial sustainability.

### Board meetings (H3)

Results: B 0.004 (ROA),  $\beta - 0.069$  (OSS).

There exists a significant positive and statistically significant contribution ( $p$  value 0.000) to ROA but also a significant negative contribution ( $p$  value 0.005) to OSS and so the results partly supported the third hypothesis (H3) because the frequency of board meetings is shown to support profitability (ROA), but may have an adverse effect on full feasibility (OSS).

The results of the current study are partly in line with the results of previous studies; for example, the study by Nguyen & Huynh [74] supports the existence of a positive effect of the number of board meetings on the financial performance of companies, as the frequency of meetings was identified as a factor that has a positive impact on

financial performance, and the study by Hamad, Mhammad, Mahmood, & Khzir [39] reports a different result, by finding that increasing the frequency of board meetings may negatively impact ROA.

Also, Nasution et al., [72], Arora et al., [10] confirm that frequent board meetings are associated with improved financial performance and sustainability, they provide a platform for strategic discussions, risk management, and decision-making, which are crucial for navigating financial challenges, especially during crises like the COVID-19 pandemic; in the other word, these studies provide a significant positive impact of Board Meetings on financial performance and sustainability.

Thus, based on these conflicting and different findings, we can state that too many meetings could result in the lack of efficiency in the decision-making process, and ultimately leading to the financial instability over long term.

According to Agency Theory philosophy, the frequent board meetings strengthen monitoring and control the management and reduce agency costs and improving operational efficiency, which explains the positive association with profitability (ROA). However, Stewardship Theory suggests that excessive oversight or too many meetings may interfere with managerial autonomy and strategic focus, leading to inefficiencies and lower long-term sustainability (OSS).

### CEO duality (H4)

Results:  $\beta = -0.010$  (for ROA),  $\beta = 0.350$  (for OSS). According to the results, the effect is not statistically significant ( $p$  value  $> 0.05$ ), and this indicates that the results do not support the fourth hypothesis (H4), as CEO duality did not have a significant effect on financial sustainability.

The results of previous studies were mixed, for example, the study by [95] found a positive relationship between board size and leadership duality with sustainability reporting, and Alia & Mardawi [6] found a negative relationship between CEO duality and social responsibility disclosure; in other words, the results of the current study were not statistically significant and were not consistent with previous studies.

Also, CEO duality, where the CEO also serves as the board chair, is generally found to have a negative impact on financial performance. Studies indicate that separating these roles can improve financial outcomes by enhancing board independence and reducing conflicts of interest [11, 50].

Naturally, CEO duality does not affect sustainability or harm performance, as duality can deprive companies of dual oversight over their operations. In other words, governance rules stipulate that the person who executes

a business should not be the same person who oversees it, which could increase the chances of corruption and fraud.

The results indicate that dual CEO positions did not have a significant impact on the financial sustainability of listed companies in Palestine and Jordan. This can be explained by the nature of the markets in both countries, characterized by concentrated ownership and a predominantly family-run business structure. This places real power in the hands of major shareholders, not the CEO, thus mitigating the expected impact of power concentration under agency theory. Furthermore, the limited market size and strong social and institutional oversight reduce the likelihood of opportunistic behavior, resulting in a limited impact of dual leadership. Additionally, financial sustainability in this environment is often determined more by operational and economic factors than by governance mechanisms, and board committees, such as the audit and risk committees, may compensate for any weaknesses arising from dual leadership. According to agency, stakeholder, legitimacy, and resource theories, the lack of strong pressure from the legislative environment or stakeholders on sustainability practices explains the absence of a correlation between dual CEO positions and financial sustainability in the studied sample.

#### **Board independence (H5)**

Results:  $\beta = -0.013$  (for ROA),  $\beta = -1.488$  (for OSS), the results of the analysis for the independence variable indicate that the effect is not significant on ROA, but it has a negative and significant effect on OSS ( $p$  value = 0.000), and therefore the results do not support Hypothesis 5 (H5) and suggest that board independence may negatively affect overall sustainability (OSS).

So, these results are consistent with a study by [23, 103] and Vafeas, (2000), that concludes board independence has a negative impact on financial sustainability.

Board independence is positively associated with financial sustainability and performance. Independent directors can provide unbiased oversight and strategic guidance, which enhances financial reporting quality and reduces performance variability [11, 19, 90].

Based on the current results and the results of previous studies, it can be said that the independence of members does not contribute to achieving sustainability or influencing profitability. In other words, it appears that independent members do not play an effective or influential role in companies.

The negative impact of board independence on financial sustainability in the Palestinian and Jordanian contexts indicates that independence in these markets does not function as theoretically expected. This is due to the prevailing governance structure, characterized by formal

representation, limited transparency, dominance by major shareholders, and a weak regulatory environment. Under these conditions, independent board members do not become a source of value or a strategic asset for the company; rather, their presence may become an element of increased administrative complexity without contributing effectively to enhancing financial sustainability.

#### **Academic background (H6)**

Results:  $B = 0.007$  (ROA),  $\beta = 1.209$  (OSS). Based on the available results, the effect is significant and statistically valid on OSS ( $p$  value 0.003), but is not valid on ROA, and the available results partially corroborate the 6th hypothesis (H6), that academic background plays ameliorative role in OSS, but not in ROA.

The results of the current study are consistent with the results of previous studies in a similar context; for example, in the field of financial performance, the study by Nguyen & Huynh [74] indicates that the academic background associated with fields such as finance and accounting contributes positively to the financial performance of companies, and studies such as [12, 34], Tan et al. [100] established that higher level of board members are associated to better institutional performance, ultimately, Tjahjadi, Soewarno, & Mustikaningtyas [101] confirmed that boards with low education are associated with poor performance in environmental sustainability.

According to the results of the current study, it is clear that an academic background will support long-term sustainability opportunities, but it will not necessarily enhance profitability, because the scientific knowledge of members will support effective strategic decision-making.

The results showed that the academic background of board members had a positive impact on financial sustainability, reflecting the importance of knowledge and skills acquired through higher education in supporting corporate financial performance. In the Palestinian and Jordanian contexts, where companies face significant economic and political challenges such as capital controls and market volatility, academically qualified board members play a vital role in making informed financial and strategic decisions and improving governance and transparency practices. Theoretically, this finding supports human capital theory, which asserts that academic knowledge enhances decision-making efficiency; agency theory, which suggests that academically qualified members mitigate agency problems and effectively oversee management; and resource and capacity theory, which considers academic knowledge a strategic resource that contributes to improved long-term financial performance. Therefore, having board members with a strong academic background is a supporting factor for corporate

financial sustainability in complex environments like Palestine and Jordan.

#### Multiple memberships (H7)

Results:  $\beta=0.077$  (for ROA),  $\beta=0.796$  (for OSS). The results indicate that there is a positive and statistically significant effect on both ROA and OSS ( $p$  value  $<0.05$ ), and this confirms that the results support the seventh hypothesis (H7), so multiple board memberships have a significant positive impact on financial sustainability.

The result of the present study is consistent with the study of Jahan et al. [44] who argue that prestigious and multiple memberships positively impact corporate performance and support long-term sustainability.

On the other side, multiple board memberships can provide directors with broader perspectives and networks, potentially benefiting the firm. However, they may also lead to conflicts of interest and reduced focus on any single board's responsibilities, which can negatively impact financial sustainability [61].

Multiple Memberships will support sustainability and profitability because they reflect the diversity of expertise on the board, and thus companies will benefit from the diverse experiences of members.

The results showed that multiple board memberships have a positive impact on financial sustainability. Members holding multiple board positions across different companies gain exposure to diverse practices and innovations, and benefit from varied management experiences and approaches. In the Palestinian and Jordanian contexts, where companies face significant operational and financial challenges, this diversity can contribute to broadening the knowledge base, enhancing the ability to make better financial and strategic decisions, and improving oversight and governance mechanisms. From a theoretical perspective, this finding supports Social Capital Theory, which posits that multiple relationships and networks promote knowledge sharing and improved performance, and Organizational Learning Theory, which asserts that experiences gained from different environments contribute to the adoption of more effective and sustainable financial practices.

#### Committees effectiveness (H8)

Results:  $\beta=0.000$  (for ROA),  $\beta=0.026$  (for OSS). The results indicate that the effect is positive and statistically significant only on OSS ( $p$  value  $=0.045$ ), as the results partially support the eighth hypothesis (H8), so the effectiveness of committees enhances OSS, but does not affect ROA.

According to previous studies, the results are mixed; the results of the current study agreed with each other and contradicted each other; for example, the study of

PVVS & Palaniappan [85] indicates that the effectiveness of the audit committee positively affects the financial performance of the company, and the study of Vera-Munoz [106] and Abbott et al. [1] also confirms that an effective audit committee requires qualified and independent members to achieve a positive impact on governance and financial performance, but, the Alqatamin [8] study indicated that the frequency of audit committee meetings (as an indicator of its effectiveness) has a positive, but not statistically significant, effect on financial performance.

Committees' effectiveness naturally affects sustainability because they provide oversight and accountability services while not contributing to profit-related matters, so there is no impact on profitability.

The results showed that the effectiveness of board committees has a positive impact on financial sustainability. Specialized committees, such as the audit committee and the risk committee, contribute to strengthening internal controls and improving the quality of financial and strategic decision-making. In the Palestinian and Jordanian contexts, where companies face significant financial and regulatory challenges, effective committees enable better oversight of financial resources, mitigate risks, and ensure compliance with accounting standards and good governance practices. Theoretically, this finding supports agency theory, which posits that specialized committees reduce agency issues between management and shareholders, and corporate governance theory, which argues that effective committees enhance transparency and accountability and contribute to the company's financial sustainability.

#### Foreign ownership (H9)

Results:  $\beta=-0.012$  (for ROA),  $\beta=0.673$  (for OSS). The results for this variable are mixed, a positive effect appeared on OSS ( $p$  value  $=0.053$ ), but a negative effect on ROA and it is not significant for both, so the results do not support the ninth hypothesis (H9), so foreign ownership may not contribute to enhancing financial sustainability.

The results of the current study agreed with some studies, as previous studies showed some contradiction in the results; for example, the study of Benfratello & Sembenelli [17] confirmed that foreign ownership did not appear to have a significant impact on productivity, while the study of Bentivogli & Mirenda [18] discovered that foreign-owned companies are characterized by greater size, higher profitability, and better financial stability.

Foreign ownership can positively impact financial performance by introducing new capital, expertise, and global best practices. This is supported by studies showing that foreign ownership enhances firm value and

financial sustainability in various markets, including Saudi Arabia and Korea [54, 71, 102].

Also, foreign ownership was found to positively influence firm performance, aligning with the resource dependence theory, which posits that external resources can enhance a firm's capabilities [86].

In more closed economies such as Palestine and weaker economies such as Jordan, foreign ownership may not contribute significantly to corporate performance, as the economic and investment environment is not conducive to foreign investors.

The findings suggest that foreign ownership does not affect the financial sustainability of companies. This may reflect the nature of the Palestinian and Jordanian markets, which are characterized by relatively high levels of local ownership and local laws that limit the effective influence of foreign shareholders in day-to-day decision-making. Furthermore, local companies may rely more heavily on internal management expertise and local practices in managing financial resources, thus reducing the actual role of foreign ownership in influencing financial sustainability. From a theoretical perspective, this finding supports contextual dependence theory, which asserts that the impact of ownership structure is determined by the economic and regulatory environment, and resource-based theory, which posits that the impact of any resource, including foreign ownership, depends on the company's ability to utilize it internally to achieve sustainable financial performance.

#### **Concentration ownership (H10)**

Results:  $\beta = 0.041$  (for ROA),  $\beta = -0.384$  (for OSS). The results indicate that there is a positive and statistically significant effect on ROA ( $p$  value = 0.015), but the effect is negative and not significant on OSS, and therefore the results not support the tenth hypothesis (H10) Partially, so ownership concentration positively impacts profitability (ROA), but may have a negative impact on overall sustainability.

Previous studies did not address financial sustainability directly, but were related to related topics, and the results were mixed. For example, the study by Raimo, Vitolla, Marrone, & Rubino [88] indicate that institutional ownership positively affects the quality of integrated reporting, and the Jensen & Berg [48] study indicates that ownership concentration plays a role in companies' adoption of integrated reporting compared to traditional sustainability reporting (TSR).

According to Yuen, Liu, Zhang, & Lyu [108], the effect of ownership concentration on corporate reporting quality may be negative, and ownership concentration also

negatively affects the level of environmental disclosure from the point of view of [59].

Ownership concentration improves profitability in the short term, but it can deprive companies of diversified investment opportunities, which can harm long-term sustainability. Therefore, it is essential that ownership concentration be at a level that does not harm sustainability, and investment and the purchase of company shares should be encouraged.

The results showed that the impact of ownership concentration on return on assets was positive, while it had no significant impact on operational self-sufficiency, although the signal was negative. This can be explained by the fact that companies with concentrated ownership tend to make more decisive and focused investment decisions, which increases asset utilization efficiency and reflects better financial performance (ROA). Regarding operational self-sufficiency, ownership concentration may not necessarily translate into independent operational capability or flexible cash management, especially in complex economic environments like Palestine and Jordan, where business owners face financial and operational challenges that are not solely dependent on ownership structure. From a theoretical perspective, this finding supports the agency theory, which suggests that concentrated owners oversee management more effectively and enhance financial performance, while the resource-based view indicates that ownership concentration enhances asset management but is insufficient to guarantee operational independence or operational self-sufficiency.

#### **Institutional ownership (H11)**

Results:  $\beta = -0.014$  (for ROA),  $\beta = -1.000$  (for OSS). There is a negative and statistically significant effect on OSS ( $p$  value = 0.009), but not significant on ROA, then the explanation is that the results do not support the eleventh hypothesis (H11) because the institutional ownership has a negative impact on OSS.

The results of the current study differed with the results of previous studies such as the study of [14, 88, 105], as these studies addressed various topics primarily related to corporate value and long-term performance, and their results indicated that institutional ownership enhances long-term financial performance.

Under normal circumstances, institutional ownership enhances long-term financial performance, but the results were surprising in our case study. This may be due to the economic and political situation of Palestine, and Jordan is also considered a developing country.

The results showed that corporate ownership has a negative impact on operational self-sufficiency, with the negative signal indicating that a higher percentage of

corporate ownership is associated with a reduced ability for the company to finance its operations from its own resources. In the Palestinian and Jordanian contexts, companies face significant financing and operational challenges due to economic and political constraints. This makes corporate-owned companies more reliant on external funding sources or owner guidance in managing operations, thus limiting their operational independence. Theoretically, this finding supports agency theory, which suggests that centralized control by corporate owners reduces management freedom; the resource-based view, which posits that the impact of ownership on performance depends on how resources are utilized; and contextual dependence theory, which highlights that the effectiveness of corporate ownership is influenced by the economic and regulatory environment.

**Palestine and Jordan comparison**

This section presented an additional regression analysis that aims to test the impact of a set of variables related to Board of Directors’ Characteristics and Ownership Structure on both financial performance (measured by return on assets (ROA)) and operational sustainability (Operating Self-Sufficiency—OSS) using a robust regression model, with a focus on comparing the results between Palestine and Jordan (Table 7).

In Palestine, some variables appear to have a greater and more pronounced impact, such as operational efficiency of assets, academic background, foreign ownership, and company size. In Jordan, governance variables such as board meetings, independence, and leverage clearly have an impact.

Divergent Effects: Some variables have opposite effects between the two countries, such as ownership concentration (positive in Jordan and negative in Palestine).

The study results also indicate clear differences between the impact of corporate governance mechanisms in Jordan and Palestine on financial performance and operational sustainability, while the results in Palestine showed a higher level of model explanation (R-squared of 60% for ROA and 66% for OSS); the model in Jordan provided relatively less explanation (40% and 42%, respectively); this indicates that the selected variables are more influential in the Palestinian context despite the small sample size. Another important finding is that asset efficiency and firm size were common factors with a significant positive effect in both countries, confirming their importance in enhancing performance regardless of the local context.

The reason for some differences in results between the two countries can be attributed to the uniqueness of the regulatory and economic environment in each country; these differences highlight the need to understand the various constraints, as institutional conditions, shareholder behavior, and local regulations play a significant

**Table 7** Regression Analysis for Jordanian and Palestinian companies

Variables	Jordan		Palestine	
	(OSS) Coefficient (β)	(ROA) Coefficient (β)	(ROA) Coefficient (β)	(OSS) Coefficient (β)
Gender Diversity	1.552*	0.088***	0.077*	1.887
Board Size	-0.024	-0.003**	-0.001	0.135***
Board Meetings	-0.102***	0.002	0.001	-0.019
CEO Duality	(omitted)	(omitted)	-0.019**	0.307
Independency	-1.041***	0.018	0.229***	1.043
Academic Background	1.296**	0.021	0.022	2.736***
Multiple Memberships	0.53	0.064***	(omitted)	(omitted)
Committees Effectiveness	0.048**	0.002**	0.004***	-0.03
Foreign Ownership	-0.19	-0.019	0.032	5.140***
Concentration Ownership	0.253	0.094***	-0.103**	-0.629
Institutional Ownership	-0.693	-0.026*	0.039	-2.238
Financial Leverage	0.607**	-0.081***	-0.087***	0.126
Liquidity	0.024	0.007***	0.003*	0.014
Asset Efficiency	0.022	0.011**	0.022***	0.099***
Firm Size	1.723***	0.044***	0.013***	1.450***
R-squared	42%	40%	60%	66%
Number of Observations	504	504	174	174

\* Significant at the 10% level ( $p < 0.10$ ), \*\* Significant at the 5% level ( $p < 0.05$ ), \*\*\* Significant at the 1% level ( $p < 0.01$ )

Multiple Memberships and CEO Duality are omitted because of collinearity

role in shaping the effectiveness of corporate governance (Table 8).

**Conclusion remarks**

The results indicated that the gender diversity has a positive and significant impact on ROA and OSS as a diversified board promotes better decision-making and ultimately better financial results, and corroborate previous work highlighting the benefits of female representation on governance for performance and sustainability improvement.

Nevertheless, board size did not have a statistically significant effect on financial sustainability, even in contrast to previous work reporting that larger boards are associated with higher performance. Similarly, CEO duality did not have a statistically significant effect indicating that the dual role of CEO and board chairperson may not necessarily impact financial outcomes.

The frequency of board meetings yielded mixed outcomes that positively enhanced profitability (ROA) and negatively environmental sustainability (OSS). This implies that although frequent meetings may increase short-term profitability, they may ultimately cause inefficiencies that erode long-term sustainability.

Board independence showed a negative and significant effect on OSS but no significant effect on ROA; this therefore suggests that the potentially protean nature of corporate boards may mean that highly idiosyncratic

boards may not always fit in with the level of operational self-sufficiency necessary for sustained long-term survival. On the other hand, the academic background of board members led to a positive effect of OSS but exerted no significant effect on ROA, which points to the significance of governance expertise.

Multiple board memberships positively and significantly impacted both ROA and OSS; this suggests that members with diverse affiliations bring valuable expertise and networks that enhance financial sustainability. Furthermore, the ability of board committees was positively related to OSS, thereby supporting the function of committees in mediating effective governance practices.

Ownership structure yielded mixed results are concentrated ownership had a positive effect on profitability (ROA) but did not have a statistically significant effect on OSS, also suggesting that concentrated ownership, even by large shareholders, may focus on short-term financial performance rather than long-term sustainability. Foreign ownership while positively influencing OSS did not show a significant impact on ROA. Institutional ownership also exhibited no significant effect on financial sustainability, reflecting the varied interests and strategies of institutional investors.

Based on the results of the study and its analysis, the following recommendations can be made to contribute to enhancing financial sustainability and improving corporate performance:

**Table 8** Hypotheses summary table

Hypothesis no.	Independent variable	Dependent variable	Type of effect	Significance level	Result	Direction
H1	Gender Diversity	ROA	Effect	$p < 0.05$	Accepted	Positive
		OSS	Effect	$p < 0.05$	Accepted	Positive
H2	Board Size	ROA	Effect	$p > 0.05$	Rejected	No effect
		OSS	Effect	$p > 0.05$	Rejected	No effect
H3	Board Meetings	ROA	Effect	$p < 0.05$	Accepted	Positive
		OSS	Effect	$p < 0.05$	Rejected	Negative
H4	CEO Duality	ROA	Effect	$p > 0.05$	Rejected	No effect
		OSS	Effect	$p > 0.05$	Rejected	No effect
H5	Board Independence	ROA	Effect	$p > 0.05$	Rejected	No effect
		OSS	Effect	$p < 0.05$	Rejected	Negative
H6	Academic Background	ROA	Effect	$p > 0.05$	Rejected	No effect
		OSS	Effect	$p < 0.05$	Accepted	Positive
H7	Multiple Memberships	ROA & OSS	Effect	$p < 0.05$	Accepted	Positive
H8	Committees Effectiveness	ROA	Effect	$p > 0.05$	Rejected	No effect
		OSS	Effect	$p < 0.05$	Accepted	Positive
H9	Foreign Ownership	ROA & OSS	Effect	$p > 0.05$	Rejected	No effect
H10	Concentration Ownership	ROA	Effect	$p < 0.05$	Rejected	Positive
		OSS	Effect	$p > 0.05$	Rejected	No effect
H11	Institutional Ownership	ROA	Effect	$p < 0.05$	Rejected	Negative
		OSS	Effect	$p < 0.05$	Rejected	Negative

- Companies should promote women's representation on boards of directors, because the results showed that gender diversity has a positive impact on both return on assets (ROA) and operational self-sufficiency (OSS), meaning that gender diversity enhances decision-making and improves financial performance and sustainability in the long term.
- Companies should balance the number of board meetings, as increasing the number of meetings may enhance short-term profitability (ROA) but may negatively impact operational self-sufficiency (OSS).
- Companies should review the degree of independence of the board of directors, because the results have shown that excessive independence may negatively affect operational self-sufficiency (OSS) because excessive independence may reduce coordination between board members and executive management affecting the efficiency of operations.
- Companies should appoint board members with strong academic backgrounds, especially in areas such as finance and accounting, as results have shown that these backgrounds enhance operational self-sufficiency (OSS) because academic expertise contributes to improving the quality of strategic decisions and enhancing financial sustainability.
- Companies should encourage and support board members to participate in other board memberships, as results show that multiple memberships enhance both profitability (ROA) and operational self-sufficiency (OSS) because the multiple memberships provide diverse expertise and networks that enhance financial performance and sustainability.
- Companies should enhance the effectiveness of subcommittees, such as the Audit Committee and the Governance Committee, as results showed that the effectiveness of these committees enhances operational self-sufficiency (OSS) because effective committees contribute to improving internal control and strategic decision-making.
- Companies should review their ownership structure, especially with regard to ownership concentration and foreign ownership, as the results showed that ownership concentration enhances profitability (ROA) but may not have a positive impact on operational self-sufficiency (OSS). This can be explained by saying that focusing on foreign ownership may enhance operational sustainability, but the balance between short- and long-term interests must be taken into account.
- Companies should enhance transparency in disclosing financial and non-financial information, including sustainability reports, because transparency

enhances investor confidence and improves the company's reputation, which contributes to enhancing financial sustainability.

### Research limitations

- The study relies solely on secondary data obtained from companies' annual reports. Any errors, omissions, or lack of disclosure in these reports may affect the reliability of the findings.
- The analysis includes 113 companies listed on the Palestine Exchange (PEX) and Amman Stock Exchange (ASE). The results, therefore, may not be fully generalizable to other markets, countries, or non-listed firms.
- The research covers the period 2018–2023. Findings may vary if extended to other periods, particularly given economic and political volatility in Palestine and Jordan.

### Practical implications

- Provides boards of directors with clear insights into governance mechanisms that foster long-term financial sustainability.
- Encourages companies to evaluate and restructure ownership patterns to achieve a balance between stability and effective oversight.
- Equips investors with governance-based indicators to assess financial sustainability prior to making investment decisions.
- Offers evidence-based guidance to capital market authorities to strengthen governance regulations and ensure companies' sustainable financial performance.

### Theoretical implications

- Expands corporate governance and sustainability literature by empirically testing the relationship between board characteristics, ownership structure, and financial sustainability in emerging economies.
- Employs a panel data methodology using pooled OLS regression, which can serve as a reference framework for future governance-related studies.
- Supports existing governance theories that link board effectiveness and ownership structure to sustainable performance, while contextualizing them within Palestinian and Jordanian markets.

## Abbreviations

OSS Operational Self-Sufficiency

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## Author contributions

Ghassan Daas contributed to the study by developing the methodology, Amneh Hardan and Abdullateef Abudiak collected the data, performed the analysis, and conducted the literature review. Abdunaser nour contributed to writing the introduction and conclusion sections and proofreading of the manuscript and submitted the original manuscript. All authors reviewed and approved the manuscript.

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## Data availability

No datasets were generated or analyzed during the current study.

## Declarations

### Ethics approval and consent to participate

Not applicable.

### Consent for publication

This study complies with ethical research standards and was exempted from the requirement for ethical approval by the Ethics Committee at An-Najah National University.

### Competing interests

The authors declare no competing interests.

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