

IMPACT OF BOARD GENDER DIVERSITY ON THE FINANCIAL PERFORMANCE OF THE MANUFACTURING AND SERVICE COMPANIES LISTED ON THE AMMAN STOCK EXCHANGE

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Abstract

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This study seeks to explore the significance of board gender diversity and its impact on the financial performance of the manufacturing and service companies listed on the Amman Stock Exchange (ASE) between 2013–2018. Prior studies have determined several benefits of female presence in the boardroom. However, gender diversity's impact on financial performance is still unclear due to the mixed findings regarding this relation. In addition, studies about gender diversity roles in Jordanian companies' performance are missing in the literature. Hence, in order to fill this gap, data from the listed companies was extracted from the ASE website with a total sample of 1088 companies as follows: 294 manufacturing companies (27%) and 794 service companies (73%). The results showed more males (96.2%) than females (3.8%) on the board of directors among the listed manufacturing and service companies. The manufacturing and service companies reported a mean Tobin's Q value of 1.044 (SD = 2.164) and 1.304 (SD = 3.554), respectively. Results show that the linear regression shows that board gender diversity has a statistically significant impact on Tobin's Q ($p = 0.043$) and ROA ($p = 0.062$). Therefore, there is a need for both the manufacturing and service companies to consider increasing the number of female members on the board for better financial performance.

Keywords: Board of Directors, Gender Diversity, Firm Performance

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1. INTRODUCTION

The recently published Global Gender Gap Report (World Economic Forum, 2021) has shown some slow but rather steady improvements in recent years

with regard to gender diversity. Although the Middle East and North Africa (MENA) region remains the area with the largest gap, Jordan, however, has shown a rapid improvement in this area as the report showed that Jordan has as many women

managers as men. However, the gender diversity gap is still a major issue in the country as women only participate in 15.6% of the labor force. Male dominance in the industry has been proven to cause missing opportunities for innovation, competitive advantages, and success (Haque, Faizan, & Cockrill, 2017; Flabbi, Macis, Moro, & Schivardi, 2019; Struthers & Strachan, 2019).

In other spectrums, patriarchal structure and cultural dogma is another challenge for Jordanian females' career progress and job opportunities which can also hinder the presence of a female on the company's board of directors (BOD), especially in the male-dominated industry.

The company's performance under board gender diversity has been carried by two main points of view: the first is the moral ground of including the under-representative females in the BOD and achieving equality. The second is economical which exerted from the missing talented pool resulted from excluding females. However, evidence from prior literature about the impact of gender diversity in the boardroom has been contradicted so far. The reason for the inconsistent results can be explained by the multifaceted aspects of gender diversity in societies. For example, different countries, cultures, populations, religions, regimes, ownership structures have all been contributed to this complicated issue (Morris, Sodjahn, & Boubacar, 2021).

In this regard, the perplexing results of the female role in the boardroom may necessitate exploring this issue from a narrow perspective. In other words, developed countries show high inclusion of females in the economy compared to developing countries (World Economic Forum, 2021). This hinders any generalization attempts of their results on less developed countries. Thus, this study seeks to validate the impact of board gender diversity on the financial performance of the manufacturing and service companies listed on the Amman Stock Exchange (ASE) between 2013–2018. Consequently, this study theorized that the absence of gender diversity in Jordanian companies' boards may impede the rapid production process and profit generation schemes and hence the need for deeper scrutiny. Accordingly, data from the ASE website were extracted for the quantitative statistical. A total of 1088 companies were included, 294 manufacturing companies (27%) and 794 service companies (73%). The results are expected to determine the impact of gender diversity on the performance of the manufacturing and service companies in Jordan.

The rest of this paper is structured as follows. In the next section, we furnish the most recent literature regarding the relationship between gender diversity and companies' financial performance. Section 3 deals with the study methodology. Section 4 presents the results of the data analysis, followed by a discussion in Section 5. Section 6 introduces the concluding remarks.

2. LITERATURE REVIEW

Previous researchers, such as Carter, D'Souza, Simkins, and Simpson (2010), have validated that various elements around the composition of the board of directors have either direct or indirect implications on the corporation's performance. Some of the listed factors that influence the board's

performance include age (Chams & García-Blandón, 2019), size, and independence (García-Ramos & Díaz, in press). Notably, Lückerath-Rovers (2013) identified that the presence of females on the boards comes with various benefits to the companies.

The financial performance of a company is determined by several indicators that do not entirely descend from the board of directors. The persistent notion has been that the performance of a company is almost solemnly determined by the managerial and the overall organizational structure (Maduenyi, Oke, Fadeyi, & Ajagbe, 2015; Ogbo, Chibueze, Christopher, & Anthony, 2015). However, a study conducted by Jibao and Kai (2010) in China has reported otherwise. According to Jibao and Kai (2010), the level of marketization and technological advancement were some of the main determinants of a company's success. Other studies which were conducted in Jordan had shown that organizational culture and values have a significant impact on organizational performance (Al-Tit, 2017). Therefore, it is evident that the performance of an organization is governed by diverse factors which descend from the directives of the board.

Despite the effect of all other variables on the company's performance, the board of directors still stands at the center of the company's operations. The board of directors is usually composed of the stakeholders whose mandate is to provide strategic guidance of the company's activities (Merendino & Melville, 2019). In all types of organizations, the board holds the responsibility of ensuring that the companies' operations are in the straight course (Martin & Herrero, 2018). Functions, such as marketing, organizational structure, cultural and other models of operation, depend on the directives from the board of directors.

Due to such crucial significance, the nature, composition, integrity, and competency of the board of directors will highly influence the performance of the company. For instance, Al-Saidi (2021) and Freihat, Farhan, and Shanikat (2019) all expressed that the performance of the board is also significantly influenced by ownership concentration, number of board meetings, CEO duality, the board size, and board independence. Nonetheless, other factors which may influence a company's performance, such as the gender diversity in the boards, are yet to be investigated in the Jordanian context.

Various studies have been conducted to determine whether inducing diversity in the boardroom can directly impact the company's performance. The main findings clearly indicated a positive impact in many areas of the company's governance. For example, females in the boardroom have proven to induce better monitoring, better disclosure, and mitigating free-riding problem (Wang, 2020). In addition, female inclusion in BOD can also enhance the effectiveness of corporate governance roles and increase social responsibility, especially during disasters (Wang et al., 2021; Marashdeh, Alomari, Khataybeh, & Alkhataybeh, 2021). Good governance was also another area where the role of a female appeared to be effective, especially in the audit committee (Morris et al., 2021). According to Adams and Ferreira (2009), the number of meetings, meetings attendance rate, and the change of replacing underachieving CEOs are all improved under more diverse boards.

Despite the appeal of considering the role of a female in the BOD could result in better performance. However, the claim of the female role in improving financial performance has yet to be proven (Bajaher, Thabet, Alshehri, & Alshehri, 2021). At first glance, it is tempting to link the enhancement of corporate governance and the richness of the skill pool provided by female participants in the BOD with improving financial performance. Nevertheless, the overall quality of the company's governance can absorb the actual impact of the female role in the boardroom. Additionally, other researchers have argued that a large BOD can create more conflicts and hindering the decision-making process.

Worldwide, a study conducted by Mahadeo, Soobaroyen, and Hanuman (2012) in Mauritius reported that females are generally poorly represented in the boards which hinder the attempt to reach a clear conclusion to whether their inclusion would inject some significant improvements on the corporation's performance. Some researchers have shown that the underrepresentation in Africa is highly influenced by the culture which can be described as a patriarchal society (Ouedraogo, 2018). Nonetheless, Mahadeo et al. (2012) painted an overall picture of a struggling performance index among the surveyed companies and with little clue of the significance of gender heterogeneity in an organizations' performance. Other developing countries have shown better representations of females in BOD which enable more insight into their role in the company's financial performance. Jabari and Mohamad (2021) and Hassan, Marimuth, Tariq, and Aqeel (2017) both found that gender diversity in the boardroom can lead to better performance in Malaysian and Indonesian companies. While Mentis (2011), Farag and Mallin (2016) have not found sufficient evidence to confirm this relation in Turkey, China. In addition, Endraswati (2018) found that females in BOD can negatively affect the financial performance of Indonesian companies. Similar conflicts in results were captured in developed countries, such as the US, the UK, Canada, Denmark, Spain, the Netherlands, and Australia (EmadEldeen, Elbayoumi, Basuony, & Mohamed, 2021; Nguyen, Locke, & Reddy, 2015).

This led Nguyen et al. (2015) to posit an interesting proposition about a possible breakpoint of 20% found in Vietnamese companies where female representation can begin to negatively affect performance indicating a non-monotonic relationship between female representation in BOD and performance. This possible link has gained more popularity as it was later confirmed by Nguyen, Nguyen, Nguyen, and Truong (2021) who found that when the corporate board reaches a threshold of three females, the effect of the female role in the boardroom begin to appear.

To inform this debate, Jordan as a developing country with a highly patriarchal structure society is expected to show a low representation of females in the boardroom. However, some recent regulations and inclusion plans may be responsible for enhancing female representation in the boardroom. To the authors' knowledge, almost no research has been conducted on the impact of females in the boardroom on financial performance in Jordan or in the MENA region. Thus, this study seeks to investigate whether female inclusion in the Jordanian companies' boardroom could be responsible for enhancing financial performance.

To achieve this purpose, we include service and financial companies listed on the ASE while excluding banks and insurance companies due to their unique structure.

3. RESEARCH METHODOLOGY

This study was conducted among the selected Jordanian companies based on quantitative methods to satisfy the main research question that is:

RQ: What is the impact of gender diversity specifically in the board of directors on financial performance?

As a first step, the current study sought to determine the nature of the association between board gender diversity and financial performance. The second step is to study a large group of companies, hence the need for a quicker analysis approach. The final step is to explore the impact for a generalized population (Muijs, 2010). This will be achieved by examining the impact of the studies' variables in a correlational manner and based on statistical methods.

The study sampled 128 out of 150 companies listed on the ASE between 2013–2018.

The study also collected secondary data from online databases. Therefore, the ASE was explored in the search for the companies' performance information based on their share capital as posted on the stock market. Importantly, this study relied on three significant elements: financial performance trends as demarcated by the financial indicators return on assets (ROA) and Tobin's Q for several years, the type of company manufacturing or service, the board composition in terms of gender (males or females dominance).

The ratios were calculated as follows:

$$ROA = \left(\frac{\text{Net income}}{\text{Total asset}} \right) \quad (1)$$

$$\text{Tobin's } Q = \frac{\text{Market value of assets}}{\text{Replacement value of assets}} \quad (2)$$

The collected data was then analyzed using SPSS Statistics version 25, mainly applying the linear regression model:

Model 1

$$Y = \beta_0 + \beta_1 X_1 + \varepsilon \quad (3)$$

where:

Y: Financial performance;

β_0 : Constant of association;

β_1 : Regression coefficient for gender;

X_1 : Gender (percentage of female directors to male directors);

ε : Error value in the model.

4. RESULTS

Descriptive statistics were performed to determine the financial performance of the listed companies. There are a total of 1088 companies year observations listed on the ASE between 2013–2018. The sample showed that there are 294 manufacturing companies, making 27%, and 794 making 73%. In addition, there

are more males (96.2%) than females (3.8%) on the board of directors in the service and manufacturing companies listed on the ASE. Similar to manufacturing companies, the service companies showed that the number of males exceeds females by over 90%.

Table 1 depicts the financial performance which was assessed based on ROA and Tobin's Q. The manufacturing companies reported a mean Tobin's Q value of 1.044 (SD = 2.164).

In comparison, the service companies have a mean value of 1.304 (SD = 3.554). Further, the manufacturing companies' median value for Tobin's Q is 0.8232, while that for the service companies was 0.7461, which is slightly lower than that of the manufacturing companies. Tobin's Q among the manufacturing companies shows a normal distribution curve with a skewness value of -0.630. However, Tobin's Q among the service companies is skewed (skewness = 71.08).

Table 1. Descriptive statistics of Tobin's Q by type of company

		<i>Companies</i>	<i>Statistic</i>	<i>Std. Error</i>	
<i>Tobin's Q</i>	<i>Manufacturing companies</i>	<i>Mean</i>	1.044334	.1275391	
		<i>95% Confidence interval for mean</i>	<i>Lower bound</i>	.793304	
			<i>Upper bound</i>	1.295365	
		5% Trimmed mean	.920522		
		Median	.823252		
		Variance	4.685		
		Std. Deviation	2.1644097		
		Minimum	-20.2281		
		Maximum	16.2685		
		Range	36.4966		
		Interquartile range	.8517		
		Skewness	-.630	.144	
		Kurtosis	47.763	.286	
		<i>Service companies</i>	<i>Mean</i>	1.304418	.1278589
	<i>95% Confidence interval for mean</i>		<i>Lower bound</i>	1.053426	
			<i>Upper bound</i>	1.555410	
	5% Trimmed mean		.957912		
	Median		.746100		
	Variance		12.637		
	Std. Deviation		3.5548440		
	Minimum		-3.5847		
	Maximum		80.7890		
Range	84.3737				
Interquartile range	.8602				
Skewness	17.081	.088			
Kurtosis	352.348	.176			

Table 2, which depicts the manufacturing companies, shows that the median is 0.253 while the service companies have a slightly higher median value of 0.390. The manufacturing companies' ROA values have a mean of -1.404 (SD = 12.622) while

the service companies have a mean ROA value of -0.513 (SD = 22.602). Further, the ROA values of both types of companies show skewness (-4.018 for the manufacturing companies, and -12.683 for the service companies).

Table 2. Descriptive statistics of ROA by type of company

		<i>Company</i>	<i>Statistic</i>	<i>Std. Error</i>	
<i>ROA</i>	<i>Manufacturing companies</i>	<i>Mean</i>	-1.4041	.74378	
		<i>95% Confidence interval for mean</i>	<i>Lower bound</i>	-2.8680	
			<i>Upper bound</i>	.0599	
		5% Trimmed mean	-.5733		
		Median	.2535		
		Variance	159.326		
		Std. Deviation	12.62245		
		Minimum	-127.90		
		Maximum	38.40		
		Range	166.29		
		Interquartile range	10.40		
		Skewness	-4.018	.144	
		Kurtosis	36.071	.286	
		<i>Service companies</i>	<i>Mean</i>	-.5130	.81348
	<i>95% Confidence interval for mean</i>		<i>Lower bound</i>	-2.1099	
			<i>Upper bound</i>	1.0839	
	5% Trimmed mean		.5417		
	Median		.3900		
	Variance		510.870		
	Std. Deviation		22.60244		
	Minimum		-483.28		
	Maximum		206.75		
Range	690.03				
Interquartile range	5.44				
Skewness	-12.683	.088			
Kurtosis	286.339	.176			

Pearson correlation was performed and the outcomes are shown in Table 3.

According to Pearson correlation, the percentage of the companies' gender distribution has an impact on the companies' financial performance ($p = 0.022$).

Linear regression analysis was also performed using SPSS to confirm the significance of the board gender composition on the companies' performance based on ROA. The outcomes of the analysis are shown in Table 4 depicting the model summary, ANOVA, and coefficients.

Table 4 shows the value of R^2 to be 0.004, which indicates that 0.4% of the dependent variables rely on the independent variables. The model provides a prediction of the association between board gender diversity and the companies' financial performance (ROA).

Table 4 also shows that the ratio of the male to female members of the board results in a significant level of the variance in the companies' financial performance based on the ROA measure $\{F(1,1059) = 4.08, p = 0.044, R^2_{Adjusted} = 0.003\}$.

Table 3. Correlation matrix (ROA)

	ROA	ROA	Ratio of female to male directors
Pearson correlation	ROA	1.000	.062
	Ratio of female to male directors	.062	1.000
Sig. (1-tailed)	ROA	.	.022
	Ratio of female to male directors	.022	.
N	ROA	1060	1060
	Ratio of female to male directors	1060	1060

Table 4. ROA analysis

Model summary				
Model	R	R-square	Adjusted R-square	Std. error of the estimate
1	.062 ^a	.004	.003	20.34868

a. Predictors: (Constant), Percentage of female to male directors.

b. Dependent variable: ROA.

ANOVA table for ROA					
	Sum of squares	Df	Mean square	F	Sig.
Regression	1689.229	1	1689.229	4.080	.044 ^b
Residual	438084.849	1058	414.069		
Total	439774.078	1059			

a. Dependent variable: ROA.

b. Predictors: (Constant), Percentage of female to male directors.

The regression coefficients of the model							
Model	Unstandardized coefficients		Standardized coefficients	t	Sig.	95.0% Confidence interval for B	
	B	Std. Error	Beta			Lower bound	Upper bound
(Constant)	-1.241	.670		-1.853	.064	-2.556	.073
Percentage of female to male directors	9.723	4.814	.062	2.020	.044	.277	19.169

a. Dependent variable: ROA

The model returns a statistically significant association with a coefficient value of 0.062. As such, a slight change in the ratio of female to male directors returns a 0.062 value change on the companies' performance measured based on ROA.

In Table 5, it is evident that the ratio of female to male directors has a statistically significant impact on Tobin's Q ($p = 0.043$).

Table 5. Correlation (Tobin's Q)

	Tobin's Q	Tobin's Q	Percentage of female to male directors
Pearson correlation	Tobin's Q	1.000	-.053
	Percentage of female to male directors	-.053	1.000
Sig. (1-tailed)	Tobin's Q	.	.043
	Percentage of female to male directors	.043	.
N	Tobin's Q	1061	1061
	Percentage of female to male directors	1061	1061

Table 6. Tobin's Q analysis

Model summary				
Model	R	R-square	Adjusted R-square	Std. error of the estimate
1	.053 ^a	.003	.002	3.2351351

a. Predictors: (Constant), Percentage of female to male directors.

b. Dependent variable: Tobin's Q.

ANOVA table for Tobin's Q					
	Sum of squares	Df	Mean square	F	Sig.
Regression	30.794	1	30.794	2.942	.087 ^b
Residual	11083.599	1059	10.466		
Total	11114.393	1060			

a. Dependent variable: Tobin's Q.

b. Predictors: (Constant), Percentage of female to male directors.

Regression coefficients							
Model	Unstandardized coefficients		Standardized coefficients	t	Sig.	95.0% Confidence interval for B	
	B	Std. Error	Beta			Lower bound	Upper bound
(Constant)	1.300	.106		12.207	.000	1.091	1.508
Percentage of female to male directors	-1.312	.765	-.053	-1.715	.087	-2.814	.189

a. Dependent variable: Tobin's Q.

The model summary shows an R^2 value of 0.003, which indicates a 0.3% weak outcome prediction expressed based on the study independent variables.

Table 6 contains the ANOVA table with a value of the probability of the model as 0.87, which indicates a statistically insignificant relationship. The ANOVA table shows that the ratio of female to male directors has a significant level of variance on companies' financial performance based on Tobin's Q $\{F(1,1059) = 2.942, p = 0.087, R^2_{Adjusted} = 0.002\}$.

The coefficient table shows a negative standardized coefficient value (-0.053) which indicates a negative relationship between the dependent and the independent variables. However, the probability value indicates an insignificant association between the ratio of female to male directors and the companies' performance based on Tobin's Q.

Further analysis was done using Pearson correlation to confirm the association between the ratio of female to male directors and the companies' performance based on Tobin's Q.

5. DISCUSSION

The results indicate an uneven gender composition in most manufacturing and service companies that are listed on the ASE. Some previous researchers, such as Al-Rahahleh (2017), stated that the most common challenge faced by Jordanian companies is that the composition of most of their boards is *ad hoc*, due to the fact that political factors and cultural factors play a major role in deciding who gets to sit on the board of most manufacturing and service companies. Indeed, most companies do not pay attention to the board's diversity (Al-Rahahleh, 2017). In addition, other researchers reported that most companies in Jordan are family-owned (Aribi, Alqatamin, & Arun, 2018; Bataineh, Abuaddous, & Alabood, 2018). Hence, personal relationships tend to affect most decisions (Nusair et al., 2012). In a study that aimed to find out the reason for the low representation of females in the boards' structure, Smith and Parrotta (2018) found that "the likelihood of enlarging the share of non-employee-elected female board members is

significantly smaller if one, two, or more females have sat on the board of directors" (p. 445). Therefore, we believe that Jordanian females' role in senior positions is not well realized despite the fact that females outnumber men in the population of Jordan. The vast number of females being underrepresented was notable. Between 2013-2018 females who occupied seats on boards of directors of service and manufacturing companies only accounted for about 3.8%. In Jordan, females actually represent 15.6% of all the labor force yet in publicly traded companies only 3.8% of females occupied a seat on the boards of directors.

The analysis also showed that the manufacturing and service companies have poor financial performance. According to a study conducted by Zeitun and Tian (2014) among Jordanian companies between 1989-2003 that aimed to determine the effect of capital structure on corporate performance, Jordanian companies have been recording poor financial performance for many consecutive years (Abadi, Hijazi, & Al-Rahahleh, 2016). Also, the negative ROA indicates the poor financial performance of the manufacturing and service companies in Jordan as reported on the ASE between 2013-2018. However, Alabdullah (2016) showed that the financial performance for Jordanian service companies is not only determined by factors such as gender, but also prone to the size of the company. Hence, there is a rather steady replacement of assets within the stated period between 2013-2018 indicating a strong link between leadership and financial performance. Overall, the study found poor financial performance in the manufacturing companies as indicated by Tobin's Q and ROA.

Board gender diversity plays a little role in the performance of the service and manufacturing companies listed on the ASE between 2013-2018. This outcome is only observable based on one ratio namely ROA. Although some researchers reported similar outcomes in other regions (Hassan et al., 2017; Jabari & Mohamad, 2021) some researchers have reported otherwise (Mentes, 2011; Nguyen et al., 2015; Farag & Mallin, 2016; Endraswati, 2018; Wang, 2020; EmadEldeen et al., 2021). According to previous studies conducted by Haque et al. (2017),

Flabbi et al. (2019), and Struthers and Strachan (2019), a more diverse board is vital for decision-making, and with proper decision-making comes proper management, and with proper management come revenues and profits for the company.

Tobin's Q showed that there is no association between board gender diversity and the financial performance of the manufacturing and service companies listed on the ASE. Other research studies have reported similar outcomes. For example, Farrell and Hersch (2005) stated that there is no link between corporate structure and gender balance in the board of directors. They analyzed approximately 300 companies of the fortune 500 between the year 1990-1999, and they came to a conclusion that most companies that have a high ROA had more appointments of females in their boardrooms yet they never made any significant improvement on the companies' performance.

6. CONCLUSION

This quantitative study explored the impact of board gender diversity on the financial performance of manufacturing and service companies listed on the ASE.

The study concluded that the number of male members on the board of directors surpasses the number of females, by 96.2%. Further, the current study finds a weak financial performance in both the service and manufacturing companies listed on the ASE. Both ROA and Tobin's Q showed poor performance for the service and manufacturing

companies listed on the ASE between 2013-2018. The ratio of female to male members of the board of directors does not have any significant impact on the financial performance of the companies based on Tobin's Q and ROA values.

The implications of our results are manifold; board gender diversity can produce lower volatility and enhances operating performance (Jeet, 2020; Phillips-Wren, 2018; Sanda, 2011; van der Walt & Ingley, 2003). Nonetheless, companies in Jordan are yet to capture all the benefits which come with diversity. Legislators are also encouraged to participate in this issue by promoting gender diversity on companies' boards' structure.

We acknowledge several limitations of this study. The first is the low female participation in Jordanian BOD which hinders the attempt for generalization. Second, financial performance was measured by using Tobin's Q and ROA which may not provide a comprehensive view of financial performance. Lastly, the Jordanian economy has been facing many challenges in recent years which created a raped loss for listed companies over the years.

Future research can focus on gender diversity and financial performance in countries with a similar cultural backgrounds such as the MENA region. In addition, board gender diversity and its relation to earnings management, bankruptcy predictions, and other performance indicators can enrich this area of research.

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