

Can Board Gender Diversity Better Control Earnings Manipulation: Evidence from Banking Industry

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Abstract

The purpose of this paper is to examine the contribution of the board's gender diversity compared to its other characteristics in limitation earnings manipulation in the banks. The empirical study carried out on Tunisian banks over a period extending from 2001 to 2019, using the Panel-Corrected Standard Errors, allowed us to show that board gender diversity, turns out in this study of a considerable contribution to the board of directors composition since it has moderated accounting manipulation to avoid losses. As for the board independence, it has reduced earnings manipulation measured by the abnormal provisions. However, it turns out that board size and board duality does not have a significant effect on earnings manipulation.

Keywords: abnormal provision, loss avoidance board gender diversity, board independence, board size, board duality

1. Introduction

The subject of governance has aroused particular interest in recent years on the part of academics, economists and politicians, due to the succession of scandals and resounding bankruptcies that have characterized the current economic environment. In particular, among the different governance mechanisms, Fama and Jensen (1983) stress the important role that the board of directors plays in controlling the actions of managers and in resolving agency conflicts between shareholders and managers. Indeed, the board of directors is an obligation under the laws and regulations of each country. Thus, most companies, whatever their vocation, are required to have a board which must meet several conditions, such as the presence of several members, the existence of sub-committees, directors independence, etc.

The board of directors, considered one of the most important internal governance mechanisms, is made up of members who are elected by the General Assembly. This board is the main management control element. In fact, Sarbanes-Oxley law gives him the role of appointing managers, fixing his compensation, controlling him, and even replacing him.

This study will be particularly focused on the banking sector. Indeed, according to Macey and O'Hara (2003), the specificities of the banking sector and the importance of the information asymmetry problems that remain therein increase the need for control and supervision of the manager's activity in view of to limit its opportunistic behavior.

As such, studies on the impact of the establishment of a board of directors within banks in mitigating the opportunism of managers, in particular their discretionary behavior (earnings manipulation) are divergent. Indeed, some authors Peasnell et al. (2000); Jeanjean (2001); Davidson et al. (2005) confirm the disciplinary role of the board of directors in limiting earnings management. Others (Fama & Jensen, 1983), on the contrary, show its positive impact on the discretionary practices of managers. But, for other research (Jeanjean, 2003; Firth et al., 2007) board of directors has no impact on such practices. On this point, Fama and Jensen (1983) and Vafeas (2000) suggest that the effectiveness of the control exercised by the board of directors over the decisions taken by the manager depends on its characteristics, in particular its size, its composition (internal or external directors), dissociation between the manager of the company and the manager of the board, etc. More recently, other authors, such as Adams & Ferreira (2009), Fan et al. (2019) and Orazalin (2020) have just affirmed the role

played by the presence of women on the board in improving the control of managers and reducing their entrenchment. On the other hand, other authors deny the relationship between the presence of women and earnings management (Sun et al., 2011; Lara et al., 2017).

The purpose of this paper is therefore to determine the contribution of the board's gender diversity compared to its other characteristics (size, independence and duality) in the delimitation of earnings management of bank measured both by abnormal provisions and loss avoidance behavior.

2. Literature Review and Hypothesis Development

2.1 Theoretical Foundations

The first famous basic theory characterizing research on the board of directors is that of agency theory. This theory appeared in 1976 with the work of Jensen and Meckling. Two basic hypotheses are the basis of this theory, namely: the first assumes that all individuals have as their main vocation the maximization of their utility at the expense of others. The second hypothesis predicts that individuals are rational in their anticipation of the impact of agency relationships on the future value of their wealth (Charreaux, 1997). These agency relationships, which correspond to a contract binding the principal and the agent in the execution of a task and which involves the delegation of a certain decision-making power to the agent, can generate moral hazard problems, adverse selection, opportunism and manipulation of information by the agent for his own benefit. It is this divergence of interests, generating agency costs, that justifies the need for the establishment of control mechanisms by the principal.

The second basic theory is that of transaction costs (Williamson, 1975), integrating employees into stakeholders and considering the firm as the guarantor of the avoidance of market failures due to the specificity of assets and the opportunism of agents. Transaction costs, including agency costs, can be generated by contractual exchanges of goods or services between firms and which can be reduced by two mechanisms: intentional mechanisms linked to specific assets such as the board of directors having for mission to control and analyze the origin of additional costs and consequently to decide the future of the manager. Other so-called spontaneous mechanisms linked to redeployable assets, such as the market, which has the role of sanctioning any excess costs.

2.2 Hypotheses Development

In general, the provision technique is the most important specific accrual for banks to earnings manipulation.

However, from a brief literature review, we learned that the motivation for earnings manipulation in banks can sometimes be to avoid losses. In this sense, Beatty et al. (2002) and Altamuro and Beatty (2010) assert that bank managers are encouraged earnings manipulation for benchmark behavior.

Indeed, the characteristics of internal governance structures can limit the opportunistic behaviors of managers, particularly with regard to earnings manipulation. In this context, Jensen (1993) notes that the quality of internal control depends on the composition of the board of directors, namely: the board size, and board duality. More recently, other authors, such as Adams & Ferreira (2009) and Orazalin (2020) affirm the role played by the presence of women on the board in improving the control of managers and reducing their entrenchment.

2.2.1 Board Size and Earnings Manipulation

The studies on the effect of board size and earnings manipulation show controversial results. Thus, Pearce and Zahra (1992) show that a board with a large number of directors exerts more control over the manager, which makes it possible to limit his opportunistic behavior. In this same context, Kiel and Nicholson (2003), find that large board of directors do not constitute an obstacle to good earnings in the Australian context. Similarly, Taktak and Mbarki (2014), state that it is difficult in a large board of directors to be influenced by managers decisions. According to Jian and Ken (2004), large boards can generally benefit from the different experiences of members, which has a negative impact on earnings manipulation.

In this same framework, Beasley (1996), Vefeast (1999) show that board size has a negative effect on earnings manipulations. For their part, Xie et al. (2003) succeed in showing that the large size of the board makes it possible to reduce current discretionary regularizations. Chtoutou, Bédard and Courteau (2001) in turn confirm that the control of earnings management can be improved within the framework of a large board. On the contrary, other authors favor small advice. Indeed, according to Jensen (1993) the large size of the board can present a barrier to management control of the company. Thus, according to agency theory, the large size of the board of directors favors its domination by the manager and possibly creates conflicts of interest between directors and managers. This leads to a fragmented, ineffective board presenting difficulties in reaching a consensus on important decisions.). Yermack (1996) argue about the effectiveness of small board size by the agency problems

caused by large size. However, referring to Firth et al. (2007), the board size has no effect on earnings manipulation.

Hence our first hypothesis:

H-1: The board size has a negative effect on earnings manipulation in banks.

2.2.2 Board Independence and Earnings Manipulation

The company's concern for protecting the interests of shareholders from executive opportunism prompts it to foster board independence. Indeed, independence is necessary to ensure that the board of directors fulfills its oversight role and that it holds the manager to account to shareholders. Thus, an independent director should not be either a former employee of the company or a majority shareholder. He does not have to have a major contract with the company, be a supplier or even an advisor. In short, he must have no interest or relationship with the business other than being a member of it.

In fact, there are two opposing trends regarding the dominance of internal or external directors. Thus the agency theory states that the board must act independently and must therefore be composed of a majority of outside directors to circumvent conflicts of interest between managers and shareholders. Indeed, according to this theory, internal administrators can hardly challenge the choice of managers since they report to them hierarchically. They fail to make the right decisions to improve earnings. Therefore, the outside directors have a central role which is to control the directors and to protect the interests of the shareholders. On the other hand, according to the theory of stewardship, the managers manipulate the resources of the company with a view to maximizing the capital of the shareholders because they have non-financial motivations such as self-satisfaction and the need to recognition. This is how the board of directors would be dominated by inside members.

Empirical studies examining the relationship between board composition and earnings management show divergent results. Indeed, Byrd and Hickman (1992) assume that the presence of outside directors protects the interests of shareholders when there is an agency conflict. For example, Griffith (1999) states that boards dominated by outside directors have better control over bank executives compared to those dominated by inside directors. In the same vein, Beasley (1996) and Klein (2002) show that the independence of directors delimits manipulation and accounting fraud. Peasnell et al. (2005) in turn show in a British context that the independence of the board has a negative effect on the manipulation of accounts. In a French context, Jeanjean (2001) similarly confirms that the independence of the board reduces earnings managements. Davidson et al. (2005) were also able to state in an Australian context that the independence of the board has the effect of reducing accruals.

However, Vafeas (2000) did not confirm in his study the significant relationship between board independence and the information content of earnings.

Hence our second hypothesis:

H-2: board independence has a negative effect on earnings manipulation in banks.

2.2.3 Board Duality and Earnings Manipulation

According to agency theory, duality reduces the independence and ability of the board of directors to effectively control the CEO. Thus, combining the two roles dilutes the power of the CEO and reduces the ability of management to dominate the board. As a result, two distinct individuals provide different perspectives and skills and can be complementary: the CEO's role is to lead the company and the chairman of the board to monitor and advise the manager in strategic decisions. Jensen (1993) also recommends the separation between the function of CEO and that of the chairman of the board. It shows that the role of the Chairman of the Board is to conduct meetings and oversee the process of hiring, firing, evaluating and compensating the executive. It is therefore clear that the CEO cannot perform well since he will prioritize his own interests. According to the author, without the presence of an independent, it would be very difficult for the council to carry out its functions properly. Therefore, for counseling to be effective, it is necessary to separate the two positions. Daily and Dalton (1994) also find that duality is associated with a greater probability of bankruptcy.

However, Beasley, (1996) confirms the role of duality in limiting the possible production of biased financial statements. For their part, Sridharan & Marsinko (1997) were able to assert that the board of directors is more efficient when there is duality, because in this case, the CEO has information to disclose to the board.

Hence our third hypothesis:

H-3: board duality has a negative effect on earnings manipulation in banks

2.2.4 Board Gender Diversity and Earnings Manipulation

A quick review of the literature suggests the positive contribution of gender diversity to the oversight mission of the board of directors. Indeed, the presence of women directors, which broadens the board, allows for new ideas, better communication, a longer debate during meetings and a more willing engagement in these meetings (Carter et al., 2003; Adams & Ferreira, 2003). This has the effect of promoting better decision-making, tighter control, more accessible information which translates into lower agency costs, interests alignment (Adams & Ferreira, 2009) and risk-taking reduced (Jianakoplos & Bernasek, 1998). Some other authors add that women administrators are more flexible in management, they defend a participatory management style where power and information are shared. Admitting this approach, we note the obligation of equity in the distribution of genders on boards of directors in France, Norway and Italy. In this context, and Fan et al. (2019) confirm that the higher the number of women in counseling, the more earnings management decreases.

For some other authors, (Farrell & Hersch, 2005), the trend towards diversity of board where the number of women who exist there is in full increase, can be justified not by their effectiveness but rather by the image they give to the company, thereby attracting new investors. In a similar sense, Kang et al. (2009) indicate that the entry of women into the board has the effect of increasing the returns recorded. Other authors (Adams & Ferreira, 2009), go so far as to say that this gender diversity on boards of directors can even favor the disciplinary role of other control mechanisms and reduce the propensity of managers to take root and this thanks to the strongest rotation of these diverse boards.

However, other authors including (Adams & Ferreira, 2004, 2009) have just confirmed that within highly diverse boards in terms of gender, conflicts arise between men and women and trust becomes weaker. Moreover, (Rose, 2007; Farrell & Hersch, 2005) manage to demonstrate that this gender diversity does not affect the board of directors. In fact, in countries like Australia, the United States and the United Kingdom, companies have more room for maneuver insofar as the State does not require them, although it recommends that they diversify their board of directors.

Therefore, we make the following hypothesis:

H-4: Board Gender Diversity has a negative impact on earnings manipulation in banks.

3. Research Methodology

3.1 Sample and Study Period

To test our hypotheses, we used a sample made up of the main Tunisian commercial banks that are listed on the Tunis Stock Exchange (BVMT). These banks hold the vast majority of Tunisian bank assets, more than 80% of total commercial bank assets. The study period spans 2001 through 2019, or 190 observations. Data is collected manually from annual reports available at the libraries and websites of the banks in question, CMF, BCT and APBEFT.

3.2 Measurement of Study Variables

1) Dependent variable

In this study, like Kanagartnam (2010), we will take two measures of earnings manipulation, in order to consolidate the validity and robustness of the results of our estimate of the extent of earnings manipulation, namely:

- The abnormal loan loss provisions (ALLP) and,
- The behavior of reference (LOSS_AVOID)

ALLP: abnormal loan loss provisions; this variable is measured by the error term following the estimation of total provisions using the following model:

$$LLP_{it} = \beta_0 + \beta_1 NPL_{it} - 1 + \beta_2 CHNPL_{it} + \beta_3 CHLOAN_{it} + \varepsilon_{it} \quad (1)$$

LOSS-AVOID: is an indicator variable taking the value 1 if the bank has a low ROA (income before taxes weighted by total assets) in the range between 0 and 0.002,

2) Independent variables

BSIZE_{it}: board size measured by the number of its members

BIND_{it}: independence of the board of directors measured by the number of independent members divided by the total number of its members

BDUA_{it}: duality of the board of directors measured by a binary variable equal to 1 if duality exists and 0

otherwise

BGD_{it}: number of women on the board divided by the total number of its members

CHNPL_{it}: The variation in non-performing loans between date t and t-1 of bank i in period t divided by the total loans in year t-1

CHLOAN_{it}: the change in loans from bank i in period t divided by the total loans in year t-1

3) Control variables

CAR_{it}: capital ratio= total equity divided by total assets

ROA_{it}: Return on assets = net income / total assets

SIZE_{it}: Bank size measured by the natural logarithm of total assets

• Models to estimate

In order to achieve our objective of studying the contribution of the board's gender diversity compared to its other characteristics (size, independence and duality) in the delimitation of earnings manipulation in banks, we will use two proxies which are inspired by Kanagaretnam et al (2010): abnormal loan loss provisions and loss avoidance

3.3 Abnormal Loan Loss Provisions to Earnings Manipulation

Like Zhou and Chen (2004), Kanagaretnam et al. (2010) and Zgarni et al. (2018), we start by estimating total loan loss provisions. Then, we estimate the discretionary part that corresponds to the error resulting from this last estimate by regressing it on the different characteristics of the board of directors:

Model 1

$$ALLP_{it} = \beta_0 + \beta_1 BSIZE_{it} + \beta_2 BIND_{it} + \beta_3 BDUA_{it} + \beta_4 BGD_{it} + \beta_5 CAR_{it} + \beta_6 ROA_{it} + \beta_7 LASSET_{it} + \varepsilon_{it}$$

3.4 Earnings Manipulation to Loss Avoidance

From a brief review of the literature, we learned that the motivation for earnings management in banks can sometimes be to loss avoid. In this context, Beatty et al. (2002) and Altamuro and Beatty (2010) recommend that bank managers can manipulate financial statements through benchmark behavior including loss avoid or declining earnings.

In this first model, we therefore aim to estimate the effect of the different characteristics of the board of directors chosen for the study (size, independent directors, duality and gender diversity) on loss avoidance (LOSS_AVOID)

Model 2

$$LOSS - AVOID = \beta_0 + \beta_1 BSIZE_{it} + \beta_2 BIND_{it} + \beta_3 BDUA_{it} + \beta_4 BGD_{it} + \beta_5 CAR_{it} + \beta_6 ROA_{it} + \beta_7 LASSET_{it} + \varepsilon_{it}$$

4. Results and Discussions

4.1 Descriptive Statistics

Table 1. Descriptive statistics of the study variables

Variable	Moyenne	Min	Max	Ecart Type.	Observation
LLP	.024752	.0000167	.1598903	.0237261	190
LOSS-AVOID	.5526316	0	1	.4985359	190
BFSIZE	11.01053	6	15	1.536124	190
BIND	.2028919	.1111111	.3636364	.0614859	190
BDUA	.3315789	0	1	.4720244	190
BGD	.1051055	0	.4444444	.0980174	190

The results of descriptive statistics as presented in the table above, show that on average the LOSS-AVOID variable is 55.26%. With a standard deviation of 49.85%. Regarding the characteristics of the board of directors, the descriptive statistics show that the average value of the size is 11 members with a minimum value of 6 and a maximum value of 16. So we find the banks are not fully complying with the provisions Tunisian legislation

which predicts that any public limited company must be administered by a board of directors composed of at least three members and at most twelve members. The standard deviation is 153.61% indicating a high dispersion of this variable in our sample. As for the independence of the board of directors, we note that it is equal to 20.15% on average, it varies between 11.11% and 36.36%. These values are seen to be low. The board duality, on the other hand, shows an average value of 33.15% with a standard deviation of 47.2%. Finally, we notice that the gender diversity is 10.51% on average which is a relatively low value, it varies between 0% and 44.44% and indicates a standard deviation of 9.8% indicating a low dispersion of this variable within our sample.

4.2 Correlation Analysis

The following table shows the correlation results between the study variables

Table 2. Correlation matrix for the fourth model variables

	LOSS_AVOID	BSIZE	BIND	BDUA	BGD	CAR	ROA	LASSET
LOSS-AVOID	1							
BSIZE	0.2135	1						
BIND	-0.0357	-0.0812	1					
BDUA	-0.0183	-0.0924	-0.0399	1				
BGD	0.1531	-0.0661	0.1639	-0.0559	1			
CAR	-0.1239	0.0608	0.3829	-0.0538	-0.0312	1		
ROA	-0.3257	-0.2802	0.0800	0.0227	-0.3054	0.1841	1	
LASSET	0.0168	-0.0188	0.2287	-0.4287	0.0366	-0.0385	0.1171	1

From the correlation table between study variables above, we notice that all values are below 0.6. Therefore, there are no significant correlation issues between variables (Gujarati, 1995)

4.3 Regression Results of the Board of Directors Characteristics on Discretionary Provisions and Earnings Management for Loss Avoidance

Table 1 presents the results of the first regression using loan loss provisions model.

Table 3. Multivariable regression of the effect of the board characteristics on abnormal provisions

ALLP	Coefficient	Std. Err.	z	P> z	[95% Conf. Interval]
BSIZE	-.0000985	.0000981	-1.00	0.317	-.0002922 .0000952
BIND	-.0086702	.0044247	-1.96	0.052*	-.000067 .0174073
BDUA	.0000421	.0002862	0.15	0.883	-.000523 .0006072
BGD	-.0029886	.0021581	-1.38	0.168	-.0072501 .0012728
CAR	.005247	.0055645	0.94	0.347	-.0057407 .0162348
ROA	.0214276	.0221674	0.97	0.335	-.0223447 .0651999
LASSET	-.0007244	.0002766	-2.62	0.010***	-.0012706 -.0001783
Constante	.0137145	.0043383	3.16	0.002	.005148 .022281

***: significant at 1% , ** significant at at 5%, * significant at 10 %

The table below shows the results of the regression of the effect of board characteristics on benchmarking behavior (loss avoidance).

Table 4. Multivariate regression of the effect of board characteristics on the behavior of exceeding benchmarks (loss avoidance)

LOSS-AVOID	Coefficient	Std. Err.	z	P> z	[95% Conf. Interval]
BSIZE	.0204875	.0266349	0.77	0.442	-.031716 .0000952
BIND	-.0292428	1.045723	-0.03	0.978	-2.078822 .0174073
BDUA	-.1123161	.080425	-1.40	0.163	-.2699462 .0006072

BGD	-1.04801	.5499131	-1.91	0.057*	-.0297999	.0012728
CAR	-2.711336	1.637711	-1.66	0.098*	-5.921191	.0162348
ROA	-2.199537	1.637711	-0.36	0.720	-14.22428	9.825211
LASSET	-.3031158	.0723417	-4.19	0.000***	-.4449029	-.16132
Constante	4.877787	1.131151	4.31	0.000***	2.660773	7.0948

***: significant at 1% , ** significant at 5%, * significant at 10 %

The first regression allowed us to reach first of all the following results: the Tunisian banks, the subject of our research, opt for earnings management through loan loss provisions. As for the second regression, it allowed us, first of all, to achieve the following results: the Tunisian banks, the subject of our research, opt for earnings management to loss avoidance.

In addition, it turns out that the size of the board of directors does not affect abnormal provisions. Likewise, it turns out that the size of the board of directors does not also have a significant effect on earnings manipulation in order to avoid losses, which allows us to reject the H1 hypothesis. This result, which is seen to contradict the premises of agency theory, also diverges from the results found by Pearce and Zahra (1992); Beasley (1996), Kiel and Nicholson (2003), Jian and Ken (2004), Zhou and Chen (2004) and Taktak and Mbarki (2014) having proved in different contexts that the large size of the board allows a more effective control of the opportunism of managers and earnings management decrease. Our result is also in full divergence with the work of Jensen (1993) who defend small boards by showing their role in the mitigation of earnings management. However, our result converges with that of Firth et al (2007) who demonstrated the absence of a significant relationship between the size of the board and earnings manipulation.

As for the independence of the board of directors, our empirical study shows the existence of a significant and negative relationship between this variable and earnings manipulation measured by abnormal provisions. However, the independence of the board of directors does not have a significant effect on earnings manipulation to avoid losses. This allows us to confirm the H2 hypothesis. This result can be explained by the trend of the boards of directors in our sample towards independence (20%) which allowed them to control and reduce earnings management measured by abnormal provisions.

This result, being in favor of the postulates of agency theory, is consistent with the results of the work of Byrd and Hickman (1992), Beasley (1996), Jeanjean (2001), Klein (2002), Zhou and Chen (2004); Peasnell et al. (2005) as well as Davidson et al. (2005) who prove in various contexts that the independence of the board is a favorable factor in reducing accounting manipulations. However, our result is contradictory with that of Orazalin (2020) who denies the significant impact of board independence on earnings management.

Regarding the effect of duality on abnormal provisions, it is also not significant. Moreover, duality also seems to have no significant effect on earnings manipulation to avoid losses. Therefore hypothesis H3 is rejected. This can be explained by the low number of banks opting for board duality (33%) in our sample.

This result, which seems contrary to agency theory, is opposed to Beasley, (1996) and Sridharan & Marsinko (1997) who demonstrated the significant role of duality in limiting the possible production of d 'biased financial statements. Our result also diverges from that of Jensen (1993) and Daily and Dalton (1994) who advocate that the separation between the function of CEO and that of the chairman of the board makes it possible to limit the opportunism of managers.

Finally, with regard to board gender diversity, we found that the presence of women on the boards of the banks studied did not have a significant impact on abnormal provisions. However, this female presence shows a significant and negative effect on earnings management to loss avoidance. As a result, the H4 hypothesis is confirmed. This result can be explained by the low number of women on the boards of the banks studied, which is 10%, which prevents them from fully playing their role of monitoring and aligning divergent interests, thanks to their qualities.

This result agrees with the results of Carter et al. (2003); Adams and Ferreira (2004); Adams and Ferreira (2009), Fan et al. (2019) and Orazalin (2020) who have proven the significant effect of the presence of women in limiting the opportunistic behaviors of managers. However, we do not agree with Rose (2007) and Farrell and Hersch (2005) who confirmed the absence of a significant relationship between gender diversity and earnings management. Moreover, this result diverges with the results of Adams & Ferreira, (2004, 2009) who have shown

that within highly diversified boards in terms of gender, conflicts between increases men and women and trust decreases.

5. Conclusion

This research is part of the current of governance and earnings manipulation in banks, while deepening in the study of the different motivations of earnings manipulation, in particular by introducing into the measurement of accounting manipulation, that motivated by loss avoidance (LOSS-AVOID). From the present study on a sample of Tunisian commercial banks over the period 2001-2019, several conclusions can be drawn. First, Tunisian banks opt for earnings manipulation through discretionary provisions as well as to avoid losses. Secondly, the independence of the board of directors is found to have a disciplinary role in that it contributes to the limitation of earnings management measured by abnormal provisions. Third, this study contributes to the enrichment of the debate on the role of board characteristics in the mitigation of earnings management, and this by introducing a new variable recently debated in the literature, namely the presence of women on these boards. In fact, the presence of women in the board has proven to be an undeniable contribution to earnings management in Tunisian banks and this because it has made it possible to constrain the second new variable introduced to measure earnings management, namely earnings management to avoid losses. Certain implications can thus be drawn from this research. First, the size of boards of directors must be reduced to avoid conflicts of interest and to fulfill their disciplinary roles in controlling the managers. In addition, the banks in our sample have an interest in protecting and safeguarding advisory independence, in order to minimize earnings manipulation through abnormal provisions. Likewise, the banks in our sample must tend towards the duality of the function of the manager and the chairman of the board, given the demonstrated disciplinary role of this variable in the attenuation of earnings management in several contexts. Finally, these banks are called upon to maintain a diversified board in terms of gender given the contribution of the female presence in the reduction of accounting manipulation in order to avoid the losses.

However, certain limitations of the present research must be raised. Indeed, this study is limited to examining the impact of four characteristics of the board of directors on earnings management. However, other factors, such as the age of the directors, their nationality, etc. (Halcro et al., 2020) can provide some meritorious insight into the disciplinary role in earnings management. Another limitation may be in earnings management measures chosen for the estimate. Indeed, our study was limited to accruals as well as to earnings management in order to avoid losses, while other measures could be used to better strengthen the validity and robustness of our analysis. empirical, including earnings management to achieve or beat previous year's results (Kanagaretnam et al., 2010).

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