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Family Control, Board of Directors' Independence and Extent of Voluntary Disclosure in the Annual Reports: Case of Tunisian Companies

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Abstract

The main objective of this paper is to analyze the indirect effect of internal governance mechanisms on the extent of voluntary disclosure. More specifically, it is to analyze the mediating effect of the board of directors' independence on the impact of family control regarding the extent of voluntary disclosure in the annual reports. This research focuses on Panel data of Tunisian companies of the non-financial sector listed on the stock exchange (observed in the years 2003-2008) and data from a questionnaire sent to 40 Tunisian financial analysts and portfolio managers. From the obtained results, we find that the extent of voluntary disclosure increased during the period following the promulgation of the Law on the strengthening of the security of financial relations compared to the period prior to the enactment of this Law. In addition, the analyzes following the method of Barron and Kenny (1986) show the existence of a partial mediation effect of the board's independence on the impact of family control regarding the extent of voluntary disclosure.

Keywords: family control, voluntary disclosure, board of directors' independence, annual report, mediation.

JEL Classification: M41, M48

Introduction

Financial transparency and voluntary disclosure are one of the pillars of good corporate governance. Having previously had a minor role in the external corporate reporting, voluntary disclosure in the annual reports is now actively involved in the decision making process of these reports external users. It is therefore considered as a governance and protection external mechanism against the opportunistic leaders. In fact, these users control the company. In this regard, the attributes of corporate governance are introduced in order to control the agency problems and make sure that managers act in the interests of shareholders. Good corporate governance helps reduce the leaders' opportunistic behavior through the reduction of information asymmetry. Mechanisms of corporate governance are intended to define the discretionary space of the managers and align their managerial behavior in accordance with the shareholders' interests. In this case, the information voluntarily disclosed by companies helps the shareholders monitor and evaluate the leaders' management through its role in reducing the information asymmetries. Providing voluntary information in the annual reports can be considered as a discretionary managerial behavior insofar as it results from a choice made by the leaders.

Tunisia is an emerging country of the MENA[1] zone characterized mainly by a high concentration of ownership (usually family) and a weak legal protection of the minority shareholders. On the one hand, the Tunisian legislator encourages companies to voluntarily disclose information in the annual management report to meet the increasing external users' needs for it (Chakroun, 2012b). Indeed, Article 201 of the Code of Commercial Companies[2] indicates that the annual report must be "detailed". Then, paragraph 83 of the Tunisian accounting conceptual framework encourages companies to disclose the relevant voluntary financial and non-financial information. In addition, Article 44 of the FMC[3] Regulation on public offering (as amended by a decree in 2008) refers to an appendix that sets a standard model of the management report. Then, the Law about the strengthening of the security of financial relations (enacted in 2005) requires greater accountability for companies. Finally, the FMC statement published in 2010 reminds the companies making public offerings of the required mandatory information to include in their annual reports about management and encourages them to increase their scope of voluntary information disclosure. On the other hand, voluntary disclosure is a recent story in Tunisia. First, the globalization of financial markets requires greater transparency of the firms' financial and economic situation in order to attract foreign investment in Tunisia. Second, the Tunisian companies are still publishing their annual reports using local accounting standards and not the International Financial Reporting Standards[4], hence, the information voluntarily disclosed today is likely to be mandatory tomorrow, that is, after a potential harmonization with the IFRS. Third, we notice a change in corporate governance despite the absence of a formal regulatory framework to mentor it. This is reflected in the creation of the Tunisian Centre of Corporate Governance (2009) and especially in the publication, by the Arab Institute of Business Leaders, of two guides. The first is the guide of good governance practice of the Tunisian companies[5] (published in 2008 and updated in 2012) and the second is the annual report of the Tunisian companies guide[6] (published in 2009).

The company's ownership structure affects the composition of its board of directors (Mak and Li, 2001). It is interesting, then, to analyze the possible indirect relationship between family control and voluntary disclosure that transit through the composition of the board of directors. Several Tunisian companies are still reluctant to meet the information needs of the external users of their annual reports despite the introduction of many mechanisms of good corporate governance and the recommendation of more transparency by some organizations (Chakroun, 2012a). This led us to ask our research question: To what extent does the family control act on the independence of the board of directors to determine the extent of voluntary disclosure in the annual reports of the companies listed in Tunis Stock Exchange[7]?

[1] Middle East & North Africa
[2] Henceforth CCC
[3] Financial Market Council
[4] Henceforth IFRS
[5] Henceforth GGGPTC
[6] Henceforth ARTCG
[7] Henceforth TSE

Many previous studies tried to define the governance mechanisms which encourage and discourage companies to voluntarily disclose. The studies of (Li and Qi, 2008; Lim et al. 2007; Barako et al. 2006; Gul and Leung, 2004; Eng and Mak, 2003; Chakroun and Matoussi, 2012 and Chen and Jaggi, 2000) examined the direct links between governance mechanisms and the extent of voluntary disclosure in the annual reports. However, Patelli and Prencipe (2007) stress the importance paid by the researches dealing, in a combined way, with different control mechanisms of the leaders which represent an interactive system. The coverage of the indirect effects that might exist between these mechanisms arises, especially, when the direct effects of governance mechanisms on the extent of voluntary disclosure can give only a very narrow picture of the determinants of the latter.

This research contributes to the analysis of the voluntary disclosure evolution on the period of the study, as well as that of the indirect link between three governance mechanisms, namely: the family control, the independence of the board and the extent of voluntary disclosure. This will enrich and complement the previous studies still limited in this context since most of them examined the direct relationship between voluntary disclosure and its determinants. The objective of this research is twofold, it is about:

1. Analyzing the evolution of the discretionary managerial behavior of the voluntary disclosure in the annual reports between the periods before and after the promulgation of the Law on the strengthening of the security of financial relationships.
2. Analyzing the interdependence (mediator) effect between two internal mechanisms of corporate governance and the extent of voluntary disclosure in the annual reports.

To achieve our objective, we rely on a sample of companies of the non-financial sector listed on the TSE and observed over the period 2003-2008. Besides, we conduct a survey questionnaire administered to a sample of 40 Tunisian financial analysts and portfolio managers. We apply the method of the panel data regressions (simple and multiple) and we test the four mediation conditions outlined by Barron and Kenny (1986). The content analysis of the annual reports shows an increase in the extent of voluntary disclosure in the period after the promulgation of the Law on the strengthening of the security of the financial relations compared to the period prior to the promulgation of this Law. In addition, this analysis shows that the extent of the disclosure of general information about the company and about the results summary is the highest and that the extent of disclosure of social and environmental information is the lowest. The results also indicate that the independence of the board of directors is a partial mediator of the relationship between the family control and the extent of voluntary disclosure.

This paper is structured as follows; the first section is devoted to the presentation of the theoretical framework of the study. The formulation of the hypothesis on the basis of a synthesis of the literature review is conducted in the second section. The methodology of the study is presented in the third section. Finally, the empirical results are presented and discussed in the fourth section.

1. Theoretical framework

According to Jensen and Meckling (1976), disclosure is a governance mechanism intended to mitigate the agency costs (costs of monitoring the directors by the shareholders and the clearance costs that the latter support for show their good governance). Ali et al. (2007) argue that there are two types of agency problems. The first (type I) is due to the separation of ownership and management. In this case the leaders cannot act according to the interests of shareholders. The second (type II) comes from the conflict between the director-shareholders and the non-management shareholders. In this case, the family members tend to control their company through their substantial shareholding in the capital (shareholders) and in the company's management of (the board of directors). According to these authors, in family businesses, type I (type II) agency problems tend to be less (more) intense than in other businesses. Villalonga and Amit (2006) claim that agency problems of type II appear only when the family dominates the control of the company and when the CEO is a member of this family.

Ibrahim and AbdulSamad (2011) find that, in the Malaysian context, the family businesses have fewer agency conflicts than the other companies. Indeed, the agency costs are virtually nonexistent in the family businesses due to the alignment of the shareholders and managers' interests and to the existence of non-economic objectives. The stewardship theory, which was developed in 1985 by Donaldson, embedded psychological, sociological and behavioral systems. This theory is based on the idea that the agency theory is not appropriate for the family businesses. In these companies, the functions of the leader, the shareholder and the supervisor are held by either the same person or by the family. This theoretical framework seems to be better suited to the specific nature of the family businesses since we can assume that collective interest guides the actions of the family members involved in the management of the company.

2. Literature review on the mediating effect of the board's independence on the impact of the family control on voluntary disclosure

The (GGGPTC) devoted a section to the presentation of good governance practices within the family businesses. This guide emphasizes the distinction between the family and the company through: the psychological and legal separation between the company assets and those of the family and the involvement of (an) independent director(s). According to this guide: "In addition to the traditional mechanisms with the goal of producing, sharing information and ensuring transparency, family corporate governance is expected to:

- Develop instruments; procedures, techniques, and an information system which help produce in quantity, quality and within a satisfactory period reliable information on the real functioning of the company.
- Ensure the quality and equality of information for all the shareholders and all the family members ".

According to Caceres and Vanhamme (2003), a mediator is a variable that represents a mechanism by which variable X influences variable Y: variable X has an influence on the mediator which, in turn, affects variable Y. The mediator variable is therefore a "transmitter" through which the impact of X on Y passes. The mediating processes answer the question "how, why" the X - Y effect exists. X is an antecedent of the mediator variable and the latter is an antecedent of Y. When a variable is mediator of the X - Y relationship, it said that the variable X has an indirect effect on the variable Y. In other words, a part at least of the influence of X on Y passes through the mediating variable. In this vein, and to study the indirect effect of several characteristics of the firms (the concentration of ownership especially) on the voluntary disclosure, Arcay and Vázquez (2005) use the governance internal mechanisms (latent variable) as a mediator variable. They used a confirmatory factorial analysis to reduce the practices of governance to a single factor so as to estimate its overall effect on disclosure. According to these authors, ownership structure has a negative and significant impact on the adoption of the rules of good governance, which, in turn, affect the disclosure of the company. They then claim the existence of an indirect relationship between ownership concentration and voluntary disclosure that passes through the internal governance mechanisms.

Having most of the information, the majority shareholders dominate the boards. In this context, several studies, such as those of Li (1994), Mak and Li (2001) and Chtourou et al. (2006) were interested in studying the effect of ownership concentration on the composition of the board of directors.

Li (1994), states that ownership concentration negatively affects the proportion of the outside directors in the board. This means that the independence of the board and ownership concentration are substitutes. This result is consistent with the predictions of the agency theory which states that the agency problems get worse when the decisions made by management are not aligned with the shareholders' interests. Indeed, when ownership is concentrated, the majority shareholders are able to take a leadership position in the direction of the company thereby reducing the agency problems caused by the conflicts between the shareholders and the managers.

Mak and Li (2001) claim, on a sample of listed companies in Singapore, that there is a relationship between ownership structure and that of the board of directors. The results of this study indicate that ownership structure and the board structure are connected; besides there is a strong interrelationship between the characteristics of the board of directors (composition, leadership structure and size). More particularly, the proportion of the outside directors is negatively connected to the managerial ownership and to the board size. In addition, the combination of functions of the general manager and the chairman of the board exists a lot in companies with a strong ownership of blockholders.

Chtourou et al. (2006) focus on the Tunisian context and state that ownership concentration positively affects the proportion of the outside directors in the board. Indeed, the high ownership concentration in the Tunisian context implies that takeovers do not represent a sustainable disciplinary mechanism. This is due to the low market control in Tunisia and the absence of hostile takeovers. These results are not consistent with the predictions of the agency theory and show that firms choose the composition of their boards optimally on the basis of their ownership structures.

However, the annual report preparation is at the discretion of the board, hence, its structure affects the strategic choices of disclosure in this report and more specifically the overall scope of voluntary disclosure. This board lies at the heart of the leaders' control mechanisms. In this regard, we cannot talk about good governance of a company without mentioning the effectiveness of its board of directors. Most of the previous studies claimed that the board is more effective if the majority of its members are "external", that is to say, members who are not shareholders and who are independent from management as opposed to the 'internal' members (Gul and Leung, 2004 and Peasnell et al. 2005). In addition, the outside directors could be better placed than the inside ones in ensuring a high extent of voluntary disclosure in the annual reports (Apostolou and Nanopoulos, 2009; Patelli and Prencipe, 2007[8]; Lim et al., 2007[9]; Cheung et al., 2007; Cheng and Courtenay, 2006 and Chen and Jaggi, 2000).

It should be noted that equity ownership by the family members gives them control rights through their presence in the board of directors. Such a property can imply a low level of voluntary disclosure. The board of directors, as a collegial control and decision-making body, is not really perceived, by the majority of the authors and practitioners, as a favorable space for

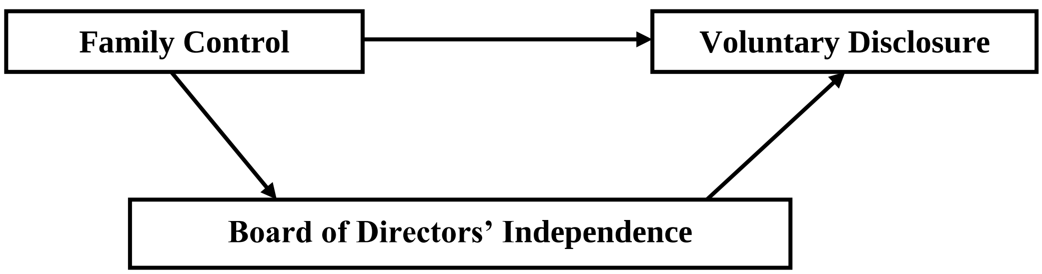
[8] This study is based on a sample of 175 non-financial listed Italian companies characterized by the presence of a dominant shareholder.

[9] This study is based on a sample of 181 non-financial listed Australian companies since at least 3 years.

purely family meetings. It should be noted that in Tunisia, according to Article 196 of the CCC, being a shareholder does not necessarily require being a member of the board of directors of a public company and the GGGPTC recommends that at least one third members of the board are independent. We assume that the mediator (independence of the board) is a mechanism by which the family control of the company influences the extent of voluntary disclosure in the annual reports. Family control influences the mediator and the latter influence the extent of voluntary disclosure tower. In other words, the direct effect of family control on the extent of voluntary disclosure is weakened when a good governance mechanism is put in place. In light of the above discussion, we propose to test the following hypothesis.

Hypothesis: The independence of the board of directors is a mediator of the family control effect on the extent of voluntary disclosure.

Figure 1: The mediator effect of the board of directors' independence on the relationship: family control / voluntary disclosure



3. Investigation method

3.1. Sample and data collection

Our sample consists of companies of the non-financial sector (industrial and of services) listed on the TSE, as has been the case with Apostolou and Nanopoulos (2009), Hassan et al. (2006), Leventis and Weetman (2004) and Naser and Nuseibeh (2003) because of the specificity of the disclosure for the financial sector. Indeed, it is appropriate to focus on the listed companies which should be careful about their voluntary disclosure policy in the annual reports. The study period was: 2003 - 2008 and our sample is composed of 144 observations. We chose this period in order to seize the possible change in the managerial discretionary behavior of voluntary disclosure. Our data were extracted from the companies' annual reports and the TSE website (http://www.bvmt.com.tn/) and organized in the form of panel data.

Table 1: Distribution of the observations (firms-years)

Years	2003	2004	2005	2006	2007	2008	**Total**
Number of firms	21	20	23	26	26	28	**144**

3.2. Measurements of the variables

3.2.1 Extent of the voluntary disclosure

According to Healy and Palepu (2001), the extent of the information disclosed by the company is a difficult and complicated task. Accounting research was based on the indexes as a proxy to measure the extent of disclosure. For Urquiza et al. (2009), there is no consensus on the best design of these indexes. We constructed an index of voluntary disclosure by applying the index of Botosan (1997), which is structured around five categories of information, to the Tunisian context. We omitted 8 items which were disclosed by no company in our sample. We added three categories of information: information on the intangibles, social and environmental information and information on corporate governance. These information items of which the usefulness was demonstrated by the previous literature and recommended by the ARTCG are added to tackle the Botosan (1997) index deficiencies.

Table 2: Summary of the information categories of the analysis grid

Information categories	Number of *items*
Information categories of the Botosan (1997) analysis grid	
1- Background Information	15
2- Summary of historical results	5
3- Key non-financial statistics	14
4- Projected information	8
5- Management discussion and analysis	13
Information categories added to the Botosan (1997) analysis grid	
6- Information on the intangibles	4
7- Social and environmental information	7
8- Information on corporate governance	6
Total	**72**

We carefully read the annual reports of the companies in the sample. We, then, compare the information presented in the annual report in relation to that put in our analysis grid. After completing the analysis of the contents, we calculate an index of voluntary disclosure for each company. The method of awarding points is done with weighting. According to Prencipe (2004) and Marston and Shrives (1991), the weighting takes into account the fact that some items are considered more useful than others.

We chose the financial analysts and portfolio managers as a particular group of external users of the annual reports. We directly circulated 62 questionnaires to the population of the Tunisian financial analysts and portfolio managers. We obtained a response rate amounting to 64.51%[10]. The sample size on which our study is about consists of 40 analysts working on behalf of 21 brokers in Tunisia. The respondents were asked to express the degree of usefulness of the different items by giving a numerical answer on the five-point Likert scale (1= Not useful at all, 2 = Little useful, 3 = Somewhat useful, 4 = Useful and 5 = Very useful). This approach is to give each item a weighting which reflects its relative utility according to the chosen user-group (Barako et al., 2006; Prencipe, 2004; Bertrand, 2000; Michailesco, 1999; Firth, 1984 and Baker and Haslem, 1973). Each disclosed item is weighted by its weight which corresponds to the arithmetic mean of the points that are awarded to it. The computational procedure used is as follows: an item takes 'the weight' which was awarded by analysts if it is disclosed and takes '0' otherwise. Thus, the 'proxy' of the extent of the voluntary disclosure in the annual reports is calculated as follows:

[10] This rate is 63% in the study by Chow and Wong-Boren (1987).

$$\textbf{IDIS}_{\mathbf{i}}\ \textbf{Weighted} = \sum_{J=1}^{72} \mathbf{x}_{\mathbf{ij}} * \mathbf{P}_{\mathbf{j}} \Big/ \sum_{J=1}^{Mi} \mathbf{P}_{\mathbf{j}}$$

With: M_i: number of maximum items whose disclosure is possible for company "i"; $M_i \leq 72$; x_{ij} = "1" If the j^{th} item is disclosed and = "0" otherwise; P_j: j^{th} item weight.

3.2.2. Family control

For Morck and Yeung (2004), there is not a single definition of the 'family business' in the literature about the family businesses. Among the difficulties that face the researcher to identify whether or not a company is family-run, we can mention: the legal vacuum, the absence of a particular size and choice of the family limit. In general, the researchers define the family business in an operational way using the components of the family's involvement in the business: ownership, management and succession.

According to Villalonga and Amit (2006), the definition of a family business is based on three elements: property, control (through voting rights) and participation in the company's management. However, in their definition of the family business, these authors do not require a threshold of property for the family, but require that a family member should be involved in its management. While for Astrachan and Kolenko (1994): "the family business is defined as a company in which one family owns at least 50% of the capital, for the firms which do not calls upon savings, and 10% in the opposite case, and has at least ten years of continuous activity. Besides, it should have more than one member of the family involved in the activity of the company, while stating that the owner must have the intention to transfer the business to the next generation.

The definition proposed by Rosenblatt et al. (1985) will be adopted in our study. These authors consider any family-run company in which most ownership or control is in the hands of a single family, provided that at least two of its members are directly involved in the management (members of the board of directors). This variable "**FAM**" is dichotomous (dummy) and equal to '1' if the company is controlled by a family and equal to '0' otherwise.

3.2.3. *Independence of the Board of Directors*

Chtourou et al. (2006) define the outside directors as people who are not employees, do not have a business relationship with the company and have no apparent family relationship with the company's CEO. For Nekhili and Fakhfakh (2008), the non-executive independent directors include all the outside directors whose only relationship with the company is to be part of its board of directors. Patelli and Prencipe (2007) adopted a clear definition of the independent directors. They do not consider the independent directors, in addition to the criteria of the legal definition, those who are members of several boards of directors and / or are members of the same board for a long period of time. The GGGPTC defines an independent director as "any person free of any direct or indirect relationship with the company, with its group companies or its management. This independence is likely to guarantee his freedom of judgment in the exercise of his mandate. The independent director role is to preserve the company's interest without promoting the interests of a particular class of shareholders over another or neglecting the interests of other stakeholders."

We measure the independence of the board of directors **INDB** according to the proportion of the outside directors who are supposed to be more proficient and more conscientious of the shareholders' interests than the inside ones. We considered outside directors those who do not have family ties with the management and do not directly have a significant stake in the company.

INDB = (Number of outside directors / total number of directors) * 100

3.3. Presentation of the empirical models

We would like to explain the interdependence effect (mediation) between the internal mechanisms of corporate governance (family control and independence of the board) and the voluntary disclosure through three regression models on Panel data. This will enable us to test our hypothesis by following the three steps mentioned by Barron and Kenny (1986).

Tests of the mediating effect	
$\mathbf{IDIS}_{it} = \delta_0 + \delta_1 \mathbf{FAM}_{it} + a_{it}$	**(1st step)**
$\mathbf{INDB}_{it} = \lambda_0 + \lambda_1 \mathbf{FAM}_{it} + v_{it}$	**(2nd step)**
$\mathbf{IDIS}_{it} = \gamma_0 + \gamma_1 \mathbf{INDB}_{it} + \gamma_2 \mathbf{FAM}_{it} + c_{it}$	**(3rd step)**
The i and t indices correspond to the company and year (2003-2008)	
IDIS = Index of voluntary disclosure. **FAM** = 1 if the firm is controlled by a family, and = 0 otherwise. **INDB** = (Number of outside directors / total number of directors) * 100.	

4. Empirical Results and Discussion

4.1. Descriptive Statistics

We first present the evolution of the IDIS variable and then apply the non-parametric Wilcoxon test on this variable along the years: 2003-2005, 2005-2008 and 2003-2008. Afterwards, we present the descriptive statistics of the categories of voluntary information and finally a summary of the descriptive statistics of the study variables.

Table 3: Evolution of the voluntary disclosure index IDIS over the period (2003-2008)

	2003	**2004**	**2005**	**2006**	**2007**	**2008**
	IDIS (%)	**IDIS (%)**	**IDIS (%)**	**IDIS (%)**	**IDIS (%)**	**IDIS (%)**
Mean	39,25	45,28	46,09	52,28	52	53,19
Median	42,42	43,96	46,34	54,20	53,02	54,09
Max	57,61	67,40	65,9	72,70	76,17	74,44
Min	14,59	22,56	17,29	22,81	20,21	10,10
Standard deviation	11,73	12,74	12,89	12,79	13,74	13,76
N	21	20	23	26	26	28

Based on the means and medians values of the IDIS variable, we notice that the extent of voluntary disclosure is low. This extent is similar to those found in other countries of the MENA zone. As an illustration, Hassan et al. (2006) argue that Egyptian companies disclose, on average, 48% of the overall voluntary items existing in the established list of items. The maximums of the IDIS variable have risen from 57% in 2003 to about 75% in 2008. Furthermore, by examining the means and medians of this variable, we noticed an increase in the extent of voluntary disclosure between 2003 and 2008. This rise was remarkable between 2003 and 2004 and between 2005 and 2006.

Table 4: Results of Wilcoxon tests for the index of voluntary disclosure IDIS

	2003-2005	2005-2008	2003-2008
	IDIS	**IDIS**	**IDIS**
Z	-2,51**	-2,58***	-3,09***
Sig.	0,011	0,009	0,001
N	21	22	20

** And *** show a significance below the level of 5% and 1% respectively

We notice that the test is significant at 5% for the years 2003-2005. Moreover, it is significant at 1% over the years 2005-2008 and 2003-2008. This means that the extent of voluntary disclosure is significantly different at the level of 1% between the periods before and after the promulgation of the Law on the security of the financial relations. In other words, the extent of voluntary disclosure "significantly" increased between 2003 and 2008.

Table 5: Descriptive statistics of voluntary information categories

Variables	Mean	Median	Standard deviation	Minimum	Maximum	N
IDIS (category 1)	66,12	66,56	16,76	19,26	100	144
IDIS (category 2)	65,65	60,64	27,55	0	100	144
IDIS (category 3)	46,15	47,22	26,22	0	100	144
IDIS (category 4)	33,98	26,84	21,89	0	88,18	144
IDIS (category 5)	44,39	47,145	17,95	0	83,81	144
IDIS (category 6)	39,57	48,88	35,84	0	100	144
IDIS (category 7)	31,12	22,20	28,91	0	100	144
IDIS (category 8)	38,65	37,26	28,30	0	85,62	144

category 1: Background Information, **category 2**: Summary of historical results, **category 3**: Key non-financial statistics, **category 4**: Projected information, **category 5**: Management discussion and analysis, **category 6**: Information on the intangibles, **category 7**: Social and environmental Information and **category 8**: Information on corporate governance.

From this table, we remark that the extent of the background information and of that about the summary of historical results is quite high (the means and medians of these variables are in the order of 65%). We also notice that the extent of the disclosure of key non-financial statistics and that of information about the management discussion and analysis are low (the means and medians of these variables are in the order of 45 %). It should be noted that the extent of information disclosure on corporate governance and that about the intangibles are relatively low (the means of these variables are respectively around 37% and 39%). We can see that the extent of the disclosure of projected information is low (the mean of this variable is of the order of 33%). It should be noted that the extent of disclosure of social and environmental information is very low (the mean of the variable is of the order of 31%).

Table 6: Summary of the variables descriptive statistics

	N	Mean	Median	Standard deviation	Minimum	Maximum
IDIS (%)	144	48,54	50,62	13,70	10,10	76,17
INDB (%)	144	24,07	22,22	22,02	0	77,77
	N		**Variable = 1**		**Variable = 0**	
FAM	144		50 (34,72%)		94 (65,27%)	

IDIS = Index of voluntary disclosure.
INDB = (Number of outside directors / total number of directors) * 100.
FAM = 1 if the firm is family-controlled and = 0 otherwise.

From the table above, we notice that the overall extent of voluntary disclosure is not very high (the means and medians of the IDIS variable are around 50%). The extent of voluntary disclosure is considered a little but not very low. We can see that the boards of directors of the companies in our sample are generally not independent: the mean and median of the INDB variable reached 24.07% and 22.22% respectively. The standard deviation of this variable is very close to its mean and increases to 22.02%. This could be explained by the variability between the firms of the sample regarding the independence of their boards. For variable FAM, we notice that more than the third of the cases represent family-controlled companies. This proportion reflects a characteristic of the Tunisian economic context which is the dominance of the family-controlled businesses.

2.2. Results and discussion of the analysis of the mediating effect

In what follows, we will test the four mediation conditions outlined by Barron and Kenny (1986) while performing all the specific tests carried out on panel data to test the mediating effect of the board independence regarding the impact of the family control on the extent of voluntary disclosure. The adopted method was explained by Caceres and Vanhamme (2003) as well as by MacKinnon et al. (2007). Similarly, Aktanuddin and Hossain (2008) adopted this method to test the mediating effect of ownership structure regarding the effect of the investment opportunity on voluntary disclosure. In all the three regressions presented above (single and multiple) and in order to deal with the problem of heteroscedasticity, if any, we used the option "robust" available on the STATA 10 software.

Table 7: 1^{st} step test of the mediating effect

	Regression equation: $IDIS_{it} = \alpha_0 + \alpha_1 FAM_{it} + a_{it}$			
	Expected signs	**Coefficients**	**t**	**P>|t|**
Constant	?	52,448***	41,53	0,000
FAM	Négative	-11,226***	-3,35	0,001
Number of observations		144		
Fisher test (fixed effets)		7,89***		
Prob > Fisher		(0,0000)		
Lagrange multiplier test (random effects)		100,12***		
Prob > Chi-2		(0,0000)		
Hausman test		53,53***		

Prob > Chi-2	(0,0000)
Adjusted R^2 (%)	4,37
Fisher test	11,24***
Prob > Fisher	(0,0011)
*** Indicates a significance at a level below 1%	
IDIS = overall index of voluntary disclosure. **FAM** = 1 if the firm is family-controlled, and = 0 otherwise.	

The tests of the presence of fixed and random individual effects are significant. Since the Hausman's test is significant, we can choose the fixed effect model. Being significant, Fisher's test of the model affirms the right model specification of the first stage. Based on the above table, we find that coefficient (α_1) of the FAM variable is negative and highly significant at (1%). It represents the total effect (-11.226) of the family control on the extent of voluntary disclosure. The overall effect is the sum of direct and indirect effects (i.e. mediated). The statistical significance of coefficient (α_1) makes us confirm that the first condition is satisfied. As a consequence, we can say that family-controlled companies tend to have a lower extent of voluntary disclosure than other non-family controlled firms.

Table 8: 2nd step test of the mediating effect

	Regression equation: $INDB_{it} = \lambda_0 + \lambda_1 FAM_{it} + v_{it}$			
	Expected signs	**Coefficients**	**t**	**P>|t|**
Constant	?	27,967***	12,04	0,000
FAM	Négative	-11,213*	-1,83	0,070
Number of observations		144		
Fisher test (fixed effets)		8,89***		
Prob > Fisher		(0,0000)		
Lagrange multiplier test (random effects)		113,58***		
Prob > Chi-2		(0,0000)		
Hausman test		5,76**		
Prob > Chi-2		(0,0164)		
Adjusted R^2 (%)		1,46		
Fisher test		3,34*		
Prob > Fisher		(0,0704)		
*, ** And *** indicate a significance at a level below 10%, 5% and 1% respectively				
FAM = 1 if the firm is family-controlled, and = 0 otherwise. **INDB** = (Number of outside directors / overall number of directors) * 100.				

The tests of the presence of fixed and random individual effects are significant. As the Hausman test is significant, this will enable us to choose the fixed effect model. Being significant, Fisher's model test affirms the right model specification of the second stage. Through the table above, we can see that coefficient (λ_1) of the FAM variable is negative and significant at (10%). It represents the effect of the family control on the independence of the board. The statistical significance of coefficient (λ_1) makes us confirm that the second condition is satisfied. As a result, we can say that the family control of the company tends to reduce the independence of its board of directors. Indeed, the family control of the company involves the presence of family members in its board of directors the thing which reduces the independence of the latter.

Table 9: 3rd step test of the mediating effect

	Regression equation: $IDIS_{it} = \gamma_0 + \gamma_1 INDB_{it} + \gamma_2 FAM_{it} + c_{it}$			
	Expected signs	**Coefficients**	**t**	**P>|t|**
Constant	?	49,035***	25,57	0,000
INDB	Positive	0,122**	2,39	0,018
FAM	Négative and non significant	-9,858***	-2,79	0,006
Number of observations		144		
Pearson's correlation coefficient (FAM ICA)		0,132		
Fisher's test of (fixed effects)		7,75***		
Prob > Fisher		(0,0000)		
Lagrange multiplier test (random effects)		72,52***		
Prob > Chi-2		(0,0000)		
Hausman's test		18,01***		
Prob > Chi-2		(0,0001)		
Adjusted R^2 (%)		7,71		
Fisher's test		8,55***		
Prob > Fisher		(0,0004)		

** and *** indicate a significance at a level below 5%, and 1% respectively

IDIS = overall index of voluntary disclosure. **FAM** = 1 if the firm is family-controlled, and = 0 otherwise. **INDB** = (Number of outside directors / total number of directors) * 100.

The tests of the presence of fixed and random individual effects are significant. Due to the significance of Hausman's test, we will choose the fixed effects model. Being significant, Fisher's test affirms the right specification of the third stage model of the mediating effect test. By looking at the table above, we can say that coefficient (γ_1) of the variable INDB is positive and significant at (5%). It represents the effect of the board's independence on the extent of voluntary disclosure. The statistical significance of coefficient (γ_1) makes us confirm that the third condition is satisfied. Hence, we can say that the independence of the board tends to increase the extent of voluntary disclosure. More specifically, the INDB mediating variable significantly influences the IDIS variable when this relationship is controlled by the FAM variable. In the table above, we notice that coefficient (γ_2) of the FAM variable is negative and highly significant at (1%). It represents the effect of the family control on the extent of voluntary disclosure, controlled by an independent board of directors. In addition, we notice that $\gamma_2 = -9.858 > \alpha_1 = -11.226$, that is to say that the coefficient relating to the family control in the third step is not lower than the one of this variable in the first step. The statistical significance and the value of coefficient (γ_2) makes us state that the fourth condition is not verified. It should be noted that coefficient γ_2 reflects the direct effect (-9.858) of the FAM Variable on the IDIS one. In the case of a full mediation, the significant influence of FAM on IDIS should disappear when the effect of INDB on IDIS is statistically controlled. In this case, coefficient γ_2 is non-significant.

Since the fourth condition is not satisfied, we cannot confirm the existence of a full mediating effect of the board of directors' independence on the relationship between the family control and the extent of voluntary disclosure. Nevertheless, since the first three conditions are met, we can then confirm the existence of an effect of a partial mediation of the board's independence regarding the impact of the family control on the extent of voluntary disclosure.

Thereafter, we can say that our hypothesis is partially confirmed. To conclude, we can say that all the conditions are met except the fourth and final condition. There is, then, a partial mediation, in other words the effect of FAM variable on IDIS occurs both directly and indirectly. In the case of a full mediation, the total effect of FAM variable on IDIS is completely produced indirectly. Coefficients λ_1 and γ_1 help assess the indirect effect of FAM on IDIS, which means that the impact of FAM variable on IDIS passing through INDB. This indirect effect is equal to: $\lambda_1 * \gamma_1 = -11{,}213 * 0{,}122 = -1{,}367$. On observing the coefficients found, it appears that: total effect = direct effect + indirect effect, or: $\alpha_1 = \gamma_2 + \lambda_1 * \gamma_1$.

The result found could be explained by the choice of the measure used to operationalize the INDB variable. Indeed, it is likely that the criteria used are not sufficient to qualify an administrator to be "external" to the company. However, the use of selected criteria is justified by the unavailability of data on the directors' profile of the Tunisian companies. In this case, the directors said to be independent may lack real independence. In this way, Delga (2009) questions the concept of independent director and wonders about its existence and possibility of having particular power that truly distinguishes him from other administrators. For this author, at best, it is about either a classical director, and therefore like the others, considered as independent but this notion is inadequate and not entitled to a specific power or some kind of an auditor or censor without a proper quality of a director. Similarly, Barako et al. (2006), state that the directors may be considered to be outsiders to the company without being really independent. The identification of an independent director is not clear in Tunisia. It has not been defined in the CCC that does not require companies to include such directors in the boards. When the outside directors are appointed in the board of a company, they are not considered independent directors but merely leaders' advisers (Chakroun and Matoussi, 2012). In addition, according to stewardship theory, a board dominated by outside directors is not an effective mechanism of control since the latter are not adequately involved in the company management.

Conclusion

The emergence of numerous changes related to the informational environment on TSE, the potential harmonization with the IFRS and the development of corporate governance in economic life; highlighted the strategic role currently occupied by voluntary disclosure in the annual reports in Tunisia. This paper analyses the evolution of voluntary disclosure between the periods before and after the promulgation of the Law on the strengthening of the security of the financial relations and the effect of interdependence between the family control, the independence of the board of directors and the scope of voluntary disclosure. More particularly, it tries to highlight the indirect relationship between the family control of the company and the extent of voluntary disclosure in the annual reports that could pass through the independence of the board of directors. To achieve this, we conducted statistical analyses on a sample of listed Tunisian companies of the non-financial sector in the years 2003-2008 and we circulated a questionnaire to 40 Tunisian financial analysts and portfolios managers.

Through the found results, we noticed an increase in the extent of voluntary disclosure along the period following the promulgation of the Law on the strengthening of the security of financial relations compared to the period prior to the promulgation of this Law. In addition, we have concluded that the extent of disclosure of background information and about the summary of historical results is the highest while that of projected information and about the social and environmental is the lowest. Moreover, the performed analyses show that the independence of the board of directors is a partial mediator of the impact of family control on the extent of voluntary disclosure. In other words, the impact of the family control on the extent of voluntary disclosure occurs both directly and indirectly.

This research contributes to the literature on financial transparency and voluntary disclosure and on corporate governance in the emerging countries. The contributions of our research are located on both the contextual and methodological level. On the contextual level, we analyzed the effects of interdependence between the extent of voluntary disclosure and two internal mechanisms of corporate governance on a sample of Tunisian companies. On the methodological side, we applied the Botosan index to the Tunisian context.

All of the results of this research have theoretical and practical implications. From a theoretical point of view, it highlighted the existence of indirect link between the family control and the extent of voluntary disclosure which has not been considered by the previous studies that focus on the direct linkages between voluntary disclosure and its determinants. From a practical point of view, it promotes the taking into account of the combined effects of governance as determinants of voluntary disclosure mechanisms.

Like any research work, ours has some limitations. Among other things, it was better to add the Sobel (1986) indirect effect test to support our testing for mediation. The sample size is small especially when we excluded the companies of the financial sector. In addition, the results of this study cannot be generalized since we only focused on listed companies operating in the TSE.

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APPENDIX N°1: Distribution of company sample by sector of activity

Sector of activity	Companies	Codes
TELECOMMUNICATIONS	SOCIETE TUNISIENNE D'ENTREPRISES DE TELECOMMUNICATIONS	SOTET
CONSUMER SERVICES	MAGASIN GENERAL	MAG
	AUTOMOBILE RESEAU TUNISIEN ET SERVICES	ARTES
	SOCIETE NOUVELLE MAISON DE LA VILLE DE TUNIS	MNP
	SOCIETE TUNISIENNE DES MARCHES DE GROS	MGR
TRAVEL AND LEISURE	SOCIETE TUNISIENNE DE L'AIR	TAIR
	KARTHAGO AIRLINES	KAIR
	PALM BEACH HOTELS TUNISIA	PBHT
HEALTH	SOCIETE DES INDUSTRIES PHARMACEUTIQUES DE TUNISIE	SIPHA
	SOCIETE ADWYA	ADWYA
CONSUMER GOODS	SOCIETE L'ACCUMULATEUR TUNISIEN	ASSAD
	SOCIETE GENERALE INDUSTRIELLE DE FILTRATION	GIF
	SOCIETE TUNISIENNE D'EQUIPEMENT	STEQ
	SOCIETE TUNISIENNE DES INDUSTRIES DE PNEUMATIQUES	STIP
FOOD AND DRINKS	SOCIETE FRIGORIFIQUE ET BRASSERIE DE TUNIS	SFBT
	SOCIETE DE PRODUCTION AGRICOLE DE TEBOULBA	SOPAT
	EL MAZRAA	MAZ
	TUNISIE LAIT	TLAIT
HOUSEHOLD PRODUCTS AND PERSONAL CARE	ELECTROSTAR	LSTR
BUILDINGS AND BUILDING MATERIALS	SOCIETE IMMOBILIERE ET DE PARTICIPATION	SIMPAR
	ESSOUKNA	SOKNA
	SOCIETE IMMOBILIERE TUNISO-SEOUDIENNE	SITS
	SOCIETE MODERNE DE CERAMIQUE	SOMOC
INDUSTRIAL GOODS AND SERVICES	SOCIETE INDUSTRIELLE D'APPAREILLAGE ET DE MATERIELS ELECTRIQUE	SIAME
	SOCIETE TUNISIENNE DE VERRERIES	SOTUV
CHEMISTRY	AIR LIQUIDE TUNISIE	AL
	SOCIETE CHIMIQUE	ALKIM
	SOCIETE DES INDUSTRIES CHIMIQUES DU FLUOR	ICF
RAW MATERIALS	SOCIETE TUNISIE PROFILES ALUMINIUM	TPR
OIL AND GAS	SOCIETE DE TRANSPORT DES HYDROCARBURES PAR PIPELINES	STPIL

APPENDIX N°2: Weight of items

Items of (Botosan, 1997) index			
1	**Background Information**		
	1	A statement of corporate goals or objectives is provided	4,33
	2	A general statement of corporate strategy is provided	4,5
	3	Actions taken during the year to achieve the corporate goals are discussed	4,25
	4	Planned actions to be taken in future years are discussed	4,47
	5	A time frame for achieving corporate goals is defined	4,25
	6	Barriers to entry are discussed	3,8
	7	Impact of barriers to entry on current profits are discussed	3,85
	8	The competitive environment is discussed	4,53
	9	The impact of competition on current profits is discussed	4,35
	10	The impact of competition on future profits is discussed	4,5
	11	A general description of the business is provided	3,88
	12	The principal products produced are identified	3,98
	13	Specific characteristics of these products are described	3,75
	14	The principal markets are identified	4,3
	15	Specific characteristics of these markets are described	4,13
2	**Summary of historical results**		
	16	Return-on-assets or sufficient information to compute return-on-assets (i.e. net income, tax rate, interest expense and total assets) is provided	4 ,33
	17	Net profit margin or sufficient information to compute net profit margin (i.e. net income, tax rate, interest expense and sales) is provided	4,32
	18	Asset turnover or sufficient information to compute asset turnover (i.e. sales and total assets) is provided	3,95
	19	Return-on-equity or sufficient information to compute return-on-equity (i.e. net income and stockholders equity) is provided	4,22
	20	A summary of sales and net income for at least the most recent eight quarter is provided	4,22
3	**Key non-financial statistics**		
	21	Number of employees	3,58
	22	Order backlog	3,92
	23	Percentage of order backlog to be shipped next year	4,23
	24	Percentage of sales in products designed in the last five years	3,95
	25	Market share	4,6
	26	Amount of new orders placed this year	4,15
	27	Units sold	4,10
	28	Unit selling price	3,78
	29	Growth in units sold	4,08
	30	Production lead time	3,65
	31	Sales growth in key regions not reported as geographic segments	3,85
	32	Volume of materials consumed	3,7
	33	Price of materials consumed	3,95

	34	Growth in sales of key products not reported as product segments	3,98
4	**Projected information**		
	35	A comparison of previous earnings projections to actual earnings is provided	4,45
	36	A comparison of previous sales projections to actual sales is provided	4,47
	37	The impact of opportunities available to the firm on future sales or profits	4,2
	38	The impact of risks facing the firm on future sales or profits is discussed	4,27
	39	A forecast of market share is provided	4,35
	40	A cash flow projection is provided	4,13
	41	A projection of future profits is provided	4,5
	42	A projection of future sales is provided	4,6
5	**Management discussion and analysis**		
	43	Change in sales	4,3
	44	Change in operating income	4,3
	45	Change in cost of goods sold	4,18
	46	Change in cost of goods sold as a percentage of sales	3,98
	47	Change in gross profits	4,35
	48	Change in gross profits as a percentage of sales	4,17
	49	Change in selling and administrative expenses	3,85
	50	Change in interest expense or interest income	4
	51	Change in net income	4,55
	52	Change in inventory	3,95
	53	Change in account receivable	4,22
	54	Change in capital expenditures or R & D	3,88
	55	Change in market share	4,45
		Items added to (Botosan, 1997) index	
6	**Information on the intangibles**		
	56	Description of key customers	3,9
	57	Description of key suppliers	3,87
	58	Description of the activities of R & D	3,65
	59	Results of R & D implemented	3,78
7	**Social and environmental Information**		
	60	Rate of employee absenteeism and number of strike days	3,13
	61	Training and skills development for employees	3,58
	62	Description of charitable donations, grants, financial aid	2,68
	63	Description of the firm's commitment to the community for specific social projects(community activities, cultural, educational, recreational and sports)	2,68
	64	Statement of activities for the protection and preservation of the physical environment(natural resources conservation, energy management, wildlife and flora ...)	3,08
	65	Description of activities to reduce pollution related to business activities	2,95
	66	Production and promotion of ecological products (prohibiting the use of chemical components harmful to health and ecosystems, recyclable packaging design…	2,85

8	Information on corporate governance		
	67	Ownership structure (major shareholders)	4,65
	68	Percentage ownership by major shareholders	4,55
	69	Composition of the Board	4,27
	70	The mandates of the administrators	3,82
	71	Profile of administrators	3,85
	72	The frequency of meetings of the Board	3,55

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