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An Applied Study via Structural Equation Modeling on Disclosure

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Abstract: The aim of this study is to diagnose whether there is a relationship between company characteristics and disclosure. Therefore, the study adopts and uses an architecture which includes an applied study and investigation which demonstrates the impacts of companies managerial and financial properties on companies voluntary disclosure via structural equation modeling that is high level research technique and data organization method. In the first step of the study, we discussed the financial and management aspects of company characteristics, followed by a discussion on voluntary disclosure determinants. The hypotheses set forth in the study were tested by the establishment of a structural model. Using data from 237 listed companies, we find that the financial and management characteristics of companies have a direct influence on the level of disclosure. As a result of this finding we say information asymmetry tends to decrease in companies with a strong financial structure along with advanced corporate administration values. Such decrease in information asymmetry brings along an increase of the disclosure level, which in turn has positive effects on a company's market values which attract more people and investor to developing markets and countries around the world.

Key words: Voluntary disclosure, management characteristics, financial characteristics, information asymmetry, structural equation modeling

INTRODUCTION

Taking into consideration that information symmetry is a fundamental building block of companies, it is well-known fact that disclosure is one of the most essential targets of accounting reporting systems. As emphasized by Melis (2004) and Hope (2003), a corporate management system, a good level of disclosure and sufficient information is required to achieve an increase in information sharing equation among all parties and to hold in-house employees responsible for their acts. Disclosure is considered as one of the most fundamental components of information symmetry and equal information sharing (Cheung *et al.*, 2010). Accessibility of information is essential to minimize inequality of information distribution between out-house and in-house parties as well as to allow investors to assess a company's performance in general. According to Beretta and Bozzolan (2008), the quantity and quality of disclosure increases the amount of information delivered to investors, while decreasing any errors that might occur in forecasts made by analysts. This means that disclosure, as a sign of enterprises' good faith, is a manifestation of

the connections established with investors. With an increased awareness level of information users, there has been an increased public pressure to shift accounting information from an asymmetric plane to a symmetric one. In other words, decreased lack of information reduces the gap between the management and the external world, increases liquidity, reduces costs and creates a positive reflection on companies' growth opportunity.

In this context, the need emerges to mention certain points that distinguish the purpose of the present study from other studies, making the present study even more important. First, insufficient accounting notifications and audits are among the major reasons that gave rise to, i.e., have triggered the financial crisis that broke out in the world economy in recent years. As a reflection of that, Turkish regulatory authorities have begun to develop additional measures to ensure a better corporate governance. Second, company characteristics and the relation between disclosure and growth opportunity have to be analyzed and discussed to shed light on future studies that will be carried out with respect to Turkey, because it is certain that this will help to determine whether an agency problem might occur between the

owners-managers and stakeholders remaining in minority. Compared to investors turning towards developed markets of the USA or Europe, investors, who turn towards developing markets such as Turkey, are in the need of more accounting disclosures so that they can make a proper assessment of a company's performance. Third, good corporate management and disclosure are of vital importance in order to attract the continuous attention of international investors and to achieve a reduction in companies' capital costs. Fourth, companies with decreased costs, while giving more information to investors, should be expected to have improved financial indicators. Last, the statistical analyses of the study are of huge importance both in terms of the use of structural equation and the reflection of latest data relevant for Turkey. To put forth the study in a concrete manner, 237 companies included into the XULUS (IMKB NATIONAL INDEX) index of the Istanbul Stock Exchange have been taken as sample.

Overall, the results of our paper provide preliminary evidence on the importance of disclosure in financial reports. The results of our tests suggest that when company' characteristics are likely to have larger impact on disclosure which has a great important for decision makers and stakeholders. Our paper also aims a potentially important policy implication, relating to the selective disclosure of information that is useful but not price-sensitive.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Information access will bring along increased information symmetry and thereby provide important opportunities for investors to make a proper assessment of company performance (Cheung *et al.*, 2010). Studies recorded in literature have revealed that a sufficient level of accounting disclosure might lead to three probable financial results for companies: increased liquidity, decreased capital costs (Botosan and Plumlee, 2002) and increased information brokering (Lang and Lundholm, 2000). Comprehensive studies on company financial properties and information sharing have frequently emphasized company size as a significant variable (Eng and Mak, 2003; Bujaki and McConomy, 2002). Company size may stand for certain company properties including competitive advantage, information production costs, management capacity, policy costs and consultancy. Archambault and Archambault (2003) documented an unstable relation between company size, measured on basis of total assets and total disclosure

score, whereas Ahmed and Courtis (1999) indicated a positive relation between leverage and disclosure level. Companies with a higher debt ratio in their capital structure have higher agency costs. Therefore, no definite result could be obtained on the position of capital structure. Intuitively, one can consider that the level of disclosure gets higher as an increase occurs in leverage. The reason is that debt increases the number of stakeholders, who have big personal interests without monitoring a company's disclosures. According to the theory of agency, managers aiming at a reduction in creditors' monitoring costs will have to disclose more information, which will, in return, prevent creditors from exercising their rights of execution. Companies with high financial leverage will have a higher level of transparency because of the higher amount of information demanded by creditors.

Another variable that is addressed is the effect of both accounting performance (Miller, 2002) and market performance on the level of disclosure. On the other hand, net sales profit, profit growth, dividend growth, asset yields and equity profitability have been utilized as indicators of profitability. Francis *et al.* (2005) reported that companies, which use external financing to a large extent, are more sensitive in terms of disclosure, while a decrease in capital costs is observed in companies with a high debt level, which, in turn, brings along an increase in growth opportunities. A company's management properties have a significant effect on achieving a sufficient quality level in accounting and separate disclosures. In a study on the markets of developing countries, Barako *et al.* (2006) emphasized that information sharing is influenced by certain variables such as ownership structure and corporate administration properties of companies. Homogenous distribution in ownership structure in conjunction with independence in the board of directors has created a positive effect on disclosure quality. In certain studies, a positive relation was identified between disclosure level and the board of directors' ability to act independently, as a reflection of aforementioned relation. For instance Chen and Jaggi (2000) reported a positive relation between the independence of the board of directors and financial disclosures, but this relation is weakened in companies that are controlled by a family. Chau and Gray (2002) indicate a positive relation between disclosure level and external ownership, whereas Eng and Mak (2003) reported a negative relation between disclosure level, external directors and management ownership. Gul and Leung (2004) determined that top manager duality and independence of the board of directors stay in relation to a low level of disclosures and asymmetric information.

Besides, studies analyzing the relation between accounting disclosure and ownership structure revealed a linear relation (Healey and Palepu, 2001; Adams *et al.*, 2010). Miller (2002) revealed that managers make strategic changes to the limits of disclosures on the basis of their own personal knowledge on future changes in earnings. In his empirical study on developing markets, Lins (2003) determined significant relations between ownership structure and company value. In a study on the Korean market, Byun *et al.* (2011) concluded an increased information asymmetry in companies with a high ownership density. Similarly, Jiang *et al.* (2011) carried out a study on New Zealand companies, revealing that ownership concentration has a positive effect on disclosure and company value. On the other hand, certain studies revealed that managers do not like any bad surprises in income statements and that they want to turn the predictions of analysts into manageable targets (Matsumoto, 2002). Studies on developing markets indicated that an intensified ownership concentration might lead to agency disputes between internal owners and external investors (Claessens *et al.*, 2002; Dey, 2008; La-Porta *et al.*, 1999; Chau and Gray, 2010). Accordingly, it has been assumed that the current stock ratio of the five biggest stakeholders can be associated with disclosure and transparency degrees. Chen and Jaggi (2000) found that the ratio of independent board chairmen is associated with mandatory disclosures. In companies, where a major part of equity is owned by a family, there is very little difference between equity owners and managers. Therefore, equity owners might tend not to demand a higher level of disclosures, because they already have higher access to internal information (Donnelly and Mulcahy, 2008). Lemmon and Lins (2003) put forth that ownership structure creates an important effect on company value. This effect is more profound especially during crisis periods. In that case, the demand for public disclosures will be lower in companies that are under the control of a family compared to those not. According to Ng (2005), a more successful company performance can be observed in companies with a high degree of family ownership and that this has an improving effect on corporate administration practices. Haniffa and Cooke (2005) revealed that the scope of disclosure is significantly low in Malaysian companies, in which family members constitute the majority of the board of directors.

Similarly, Chau and Gray (2002) determined that family-controlled company make fewer disclosures. Because stakeholders can access information by themselves-resulting in a lower demand for information-companies controlled by “insiders” or families are less willing to disclose information. This negative relation may

be explained by management layout; and the effects thereof may deny the positive effects of agency cost explanations. This is also supported by data obtained by Abdullah *et al.* (2004), who indicated that the theory of management layout has a more dominant effect compared to the theory of agency. This effect has a strong presence also according to Brown and Caylor (2006). Accordingly, there is a strong association between a company’s management properties and operational performances. According to Byard *et al.* (2006), who dealt with the quality of both management properties and information obtained by analysts, any increase in the quality of corporate management practices brings along an increase in the quality of information, resulting in a strengthened possibility for analysts to make correct predictions and decisions.

At the same time, it is also probable that a top manager serving as board chairman might have a dominant personality and confront role duality. In other words, if a person holds a strong position in the board of directors, such person might refuse to share negative information with outsiders, because of a board chairman’s liability to monitor top managers along with other directors of the board. Besides, the possibility might arise that a top manager displays opportunistic behaviours due to his dominance over the board. According to Tsui *et al.* (2001), a negative relation has been detected between the effects of internal audit and company growth in companies, where CEO domination is observed. However, there have been also results that indicate the contrary. Cheng and Courtenay (2006) determined that there is no relation between voluntary disclosure and the size of the board of directors and the CEO and the board chairman being the same person. In cases, where a top manager duality is in question, a top manager is supposed to monitor also his own decisions and acts, which might lead to a lack of sufficient protection for high stakeholder interests. Gul and Leung (2004) observed a negative relation between top manager duality and the level of voluntary disclosure.

The major duty of the audit committee is to make meetings at regular intervals with external audits to review financial statements, audit processes, the internal accounting system and the controls thereof. Jaggi and Leung (2007) noted that the audit committee has an important influence on profit management. A strong audit committee have shown positive reflections on information symmetry even in companies with a high ownership degree. Therefore, the establishment of an audit committee will allow for continuous communication between the board of directors and external auditors. Fields *et al.* (2001) stated that an important deficiency of

numerous studies on disclosure is that said studies lack to address the internal nature of decisions made on the properties of disclosure. If researchers fail to control the determinants of disclosure policies, their conclusions about the economic results of disclosure properties will fail to reflect the truth. Therefore, it is assumed that corporate disclosure strategy will have an influence on the properties of disclosure, on the properties of earnings and stock exchange valuation. The value connection of disclosure properties are tested for stock exchange valuation purposes, because current literature indicates that voluntary disclosure going beyond financial performance measures is value-connected for investors since it helps to fill out the gap between traditional financial statements and market valuation requirements (Leuz, 2003; Botosan and Harris, 2000; Healey and Palepu, 2001). One of the most important duties of a board of directors is to audit the reliability of a financial accounting process (Anderson *et al.*, 2004). Healey and Palepu (2001) observed that disclosure properties constitute a topic of high importance for external stakeholders. Klein (2002) noted that this depends on director characteristics. Moreover, directors, who possess a larger amount of human and social capital, may develop more skills and initiatives to eliminate information asymmetry so as to protect their own reputation.

Recent studies and regulatory activities put emphasis on the important role played by a proficient audit committee in protecting the interests of stakeholders. Anderson *et al.* (2004) asserted that the establishment of an audit committee is an important factor in assuring the correctness of financial reports, while bringing along less debt costs. Defond *et al.* (2005) reported that the financial expertise of audit committee members is an important factor that allows for monitoring efficiency. Karamanou and Vafeas (2005) observed that an audit committee with sufficient financial knowledge improved the quality of information disclosures. The aim of establishing an audit committee is to create a channel for external company auditors to communicate their findings to the board of directors. However, if an audit committee serves as a sub-committee of the board of directors, a reduction in its efficiency may result, because the audit committee will lack the ability to by-pass the board of directors. Initiatives indicating the fulfilment of supervisory duties by audit committees are determined by the members' independence and skills, to a large extent. Audit committees ensure a proper financial reporting process as well as the compliance with legal and regulatory requirements. There are diverse evidences with regard to the effect of an independent audit committee on

both the properties of earnings and the level of disclosure. Therefore, the direction of aforementioned effects is considered to be indefinite, while it is expected that independence of audit committee will have a positive effect on the symmetry level of information.

Attig *et al.* (2006) indicated that block ownership in companies leads to an increased information asymmetry, resulting in a negative effect on stock liquidity (Chen *et al.*, 2007) reached. The conclusion that a decrease of information asymmetry accompanied by an increase in company capital liquidity can be observed in companies with well-settled corporate management properties properly incorporated into company character. Studying the example of Venezuela, Garay and Gonzalez (2008) determined that an increase in companies' corporate management scores creates a positive effect on dividend payments as well as price-book and Tobin Q values.

Similar to Garay and Gonzalez (2008) and Haggard *et al.* (2008) determined that improvements in a company's transparency and information activities create a positive effect on the performance of company stocks. Core *et al.* (2006) noted that operational performance fails to display expected productivity in companies with insufficient, weak shareholder rights, resulting in a negative impact on stock yields. Haniffa and Hudaib (2006) and Price *et al.* (2011) determined that improvements in management properties and information symmetry create a positive effect on accounting performance. In line with the foregoing, Rubin (2007) noted that management properties are effective on companies' market liquidity. In other words, any decrease in information asymmetry will bring along positive effects on companies' growth opportunities.

Vander Bauwhede (2009) stated that a disclosure policy, developed in harmony with company management practices, will have a positive effect on companies' operational performance, along with a positive improvement of future growth opportunities. According to Kanagaretnam *et al.* (2007), it has been determined that good corporate governance and disclosure cause a positive change in quarterly earnings by reducing information asymmetry. Heflin *et al.* (2005) carried out a study on the relation between financial disclosure policy and market liquidity. In the study indicating a variable price depth and demand size, the finding reached by the authors was that improved disclosure policy reduced information asymmetry, leading to a decrease in trading costs and that this decrease created a positive reflection on market liquidity. Hussainey and Walker (2009) discussed the effect of voluntary disclosure and dividend orientation on both current stock yields and future price-earning. In the study, in which voluntary disclosure

and dividend orientation have been referred to as components of the financial communication process, the finding reached by the authors was that companies paying dividends as well as companies with a sufficient level of disclosure provide a higher degree of growth opportunities in contrast to companies that neither pay any dividends nor make sufficient disclosures. Besides, the authors acknowledged that dividend distribution at the same time lead to an increase in current stock prices. Therefore, the conclusion was reached that price increases will pioneer future earnings and growth opportunities, while setting higher expectations. According to Kothari *et al.* (2009), who carried out a comprehensive study that involved the analysis of numerous activity reports, financial reports and press releases, financial reports suitable and appropriate for analysis make it possible to make detailed and correct predictions about a company's future. In contrast, information lacking sufficient properties leads to an increased risk of incorrect analyses and may result in unrealistic implications on a company's volatility. Similarly, Krishnamurti *et al.* (2005) and Graham *et al.* (2005) noted that voluntary information and disclosure activities will have a positive effect on a company's liquidity, along with an improved accrual of economic results. In support of aforementioned findings, Karamanou and Vafeas (2005) stated that management structure and audit properties create a positive effect on disclosure and that this effect results in more realistic earning predictions by the administration said study defined disclosure as a proxy of yield quality. According to Deumes and Knechel (2008), voluntary disclosures by companies will reduce the risks encountered by investors and this reduction of risks will have a positive effect on both market liquidity and company value. Watson *et al.* (2002) examined the relation between accounting ratios and disclosure in the context of agency and signaling theories. They reached the opinion that transparency of ratios and quality influence company performance. Lundholm and Myers (2002), who dealt with the relation of disclosure with present stock yield and future earnings, asserted that improvement in information symmetry creates a positive effect on the future earnings of companies. Confirming the findings of Lundholm and Myers (2002), Goncharov *et al.* (2006), Cheng *et al.* (2006) and Fan and Wong (2002) determined that the application of corporate management codes and a positive change in shareholder rights brings along a decrease in financial information asymmetry, which in turn creates a positive effect on stock value by decreasing capital costs. Affleck-Graves *et al.* (2002) and Drobetz *et al.* (2010) indicate that the possibility to make correct predictions

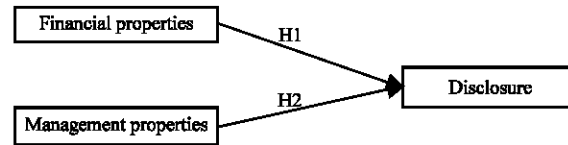


Fig. 1: Structural model of study

increases in proportion with decrease in information asymmetry, while decreasing the possibility of insiders making undeserved gains. In the light of literature analyses and assessments, hypotheses can be formulated as follows:

- H1:** Financial properties of companies affect disclosure level positively
- H2:** Management properties of companies affect disclosure level positively

Figure 1 shows the study's structural model in the light of literature review and general assessments.

According to Fig. 1, the financial dimension of company's affect disclosure positively and the management dimension of company's affect disclosure same way. As a result of this figure we say information asymmetry tends to decrease in companies with a strong financial structure along with advanced corporate administration values. Such decrease in information asymmetry brings along an increase of the disclosure level, which in turn has positive effects on a company's all internal and external values.

MATERIALS AND METHODS

Sample selection and data: To realize the considerations expressed in the conceptual framework of the study on a scientific basis, n = 237 companies included into the national index of the Istanbul Stock Exchange have been taken as sample. Data gathering was carried out from values included into daily bulletins of institutions, activity reports, financial statements and press releases for the 2011.

The Turkish Stock Exchange comprises representatives from all basic sectors such as chemistry, metal goods, automotive, cement and construction, mining, finance, banking, insurance, textile, tourism, agriculture, stockbreeding and food. The stock exchange was established in the mid of the 1980's. In the past 10 years, it leaped forward to become one of the stock exchanges that attract the most foreign capital and achieve one of the largest trading volumes worldwide. As of 2011, the Istanbul Stock Exchange ranked 7th among

Table 1: Sample distribution

Industry type	Sub-types	No.	%
Manufacturing	Food, beverage and tobacco	21	9
	Textile, wearing apparel and leather	15	6
	Forestry products, furniture, paper and paper products	17	7
	Basic metal and fabricated metal products, machinery	39	16
Chemicals and energy	Chemicals and chemical petroleum, rubber and plastic	19	8
	Non-metallic mineral products and cement	26	11
	Electricity, gas and water	7	4
Financial institutions	Banks and insurance	23	10
	Other financial institutions	29	12
Trade, services and technology	Information, technology and transportation	19	8
	Trade (retail and wholesale) and services (tourism and restaurants)	16	6
	Health and other social services	6	3

Data: www.imkb.gov.tr

developing country exchanges in terms of trading volume, while it held the 4th rank among developing and developed country exchanges in terms of trading ratio. At the end of 2011, Istanbul Stock Exchange held a rate of 62.1% in the public market value of stock owned by foreign investors. Currently, it holds the 15th place among developing country exchanges in terms of market value. As of 2011, the Bonds and Bills Market of the Istanbul Stock Exchange ranked 8th among all world exchanges. Its total trading volume increased by 9.3% compared to the previous year and accrued as US\$ 423.6 billion. The market values traded at the Istanbul stock exchange was US\$ 201.9 billion at the end of 2011. As of the end of 2011, the number of traded companies was as follows: 237 in national market, 52 in corporate products market, 61 in secondary national market and 11 in watch-list companies market, resulting in a total of 361 companies. Additionally, the number of traded securities reached a total of 548 at the end of the year, together with 12 exchange investment funds traded in the corporate products market as well as 175 variants with different underlying assets and maturities (www.imkb.gov.tr). Sample-relevant information are shown in Table 1.

According to Table 1, 38% of the companies are manufacturer, 23% of the companies are chemicals and energy, 22% of sample is financial institution, 17% of sample is trade, services and technology. In terms of company number, the number of the basic metal and fabricated metal products, machinery is first rank.

RESULTS

To define the variables employed for the purpose of the present study, an architectural structure was built up taking into account the structural model used for analysis purposes.

The hypotheses were tested by Structural Equation Modeling (SEM). The fundamental characteristic of SEM studies is that a conclusion is reached by modeling theoretical information. The aim of SEM studies is to

reveal whether pre-determined relation pattern are verified by available data. In structural equation modeling, theoretical structures that cannot be observed, but are evidenced by the presence of other data are referred to as latent variables. Latent variables are manifested by observed variables. Table 2 explains variables of study.

According to Table 2, the endogenous latent variable of disclosure consists of three observed variables referred to as financial disclosure, non-financial disclosure and strategic disclosure. Companies' management properties were selected on the grounds of reliability and validity scores delivered by previous studies. Accordingly, the exogenous variable management consists of a set of sub-dimensions in itself. To determine whether the board chairman and the CEO are the same person, i.e., the sub-dimensions of separate CEO showing the presence of an independent chairman, concentrate dummy showing the ownership concentration (block ownership) in the board, managerial ownership showing whether the managers hold company shares, family members showing whether there are family members in the board and independent auditing showing the independence of the audit committee were employed as latent variables within the scope of the management's latent variable.

The financial exogenous latent variable describing the company's financial properties consists of the latent profitability, latent leverage and latent company size variables. It appears that the latent profitability variable is divided into sub-dimensions such as stock return, ROE and ROA. The latent company size variable consists of net sales, total assets and total number of shareholders, whereas the sub-dimension leverage consists of Debt/Shareholders' Equity, debt/total assets. Table 2 shows a detailed picture on how the aforementioned variables were obtained.

After having prepared a data matrix, descriptive statistics have been prepared on applicable variables. Table 3 includes information relating to those variables.

The most important descriptive statistics in Table 3 are kurtosis and skewness. These two values show

Table 2: Variables of research

Variables	Measurement
Management	
Managerial ownership	Managerial ownership dummy equals 1 if the CEO and executive directors hold shares of company
Concentrate dummy	Concentrate dummy equals 1 if the top five shareholders hold more than 50% of the total shares of the firm
Separate CEO	Separate CEO dummy equals 1 if the CEO is also the chairman of the board
Family member	Family member dummy equals 1 if the family member is member of the board
Independent auditing	Independent auditing dummy equals 1 if the number of auditor in audit comity is more than 5 persons
Financial profitability	
Stock return	Change in stock price over the year
ROE: Return of shareholders' equity	Return of shareholders' equity equals net income divided by total equity
ROA: Return of assets	Return on assets equals net income divided by total assets
Company size	
Net sales	Natural logarithm of net sales
Total assets	Natural logarithm of total assets
No. of shareholders	Natural logarithm of numbers of shareholders
Leverage	
Debt/total assets	Debt/total assets
Debt/shareholder's equity	Debt/shareholders' equity
Disclosure	
Financial disclosure	The disclosure instrument used by Meek <i>et al.</i> (1995)
Non-financial disclosure	Total No. of point awarded for non-financial information on disclosure index
Strategic disclosure	Total No. of point awarded for strategically information on disclosure index

Table 3: Descriptive statistics of research

Variables	Mean	SD	Minimum	Maximum	Kurtosis	Fisher's skewness
Managerial ownership	0.603	0.075	0.000	1.000	1.292	0.129
Concentrate dummy	0.724	0.108	0.000	1.000	0.782	0.075
Separate CEO	0.131	0.004	0.000	1.000	0.981	1.302
Family member	0.545	0.034	0.000	1.000	-0.728	1.873
Independent auditing	0.321	0.095	0.000	1.000	0.839	1.430
Stock return	0.093	0.007	-0.203	0.355	1.201	-0.329
ROE	0.135	0.140	-0.059	0.343	0.625	0.830
ROA	0.097	0.436	-0.068	0.544	0.191	0.763
Net sales	7.065	1.543	-0.232	13.651	1.110	1.498
Total assets	12.675	2.375	21.878	33.877	0.122	-1.103
No. of shareholders	0.327	0.244	-0.002	0.676	1.502	0.230
Debt/total assets	0.232	0.142	0.098	1.203	0.933	0.182
Debt/shareholder's equity	0.723	0.008	0.042	0.983	0.021	1.531
Financial disclosure	23.214	6.870	11.000	39.000	0.788	0.393
Non-financial disclosure	30.710	7.897	12.000	40.000	1.201	0.437
Strategic disclosure	28.670	11.409	14.000	37.000	1.402	0.533
M/B assets	0.820	0.129	0.113	0.905	0.555	1.837
M/B equity	1.399	0.058	0.642	1.769	-0.398	-0.211
P/E ratio	2.827	0.243	1.018	3.981	0.793	0.720

whether the distribution of a data set is normal. A skewness coefficient with a value of ± 2 is considered as normal distribution. On grounds of a significance level of 0.05, it can be seen that the values shown in the table act in accordance with normal distribution. As regards of kurtosis, it has to be pointed out that it is calculated by dividing the verticality coefficient into the standard deviation of verticality. If the kurtosis coefficient is between -1.96 and +1.96, it is concluded that the distribution of kurtosis is abnormal. Both parameters confirm that the data shown in Table 3 comply with normal distribution.

The reliability test of variables included into analysis involves a dimension that is more effective and technical compared to classic regression and factor analyses. Accordingly, two separate reliability coefficients were calculated to test the parameters utilized to measure

defined latent variables. These two coefficients are jointly referred to as composite reliability. One of them is the construct reliability of scales. The coefficient resulting from coefficient calculation should be at least 0.50. Another calculated value was the so-called variance extracted, which should be higher than 0.50. Table 4 shows the reliability coefficients of variables (construct reliability and variance extracted).

According to Table 4 the construct reliability and extracted variance values of variables are perfect level for next step of applied study because of data numbers are higher 0.50. Subsequent to reliability analysis, the next step was to carry out a structural equation modeling, which is a type of analysis that allows for hypothesis test. Table 5 includes the mathematical aspect of the relations in study. In order to provide a more correct analysis of the research model, we provided information on the observed

variables for each latent variable. The relation between observed variables and latent variables is similar to the relation between each factor and the variables thereof, as is the case in a classical factor analysis. There are basically three major reasons for the utility of latent variable models. First, this kind of model can summarize information contained in many response variables by a few latent variables. Consequently, the approach is parsimonious. Second, when properly specified a latent model can minimize the biasing effects of errors of measurement in estimating treatment effects. This means that the approach is often more accurate than is a traditional version of the same analysis. Third, latent variable models investigate effects between primary

conceptual variables, rather than between any particular set of ordinary response variables. This means that a model is often viewed as more appropriate theoretically than is a simpler analysis with response variables only. A partial list of the sort of models that are subsumed under the framework of structural equations model general latent variable structure includes factor analysis, simultaneous equation models, standard growth curve processes, errors-in-variables models, virtually all forms of classical regression, univariate linear models and multivariate linear models, including the corresponding hypothesis tests on means and variances of classical experimental design.

According to the Fig. 2, the observed variables managerial ownership, concentrate dummy, separate CEO, family member and independent auditing are predicted by the exogenous latent management variable as ($\lambda_1 = 0.54$, $\lambda_2 = 0.63$, $\lambda_3 = 0.49$, $\lambda_4 = 0.36$ and $\lambda_5 = 0.52$) lambda values, respectively. The t-values of the variables have been determined as (11.56, 13.72, 8.20, 6.27 and 11.03. $p < 0.01$), respectively. The comparison of t-values with 2,576, i.e., a value critical for a significance level show that the relations deliver significant results. The measurement models in Table 5 for the endogenous observed variables, represented by the vector y and the q exogenous observed variables, contained in the vector x , relate the observed (manifest) variables to the underlying factors (latent variables) and may be expressed as:

$$y = \tau y + \Lambda y \eta + \epsilon, E(\epsilon) = 0, \text{Cov}(\epsilon) = \Theta \epsilon$$

Table 4: Reliability analysis

Variable	Reliability coefficient	
	Construct reliability	Extracted variance
Managerial ownership	0.71	0.78
Concentrate dummy	0.68	0.57
Separate CEO	0.54	0.61
Family member	0.51	0.51
Independent auditing	0.62	0.59
Stock return	0.77	0.72
ROE	0.88	0.70
ROA	0.73	0.65
Net sales	0.69	0.56
Total assets	0.73	0.65
No. of shareholders	0.81	0.63
Debt/total assets	0.57	0.79
Debt/shareholder's equity	0.58	0.72
Financial disclosure	0.81	0.75
Non-financial disclosure	0.76	0.64
Strategic disclosure	0.68	0.51
M/B assets	0.68	0.72
M/B equity	0.72	0.60
P/E ratio	0.76	0.83

Table 5: Paths and structural equations

Paths	Structural equations	Results		
		λ	δ	t-value
Management→managerial ownership	$x_1 = \lambda_1 \xi_1 + \delta_1$	0.54	0.21	11.56
Management→concentrate dummy	$x_2 = \lambda_2 \xi_1 + \delta_2$	0.63	0.33	9.20
Management→separate CEO	$x_3 = \lambda_3 \xi_1 + \delta_3$	0.49	0.42	8.20
Management→family member	$x_4 = \lambda_4 \xi_1 + \delta_4$	0.36	0.52	0.49
Management→independent auditing	$x_5 = \lambda_5 \xi_1 + \delta_5$	0.24	6.27	11.03
		λ	ϵ	
Profitability→stock return	$y_1 = \lambda_6 \eta_1 + e_1$	0.66	0.26	18.32
Profitability→ROE	$y_2 = \lambda_7 \eta_1 + e_2$	0.61	0.28	15.62
Profitability→ROA	$y_3 = \lambda_8 \eta_1 + e_3$	0.63	0.28	12.45
Company size→net sales	$y_4 = \lambda_9 \eta_2 + e_4$	0.71	0.21	19.07
Company size→total assets	$y_5 = \lambda_{10} \eta_2 + e_5$	0.68	0.23	11.34
Company size→No. of shareholders	$y_6 = \lambda_{11} \eta_2 + e_6$	0.75	0.19	10.45
Leverage→debt/total assets	$y_7 = \lambda_{12} \eta_3 + e_7$	0.81	0.19	24.82
Leverage→debt/shareholder's equity	$y_8 = \lambda_{13} \eta_3 + e_8$	0.77	0.16	21.02
		γ	ζ	
Financial→profitability	$\eta_1 = \gamma_1 \xi_2 + \zeta_1$	0.79	0.22	19.43
Financial→company size	$\eta_2 = \gamma_2 \xi_2 + \zeta_2$	0.67	0.36	15.23
Financial→leverage	$\eta_3 = \gamma_3 \xi_2 + \zeta_3$	0.56	0.45	13.08
(management, financial)→disclosure	$\eta_4 = \gamma_4 \xi_1 + \gamma_5 \xi_2 + \zeta_4$	0.62+0.71	0.29	22.39
		λ	ϵ	
Disclosure→financial disclosure	$x_6 = \lambda_{14} \eta_4 + e_9$	0.76	0.21	21.45
Disclosure→non-financial disclosure	$x_7 = \lambda_{15} \eta_4 + e_{10}$	0.70	0.28	16.07
Disclosure→strategic disclosure	$x_8 = \lambda_{16} \eta_4 + e_{11}$	0.54	0.47	8.34

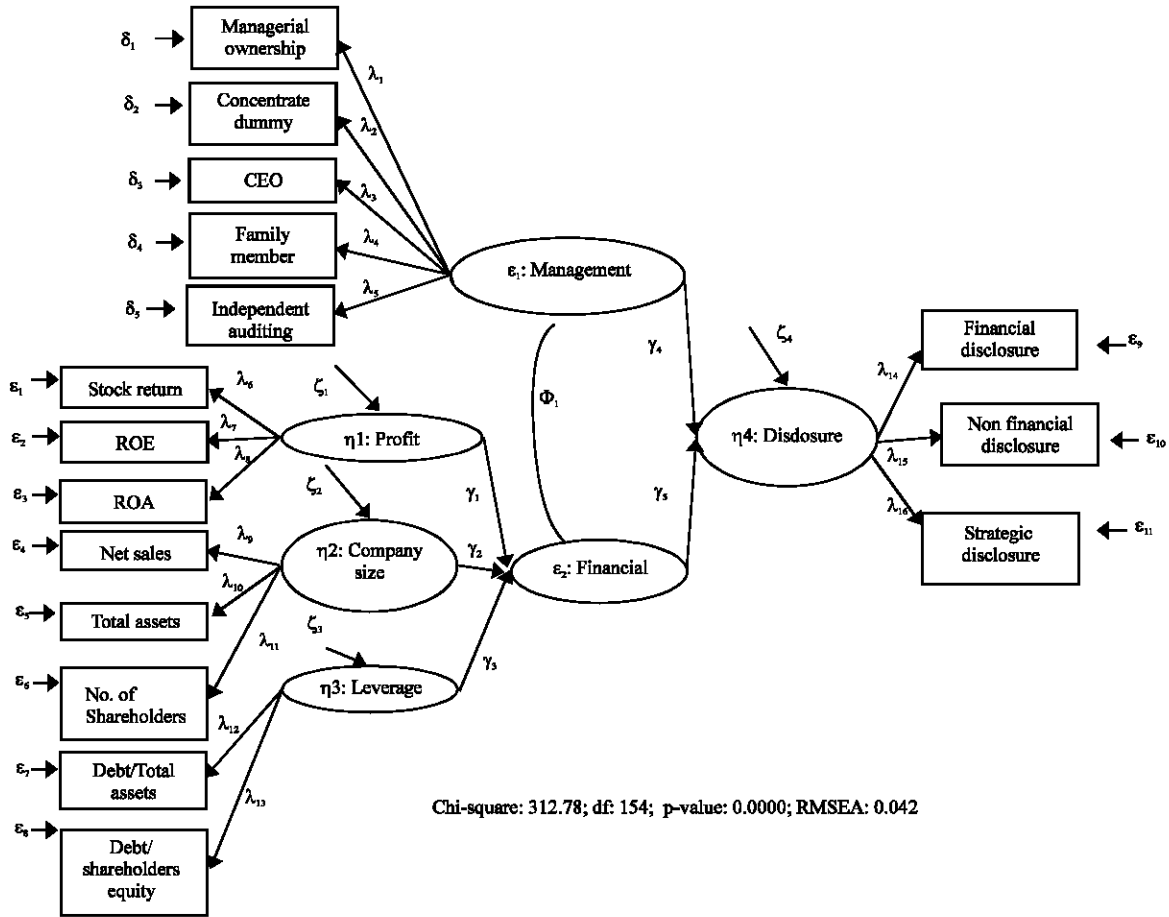


Fig. 2: Structural models

$$X = \tau x + \Lambda x \xi + \delta, E(\delta) = 0, \text{Cov}(\delta) = \Theta \delta$$

The mean vectors of the observed variables are:

$$\mu y = \tau y + \Lambda y A(\alpha + \Gamma \kappa), \mu x = \tau x + \Lambda y \kappa$$

In general, in a single population, τy , τx , α and κ will not be identified without the imposition of further conditions. It further follows that:

$$\Sigma y = \Lambda y [A(\Gamma \Phi \Gamma' + \Psi)A'] \Lambda y' + \Theta \epsilon$$

$$\Sigma x = \Lambda x \Phi \Lambda x' + \Theta \delta$$

where and:

$$\Sigma yx = \Lambda y A \Gamma \Phi \Gamma x'$$

The covariance structure for the observed variables of the general model may be expressed as:

$$\Sigma = \text{Cov} \begin{bmatrix} y \\ x \end{bmatrix} = \begin{bmatrix} \sum_{yy} & \sum_{yx} \\ \sum_{xy} & \sum_{xx} \end{bmatrix}$$

According to Table 5, the best representative of a respective latent variable is the observed variable concentrate dummy ($\lambda_2 = 0.63$). In other words, ownership structure (block ownership) is the most important management property of companies. The remaining variables can be arranged in following order: Managerial ownership, independent auditing, separate CEO and family member. The low representation capacity of separate CEO and family member results from the fact that the CEO and board chairman of Turkish companies are generally separate persons and that family ownership has been subject to a substantial decrease in recent years.

The observed variable stock return, ROE and ROA are predicted by the endogenous latent profitability variable as ($\lambda_6 = 0.66$, $\lambda_7 = 0.61$, $\lambda_8 = 0.63$) lambda values, respectively. The observed variable stock return is considered as the best indicator of profitability in Turkish

companies, followed by ROA and ROE with close results. The t-values of these variables are (18.32-15.62 and 12.45, $p < 0.01$), respectively. In other words, statistical findings on observed variables predicted by latent variables have been found significant according to 2.576, i.e., critical value for a significance level. The observed variables net sales, total assets and number of shareholders are predicted by the endogenous latent company size variable as ($\lambda_9 = 0.71$; $\lambda_{10} = 0.68$ and $\lambda_{11} = 0.75$), respectively. Considering the companies taken as sample, it was revealed that number of shareholders is the most distinct representative of the company size variable ($\lambda_{11} = 0.75$). A strong equity structure indicates that companies give weight to equity financing, a traditional tendency of companies. Net sales and total assets delivered results close to number of shareholders. In other words, a structural verification was achieved for the variables set forth to get an idea about company size. The t-values of these variables have been determined as (19.07-11.34 and 10.45, $p < 0.01$), respectively. The observed variables debt/total assets and debt/shareholder's equity are predicted by the endogenous latent leverage variable as ($\lambda_{12} = 0.81$ and $\lambda_{13} = 0.77$). Among these values, the observed variable debt/total assets ($\lambda_{12} = 0.81$) proved to be the best parameter in explaining the latent leverage variable. In other words, the ratio of debts to assets is the best explanatory of leverage factor. The t-values of these parameters have been determined as (24.82 and 21.02, $p < 0.01$), respectively and have been recorded as significant.

The endogenous latent variables of profitability, company size and leverage are predicted by the exogenous latent financial variable as $\gamma_1 = 0.79$; $\gamma_2 = 0.67$ and $\gamma_3 = 0.56$, respectively. An assessment of these variables reveals that profitability is the best representative of companies' exogenous latent financial variable. Profitability is considered as a fundamental value in explaining the financial structure of companies. Profitability is followed by company size and leverage at a value of $\gamma_2 = 0.67$ and $\gamma_3 = 0.56$, respectively. The t-values of endogenous latent variables have been determined as follows: Profitability: (19.43 -company size: 15.23 and leverage: 13.08, $p < 0.01$). Accordingly, the significance of findings is verified.

The observed variables financial disclosure, non-financial disclosure and strategic disclosure are predicted by the endogenous latent disclosure variable as $\lambda_{14} = 0.76$; $\lambda_{15} = 0.70$ and $\lambda_{16} = 0.54$, respectively. The comparison of these values is very important for the description of the endogenous latent disclosure variable. The observed variable financial disclosure ($\lambda_{14} = 0.76$) is the best representative of disclosure. However, the values

of the other two variables are also quite significant and high. This confirms that disclosure consists of the variables financial disclosure, non-financial disclosure and strategic disclosure. The same accreditation is also provided by t-values as significant (21.45-16.07 and 8.34, $p < 0.01$). The variable financial disclosure acting the best explanatory indicates that financial aspects come to the forefront in terms of information symmetry, bearing essential importance for investors. Subsequent to the assessment of endogenous latent variables and structural equations appertaining thereto, analyses have been carried out to answer the fundamental question of both the structural model and study.

The endogenous latent disclosure variable (mediator variable) is influenced by the exogenous latent management and financial variables as well as the endogenous latent variables and observed variables appertaining thereto in the level of (management+financial)→disclosure $\gamma_4 = 0.62$ and $\gamma_5 = 0.71$ gamma values, respectively. Accordingly, financial and management properties have an efficient and significant effect on information symmetry at a significance level. $\gamma_5 = 0.71$ is an indicator of a quite strong influence and causality. In other words, a company's financial properties create a positive strong effect on the disclosure variable, thus turning disclosure into a reflector of financial properties. As a company's financial properties improve, an improvement in the same direction can be observed in information symmetry. Similarly, a company's management properties have a strong influence on the degree and architecture of disclosure. This effect and structural relation is confirmed by the obtained values of 0.62 and 0.71. Another confirmatory aspect of the detected causality is the t-value of the relation between (management, financial)→disclosure. This t-value was determined as (22.39, $p < 0.01$) indicating the presence of a significant effect. This value evidences the acceptance of Hypothesis 1 and Hypothesis 3. In other words, the structural relation shown in Fig. 1 is verified by structural equation modeling. The management and financial variables influence and determine the disclosure variable, significantly. Hence, the research model (structural model) set forth in hypotheses development section is verified by obtained standardized values, giving validity to the model. To test and control the conformity of the model as a whole, we have to take a look at the goodness fits indexes shown in Table 6.

The analysis of the values shown in Table 6 indicates that the obtained scores confirm with applicable reference values. For instance, the χ^2/df score has been determined as 2,303; if compared to the reference value of < 5 , it can be seen that the model displays quite good harmony. The

Table 6: Goodness of fit index of research model

Goodness-of-fit index	Score	Reference
χ^2/df	2.303	<5.00
Average absolute standardized residuals (AASR)	0.022	<0.05
Root mean square error of approximation (RMSEA)	0.042	<0.05
Comparative fit index (CFI)	0.980	>0.80
Non-normed fit index (NNFI)	0.910	>0.90
Goodness-of fit index (GFI)	0.920	>0.90
Adjusted goodness-of-fit index (AGFI)	0.950	>0.90

χ^2/df score is not sufficient alone. In addition, values such as Average Absolute Standardized Residuals (AASR), Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), Non-Normed Fit Index (NNFI), Goodness-of Fit Index (GFI) and Adjusted Goodness-of-Fit Index (AGFI) have also to be compared with reference values. As result, we can see that the research model set forth in study is confirmed and accepted by structural equation modeling. Therefore, the research model is verified significantly in terms of its structure.

DISCUSSION

Recent theory (Veldkamp, 2006; Jin and Myers, 2006) asserts that stock returns of firms that disclose more information will, by lowering information acquisitions costs and by facilitating firm transparency, exhibit less co-movement with market and industry returns and making stock prices more informative with fits our findings in this study.

The primary purpose of the present study was to explore whether a significant cause-effect exists between disclosure and growth opportunity. For that purpose, a research model was established trying to explain the relation between disclosure and growth opportunities in the light of literature researches and assessments. In this research model, the management and financial properties of companies have been set as exogenous latent variable and a structural equation modeling was carried out to test the effect of these two separate variables on the level of disclosure. Subsequent to the test, we revealed the effect of disclosure on growth opportunity. As can be seen from the obtained statistical results, a company's management properties create a significant effect on the disclosure variable ($\gamma_4 = 0.62$). In other words, the more homogenous a company's ownership structure gets, the less family ownership gets, the more separate the CEO and board chairman becomes and the less management ownership becomes, the more will a company's level of disclosure increase, bringing along an increase in information accessible to investors and stakeholders. In other words, an increase in disclosure occurs and information accessibility is facilitated as a company's management structure achieves a more accountable composition. As

result, information shifts from asymmetry to symmetry. Thus, the position of a company's financial-non-financial and strategic information changes, leading to a shift from information accessible to and controllable by owners, principal partners and managers to information accessible to all stakeholders at equal range and distance. The more information gets accessible and comprehensible, the higher is the probability of stakeholders to make healthier assessments. In information-based assessments and analyses, information symmetry decreases the possibility of errors by implementers or decision-makers, thereby bringing along a lower level of asymmetric information risks. In this context, the risk of asymmetric information ceases to be an uncontrollable risk type, but reaches a controllable position. A higher controllability of risks makes positive contributions to stakeholders' experience and ability to make analytic decisions about a company's growth opportunity.

The effect of a company's management properties on accounting disclosure was revealed as $\gamma_5 = 0.71$ at a significance level. This effect indicates a strongly positive effect between a company's financial properties and disclosure. Depending on a company's strengthened financial status, the information made available to stakeholders becomes more symmetric, accompanied by the creation of new learning environments. The relation between a company's financial properties and disclosure is rooted in the stakeholders' need for financial information. The high value of the relation between the financial variable and disclosure makes the importance attached by investors to financial information at the stage of decision-making even more significant, providing for a concretization of this value. As can be seen from the structural equation model, financial properties have a strong direct effect on the occurrence and improvement of disclosure. A positive change in a company's quantitative financial indicators transforms asymmetric information to symmetric information, accompanied by increased disclosure. Financial disclosure, non-financial disclosure and strategic disclosure increase even more depending on improvements in a company's financial indicators (profitability, company size and leverage), resulting in a reinforced structure of accounting disclosure. It is also possible to express this assessment in a negative way. If a company's financial variables (profitability, company size and leverage) start to bear negative values, the disclosure level of said company will drag down and information will shift from a symmetric structure to an asymmetric one. The more companies make their information more transparent and accessible, the more will investors be able to make correct and complete

assessments on a company's future. Improvements and developments in the three separate dimensions of disclosure, i.e., financial disclosure, non-financial disclosure and strategic disclosure will bring along a healthy decision-making for investors in terms of correct stock selection, low-risk portfolio creation etc. Increase in the degree of symmetric information results in a higher trust in companies, along with an increase of companies' reputation in the eyes of investors. In turn, increase in reputation and trust creates positive effects on growth opportunity and increases the market value of companies. This positive effect on growth opportunities improves both management and financial properties, accompanied by strengthened stakeholder rights.

CONCLUSION

The objective of the disclosure practices is to allow market participants to determine which companies have good governance, which in turn will create market pressures for other companies to follow. We contribute to the growing literature investigating the effects of corporate governance on firm performance and transparency. Our findings similar with major studies in this area. In the light of these assessments, it can be concluded that companies listed at the Turkish stock exchange have to gain transparency so that they can improve themselves in accordance with the positive economic developments observed in Turkey, in recent years. Besides, there is an apparent need for symmetric information in order to allow investors and stakeholders to make correct assessments on growth opportunities. In this context, the major duty falls both upon companies and regulatory authorities in terms of the sustainable procurement and use of symmetric information. In recent years, Turkey witnessed a set of important legal studies and regulations to achieve an increase in accounting disclosure level. The "Communique on the Identification and Implementation of Corporate Administration Principles" published on 30th December 2011 by the Turkish Capital Markets Board (CMB) is the most significant one of all those regulations designed to identify mandatory corporate disclosure applications. Said communiqué defines corporate principles applicable to companies and banks traded at the Istanbul Stock Exchange, in the form of "shareholders, public disclosure and transparency, stakeholders and board of directors" (TOGT, 2011) Serial: IV, published in the Official Gazette No: 56, 28158 dd.30.12.2011). Emphasizing accessibility of information, the Communiqué also provides that companies shall develop an "information policy", which

shall include regulations on the type of information, which have to be publicly disclosed by companies apart from legally stipulated information and when, how often and in which ways this information is going to be disclosed.

The establishment of a well-functioning infrastructure for accounting information systems is of critical importance for obtaining correct, high-grade information. Correct, high-grade information is a fundamental building block of disclosure. Besides, companies have to take measures to protect their stakeholders against the risk of asymmetric information. A positive effect on companies' transparency degrees and public disclosure skills can be achieved if regulatory authorities start to impose applicable obligations. In this context, it should be noted that advancing information and internet technologies will pose an important platform for listed companies. Considering that companies with more positive management and financial properties tend to make more disclosure and, thus, strengthen their growth opportunity, it is an inevitable requirement to include voluntary disclosure into both company strategies and policies.

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