

## Investment Opportunity Set, Ownership Control and Voluntary Disclosures in Malaysia

M. Akhtaruddin<sup>1</sup>

M. Hossain<sup>2</sup>

### Abstract

This study examines the association between investment opportunity set and voluntary disclosures. The influence of ownership control as a mediator in this relationship is also examined. The results obtained in the analyses are consistent with the predictions. This study indicates that growth firms benefit from higher level of voluntary disclosures and higher level of ownership control by outside shareholders due to their context of high agency costs. While firms with low growth options are characterized by higher level of ownership control by board and lower level of voluntary disclosures because they face a context where agency costs are low. Further, this study indicates that agency theory prescriptions regarding monitoring are more relevant in growth firms, but are redundant in low growth firms. Specifically, high growth firms are dominated by outside shareholders while low growth firms by the board.

**Keywords:** Investment opportunity set; ownership control; voluntary disclosure; growth opportunities.

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<sup>1</sup> Institute of Business Administration, University of Rajshahi, Bangladesh.

<sup>2</sup> Nanyang Business School, Nanyang Technological University, Singapore,  
Email: amhossain@ntu.edu.sg

## Introduction

Researchers in recent years have begun to show their interest in investment opportunity set (IOS) that is expected to influence management incentives and corporate policy choices. Smith and Watts (1992), for example, find that growth firms tend to pursue lower debt to equity ratio and lower dividend policy relative to non-growth firms. The same results are also found in the work of Gaver and Gaver (1993). It is evident from their studies that differences in corporate policies are influenced by the firm's investment opportunity set. Overall, the empirical evidence suggests that a firm's investment opportunity set is an important determinant of corporate financing, dividend and compensation policy decisions (Smith & Watts, 1992; Gaver & Gaver, 1993; Skinner, 1993). However, research explaining the impact of IOS on corporate disclosure decision specifically voluntary disclosure has rather been unexplored.

The purpose of this paper is to provide empirical evidence on the association between investment opportunity set and voluntary disclosures. It also examines the effects of ownership structure as a mediating variable between IOS and voluntary disclosures. This paper employs three widely used variables as proxies for IOS that have been used in prior research (e.g., Smith & Watts, 1992; Gaver & Gaver, 1993; Skinner, 1993; Gul, 1999). These are: 1) market value of the firm to the book value of assets, 2) market to book value of equity, and 3) price to earnings ratio. Common factor analysis is used to construct an index of investment opportunities for each firm on the basis of these three IOS measures.

Generally, managers have incentives to disclose more information when the firms have better earnings prospects or growth opportunities. In these settings, investors, on the other hand, are likely to have a greater demand for information to assess firm value. Ownership control thus affects the demand for disclosure. The demand for disclosure, and consequently, the incentive to disclose, is both absent when majority shares of the firm belong to the board. This paper develops several hypotheses to test the conjecture. Consistent with the predictions, the regression analysis finds that growth firms are likely to disclose more information voluntarily in the corporate annual reports. Ownership control is found to partially mediate the relationship between growth opportunities and voluntary disclosures. Overall, the findings suggest that growth firms benefit from higher level of voluntary disclosures and higher level of ownership control by outside shareholders due to their context of high agency costs. While firms with low growth options are characterized by higher level of ownership control by board and lower level of voluntary disclosures due to their context of low agency costs. Further, this study indicates that agency theory prescriptions regarding monitoring are more relevant in growth firms, but are redundant in non-growth firms. Specifically, high growth firms are dominated by outside shareholders while low growth firms by the board.

This study contributes to the literature in three ways. First, while earlier research in emerging countries examines the impact of firm-specific characteristics on corporate disclosure, no study has, to our knowledge, examined the link between IOS and voluntary disclosure strategy. This study thus provides a test of voluntary disclosure linking to growth opportunity. Second, it examines the mediating effects of ownership control between growth options and voluntary disclosures. Third, it focuses on corporate disclosures in Malaysia, an emerging country in Asia. While voluntary disclosures receive

much attention in the US and UK, the problem also has eventually become more significant in emerging markets.

The remainder of the paper is organized as follows. Section 2 provides information institutional environment in Malaysia. Section 3 develops research hypotheses. Research design is presented in section 4. Section 5 presents the results. Finally, section 6 provides conclusion and indicates directions for future research.

### **Corporate governance and financial reporting environment in Malaysia**

Many countries around the world have introduced corporate governance codes, and Malaysia is not an exception to this. The Malaysian Code on Corporate Governance was introduced in March 2000. Bursa Malaysia, formerly known as the Kuala Lumpur Stock Exchange (KLSE), adopted the provisions of the code in its listing rules effective January 2001. The codes focus on the importance of transparency, accountability, internal control, board composition, and directors' remuneration. Corporate governance codes are a mechanism that helps firms attain their corporate objectives while disclosure is an essential tool for firms to report their performances and for investors to assess corporate performances.

Corporate disclosure and reporting by listed firms in Malaysia are largely influenced by the Companies Act of 1965 and accounting standards approved by the Malaysian Accounting Standards Board (MASB). The Companies Act required public listed firms to prepare and submit annual accounts before the annual general meeting for approval in line with rules embedded in the Ninth Schedule of the Act. The primary feature of the regulation is that it provided guidelines about the contents to be included and the valuation of the respective items. Under the Companies Act of 1965, company directors are solely responsible for the preparation of annual accounts. The accounts must be audited by certified auditors before presenting them to the shareholders at the annual general meeting. Public listed firms are also required by Bursa Malaysia to comply with its listing rules on disclosure and reporting.

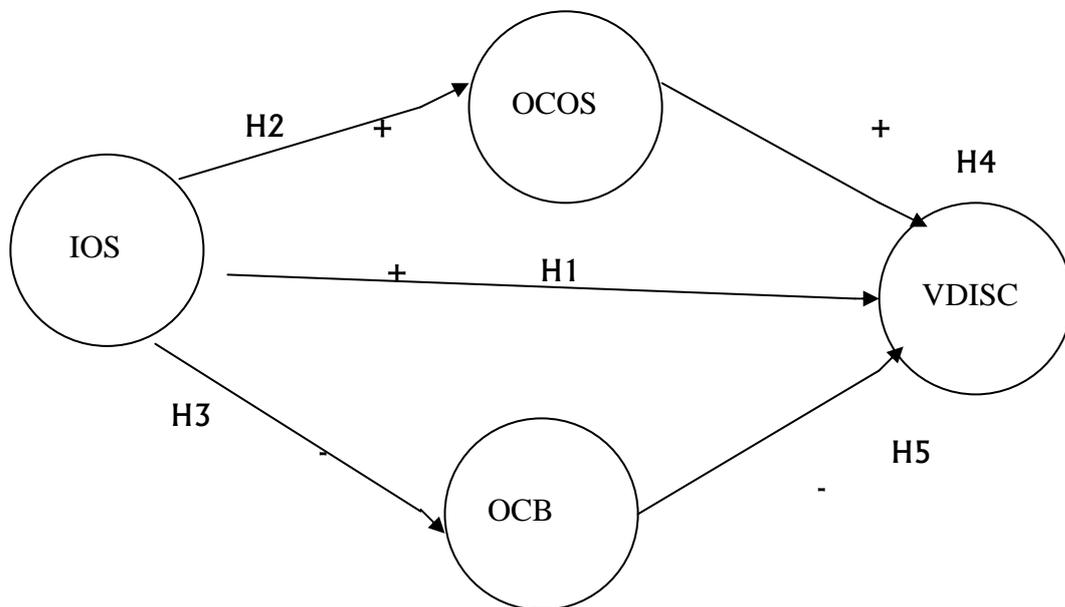
The government of Malaysia has implemented a number of measures to enhance the standards of reporting and disclosure. The Financial Reporting Act was promulgated in Malaysia in 1997. MASB was established under the Financial Reporting Act of 1997 to develop and issue accounting standards. Before its establishment, the accounting standards in Malaysia were governed by two accounting professional bodies: the Malaysian Institute of Accounts (MIA), and the Malaysian Association of Certified Public Accountants (MACPA). The MIA was set up in 1967 by the government as a statutory body to regulate the accounting profession. Accountants must be admitted as members of MIA. The MIA is the only accountancy body empowered by law to regulate the accountancy profession in Malaysia. The MACPA was established by the private sector in 1958 to provide services to its members in the highest professional manner. The role of developing and issuing accounting standards is now carried out by the MASB. The Financial Reporting Foundation (FRF) was created under the Financial Reporting Act of 1997 to provide financial support to the MASB. The FRF has the responsibility to oversee MASB's performance. It also acts as an initial source of views for the MASB on accounting standards. The FRF has no direct responsibility for accounting standards setting.

The accounting standards describe methods of accounting or disclosure for all adopted accounting statements that are expected to give a true and fair view of the financial position and results. All listed firms must abide by the accounting standards adopted by the MASB, and hence, the accounting standards are mandatory only for the firms listed on the Bursa Malaysia. Compliance with the mandatory disclosures by listed firms does not tell much about corporate disclosure. However, no regulatory bodies focus on prospective disclosures, i.e., the forward-looking information. Listed firms are encouraged to report relevant and material information in addition to the mandatory information necessary to enable existing and potential investors to measure their performance. But firms usually do not provide voluntary information unless the perceived benefits outweigh the costs (Hossain et al., 1994).

### Hypothesis Development

The study conceptualizes the association between the investment opportunity set and voluntary disclosures. It also predicts that this association is mediated by ownership control. Two variables have been employed to represent ownership control. They are ownership control by outside shareholders and ownership control by board. Figure 1 presents the research framework and the relationships tested in this study.

**Figure 1: The Research Framework**



IOS = Investment opportunity set  
 OCOS = Ownership control by outside shareholders  
 OCB = Ownership control by board  
 VDISC = Voluntary disclosure score

*The IOS and voluntary disclosure*

The agency theory suggests that the separation of ownership and control can give rise to agency cost because of the conflict of interest between the contracting parties i.e., management (agents) and shareholders (principals). Fama and Jensen (1983) argue that conflict between shareholders and management is greater in shareholder concentrated firms than in management concentrated firms. This conflict, among others, is the result of information asymmetry between shareholders and management (Lang & Lundholm, 1996). Empirical evidence also documents that information asymmetry and agency costs are greater for growth firms than non-growth firms (Smith & Watts, 1992; Gaver & Gaver, 1993). However, role of disclosure to reduce information disparities and hence agency costs cannot be ignored. Information disclosure is, in fact, driven by the desire of the management to efficiently handle the potential conflicts between the firms and contracting parties. Specifically, managers will involve activities that will minimize agency costs and thereby maximize the value of the firm (Diamond & Verrecchia, 1991; Kim & Verrecchia, 1994). Particularly, Smith and Watts (1992) investigated whether variation in corporate policy choices (e.g., financing, dividend and compensation policies) across firms is due to differences in investment opportunity set. Their results suggest that high growth firms pursue lower debt to equity and lower dividend payout policy relative to low growth firms. With regard to compensation, they found that growth firms pay higher levels of compensation to managers than non-growth firms. As the growth firms depend more on equity for financing, therefore, they have incentives to make voluntary disclosures in order to raise funds from the markets.

While with regard to information asymmetry between managers and shareholders, it would expect growth firms to provide more voluntary information to signal that they are performing well and have a rich well of investment options. Agency theory also suggests that managers of growth firms will be interested in disclosing more voluntary information in order to obtain personal benefits. Additionally, they will disclose detailed information in order to support the continuance of their positions and compensations. Again, signaling theory implies that management will be interested in providing good news to the market in order to boost share price. Thus I hypothesize that:

*H1: Firms with high growth opportunities are likely to disclosure more voluntary information in corporate annual reports.*

#### *The IOS and ownership control*

The fact that majority shares of a firm are either held by insider management or outside shareholders. Again, capital structure of a firm is dominated either by equity financing or debt financing. It is argued that capital structure and IOS is significantly related. Firms with more growth options tend to prefer equity to debt financing in order to reduce the agency problems between debt holders and managers (Smith & Watts, 1992). Although the agency problems between debt holders and management are minimized, however, agency cost between shareholders and managers increases as equity financing increases. This happens as the new equity is sold to outside interests making ownership control by the outside shareholders to rise. This suggests the following hypothesis:

*H2: Firms with high growth opportunities are associated with higher level of ownership control by outside shareholders.*

Firms with low growth options pursue more debt financing relative to equity financing in the capital structure (Smith & Watts, 1992). It is argued that firms with high assets-in-place and low growth options will use more debt in the capital structure in order to pay out the excess cash (Jensen, 1986). Again, in this setting agency costs are likely to be much lower as major shares are concentrated to the board members. Although agency cost between shareholders and managers is minimized, but it would arise from conflicts between shareholders and creditors. Thus, agency costs may differ across firms from capital structure perspective. Eventually, managers can reduce agency costs to zero in the extreme case of 100% ownership (Crutchley & Hansen, 1989). Based on the prior studies, it is argued that firms with low growth opportunities are associated with greater managerial ownership. Thus, we would expect that IOS be negatively related to the level of ownership control by the board. This leads to the following hypothesis:

*H3: Firms with low growth opportunities are associated with higher level of ownership control by board.*

#### *Ownership control and voluntary disclosure*

Ownership control, management behavior and disclosures are usually interactive. Typically, a higher level of ownership control by outside shareholders could reduce information withheld and management entrenchment. The signaling theory predicts that management provides more information to signal that they act for the best interest of the shareholders. According to efficient monitoring hypothesis, increased outside ownership may serve as a monitor of managers' action and reduces the likelihood of managerial opportunistic activities. Anderson et al. (1993) argue that the higher the level of ownership control by outside shareholders of a firm, the more monitoring activities it can employ. Hill and Snell (1988) find that presence of large outside shareholders has a significant impact on corporate strategy. A study by Chan and Gray (2002) indicates that wider ownership is significantly related to voluntary disclosures. This suggests that managers will more likely to provide information in support of their activities when ownership control lies in the hands of outside shareholders. The following hypothesis may thus be tested:

*H4: A higher level of ownership control by outside shareholders is associated with higher level of voluntary disclosure.*

It is well known that managers have better access to private information than outside shareholders. More importantly, corporate information is not made publicly available by the management while they hold a majority share of a firm. The fact that management concentrated firms have little or no motivation to disclose information in excess of compulsory requirements because the demand for information is relatively less compared to firms concentrated with outside ownership. Morck et al., (1988) report that high level of insider ownership could lead to entrenchment as outside owners have no way to control the action taken by the management. Thus the following hypothesis is proposed:

*H5: A higher level of ownership control by board is associated with lower level of voluntary disclosure.*

Although there have been considerable research on disclosure, no known studies have examined the relationship between voluntary disclosure and IOS where the influence of ownership control, as a mediator, is included. Due to lack of research on this specific issue

in the disclosure literature, an attempt is made to investigate the mediate effect of ownership control on the relationships between IOS and voluntary disclosure. The following hypotheses are therefore conjectured:

- H6: Ownership control by outside shareholders mediates the relationship between the IOS and voluntary disclosure in such a way that the direct effect of IOS will weaken after ownership control by outside shareholders is considered.*
- H7: Ownership control by board mediates the relationship between IOS and voluntary disclosure in such a way that the direct effect of IOS will weaken after ownership control by board is considered.*

## **Research method**

### *The sample*

The sample was drawn from 465 firms excluding finance, infrastructure project, hotel, plantation, mining, trusts, and closed-end funds listed on the Main Board of Bursa Malaysia in 2003. As it is not feasible to examine the annual reports of all the listed firms, about one out of every four firms was randomly selected. In this way the sample arrived at 116. Annual reports for 2003 were collected for the analysis. Out of the sample firms, 12 firms have negative earnings and hence excluded. Finally, the sample size stands at 104 firms that represent about one quarter of the total population.

### *Measuring voluntary disclosure*

With regard to voluntary disclosure, I use annual report, which is considered to be the main source of corporate information. A disclosure index is developed taking into account the disclosure environment in Malaysia that is governed by accounting standards, listing requirements of the Bursa Malaysia (formerly known as Kuala Lumpur Stock Exchange), and the relevant sections of the Companies Act 1965. Accounting standards in Malaysia are governed by the Malaysian Accounting Standards Board (MASB). MASB in fact develops and issues accounting standards in line with the International Accounting Standards (IAS). While selecting the information items in the disclosure checklist, the studies by Chau and Gray (2002), Ho and Wong (2001), and Ferguson et al. (2002) are taken into consideration. A total of 91 items were identified in compliance with voluntary disclosure items provided by the listed firms in Malaysia. These items were then compared with a mandatory disclosure checklist of a Big-4 accounting firm (KPMG) in Malaysia. In this process some items were excluded from the checklist. For example, earnings per share, dividend per share, research and development costs are treated as mandatory information as per Malaysian Accounting Standards Board (MASB), and hence, excluded. Finally, the disclosure list stands at 74 information items. The checklist contains background information, corporate strategy, corporate governance, financial information, financial review information, acquisition and disposal, projected information, employee information, graphic information, and social responsibility information. For each item in the disclosure checklist, a firm receives a score of "1" if it voluntarily discloses information item and "0" if the item is not disclosed (Cooke, 1989; Hossain et al., 1994). Disclosure is a sum of the scores awarded for each item in the disclosure index. Firm can score a maximum of 74 points based on the items of information provided in the checklist.

### *Measuring investment opportunity set (IOS)*

The IOS is used by researchers to refer to future discretionary expenditures by firms. Basically, the value of a firm depends on future discretionary expenditures by managers. As the discretionary expenditures are made to allow the firms grow, the IOS can be viewed as the growth opportunities of the firm. Virtually, any discretionary expenditure can be considered as a growth opportunity. Thus, growth opportunities include discretionary expenditures like capacity expansion, new product lines, acquisition of firms, brand advertising, maintenance and replacement of existing assets, etc. (Gul, 1999). In general, the firm's growth opportunity depends on firm-specific factors such as human and physical capital in place, industry-specific as well as on macro-economic factors (Gaver & Gaver, 1993).

Following the previous research (see, for example, Smith and Watts 1992; Gaver & Gaver, 1993; Gul, 1999), this study also performs a factor analysis to identify a common measure of the IOS. Three measures of the IOS used are: market value of the firm to the book value of total assets (MKVTBA), market value to the book value of equity (MKVTBE), and price earnings ratio (PER). MKVTBA is the ratio of book value of total liabilities plus the market value of common equity to the book value of total assets. MKVTBE is the ratio of market value of common equity to book value of common equity. Both MKVTBA and MKVTBE should be positively correlated with the growth opportunities; while the earnings to price ratio should be negatively related to growth options. This ratio has been used in earlier research. Inverse the ratio will show the relation differently. Typically, the price to earnings ratio (PER) should be positively related to growth opportunities. This study considers price to earnings ratio instead of earnings to price ratio because of its positive association with growth options.

Corporate annual reports in Malaysia provide information on the shares owned by directors and substantial shareholders. This is a required disclosure by the Bursa Malaysia. The mediating variable ownership control is calculated first by adding together the proportions of equity hold by executive directors in order to arrive at the proportion of a firm's equity owned by board. The percentage of equity hold by board is then used to derive the percentage of equity owned by outside shareholders.

In addition to measure IOS and ownership control, this study also includes three control variables. The control variables used are size, profitability, and nature of audit firm. Control variables are selected on the basis of prior studies on disclosures. Firm size is expected to be positively associated with voluntary disclosure. Profitability has also an important effect on disclosure. Firms with high profitability might have incentives to make more corporate disclosures with a view to communicate their good performance to investors. Another important control variable is nature of audit firm. Previous research suggests that clients of local audit firms affiliated to Big-Four international audit firms are likely to make more voluntary disclosures than clients of local audit firms not affiliated to Big-Four international audit firms (Ahmed & Nicholls, 1994; Wallace & Naser, 1995). Log of total assets is used to control for firm size while return on market value of equity is employed to control for profitability. Asset size is used as proxy for firm size by Cooke (1989), Hossain et al. (1994), and Wallace et al. (1994). While return on equity has appeared in studies by Wallace et al. (1994), Wallace and Naser (1995), and Owusu-

Ansah (1998). Again, for variable nature of audit firm dichotomous method is used. The value “1” is assigned if auditor is Big-Four firm, and “0” otherwise.

## Results and discussion

Table 1 presents descriptive statistics and correlations among individual measures of investment opportunity set. The statistics indicate that the mean value of MKVTBA and MKVTBE is between one and two; while it is 19.668 for price earnings ratio. As predicted the variables are positively related to each other. A high correlation exists between MKVTBA and MKVTBE, which is 0.927. However, the analysis exhibits low correlation for PER. It is consistent with the findings of Gaver and Gaver (1993) where they did not find significant correlations among all IOS measures. They argue that each variable has unique limitations as a measure of the investment opportunity set and therefore, suggest for using factor analysis to extract a common IOS measure from the individual measures of the IOS.

**Table 1.** Descriptive statistics and correlation of the three measures of the IOS

	MKVTBA	MKVTBE	PER
Maximum	6.120	16.730	114.000
Median	1.1034	1.1811	14.7941
Minimum	0.450	0.090	2.740
Mean	1.2792	1.6319	19.668
Correlations			
MKVTBA	1.000		
MKVTBE	0.927**	1.000	
PER	0.080	0.035	1.000

\*\*p < 0.01, two-tailed.

MKVTBA = ( Total assets- Total common equity + Share outstanding\* Share closing price)/ Total assets

MKVTBE = ( Share outstanding\* Share closing price) / Total common equity.

EP = Share closing price/ Primary EPS before extraordinary items

Common factor analysis of three measures of IOS is performed and the results are presented in Table 2. Panel A shows the starting communalities of individually measures of the IOS. Communalities are the squared multiple correlation of each measure obtained from regressing on the other two measures. In Panel B, the eigenvalues of the reduced correlation matrix for three individual measures of the IOS are provided. The three measure loads on a single factor with an eigenvalue grater than one. Since the first eigenvalue equals the sum of the estimated communalities it is presumed that one common factor might explain the intercorrelations among the individual measures. This factor accounts for 64.46% of the variance of the individual measures. Panel C gives the correlations between the common factor and the three underlying measures of IOS. The common factor is positively to with all the three measures, suggesting that the common factor represents the three proxies for IOS. Panel D gives some descriptive information in respect of IOS distribution.

**Table 2.** Common factor analysis of three measures of IOS

	MKVTBA	MKVTBE	PER	
Panel A: Estimated communality estimates	0.962	0.957	0.014	
Panel B: Eigenvalues	1.933	0.994	0.072	
Panel C: Correlations between common factor and three IOS measures	0.981	0.978	0.120	
Panel D: Descriptive statistics of the common factor	Maximum 6.94207	Median -0.253789	Minimum -0.90690	Mean 0

\*\*p < 0.01, two-tailed.

MKVTBA = (Total assets - Total common equity + Share outstanding\* Share closing price)/Total assets

MKVTBE = ( Share outstanding\* Share closing price) / Total common equity.

EP = Share closing price/ Primary EPS before extraordinary items

Table 3 provides the descriptive statistics for mediating variables (outside share ownership and directors' shareholdings), control variables (size, profitability, and nature of audit firms), and dependent variable voluntary disclosure.

The correlations between the independent variable, dependent variable and the mediating variables are presented in Table 4. Voluntary disclosure score (VDISC) is positively correlated to IOS. Again, it is positively correlated to ownership control by outside shareholders (OCOS), and negatively correlated to ownership control by board (OCB). VDISC is also positively correlated to the control variables firm size, return on equity, and nature of external audit firms. The variable ownership control by outside shareholders is positively related to IOS. While ownership control by board is negatively correlated to IOS. These results support the hypotheses formulated for this study.

**Table 3.** Descriptive statistics for dependent, mediating, and control variables

Variable	Maximum	Median	Minimum	Mean	Standard deviation
VDISC	58.00	43.000	28.00	42.567	6.767
OCOS	99.99	69.2208	11.47	69.220	22.629
OCB	88.53	30.2500	.01	30.737	22.591
TASTS	36040.3	487.1950	96.430	1507.845	4095.693
RETRN	71.230	7.2814	0.210	8.856	8.659
NEAUD	1	1	0	0.67	0.471

OCOS = Ownership control by outside shareholders

OCB = Ownership control by board

TASTS = Natural log of total assets

RETRN = Return on capital employed

NEAUD = 1 for the audit firm affiliated with Big-Four, 0 otherwise

The test of multi-collinearity indicates that correlation coefficients are within the acceptable limit. It also uses Variance Inflation Factor (VIF), another effective method of testing the multi-collinearity in the regression model. The VIF factors also indicate that multi-collinearity is absent in the regression model.

To test Hypothesis 1, dependent variable voluntary disclosure is regressed on independent variable IOS. Table 5 provides the OLS results. From Model 1 of the table, it can be seen

that IOS has a positive and significant influence on voluntary disclosure at a significant level of  $p < 0.001$ . Of the control variables, firm size and nature of audit firms are positively associated at a significant level of  $p < 0.05$ . This indicates that larger firms disclosed more voluntary information. It is similar to studies done by Cooke (1989), Lang and Lundholm (1993), and Owusu-Ansah (1998). Further, big audit firms have a significant influence on release of more voluntary information in the corporate annual reports, which is consistent with the result of Ahmed and Nicholls (1994). Return on equity is also positively associated but not significant. Thus, hypothesis 1 is supported.

**Table 4.** Pearson correlation analysis results

	VDISC	IOS	OCOS	OCB	TASTS	RETRN	NEAUD
VDISC	1.000	0.533**	0.462**	-0.461**	0.205*	0.402**	0.199*
IOS		1.000	0.221*	-0.220*	0.047	0.693**	-0.006
OCOS			1.000	-1.000**	0.259**	0.064	0.042
OCB				1.000	-0.259**	-0.063	-0.039
TASTS					1.000	0.017	0.110
RETRN						1.000	0.108
NEAUD							1.000

\*  $p < 0.05$ , two-tailed, \*\*  $p < 0.01$ , two-tailed.

VDISC = Voluntary disclosure score

IOS = Investment opportunity set

OCOS = Ownership control by outside shareholders

OCB = Ownership control by board

TASTS = Natural log of total assets

RETRN = Return on capital employed

NEAUD = 1 for the audit firm affiliated with Big-Four, 0 otherwise

In order to test the median effect of the intervening variable, three conditions must be fulfilled (Baron and Kenny, 1986). Firstly, the mediator is regressed on the independent variables and the results must show that the independent variable is significantly related to the mediating variable. Secondly, independent variable must relate to the dependent variable when dependent variable is regressed on the independent variable in the absence of mediating variable. Third and finally, when the dependent variable is regressed on both the independent variable and on the mediator, the direct relationship between the dependent and independent variables should become significantly smaller or non-significant.

The relationship between ownership control by outside shareholders and IOS is provided in Model 2 of Table 5. The result reports that IOS has a positive and significant influence on ownership control by outside shareholders ( $p < 0.01$ ). Hypothesis 2 is supported which indicates fulfillment of the first requirement of test of mediation. The second condition for mediation also has been met in the first model discussed above. Additionally, the empirical evidence supports the relationship between OCOS and VDISC at a significant level of  $p < 0.001$ . It is consistent with the result obtained by Chan and Gray (2002).

**Table 5. Regression results**

Model	DV	IOS	OCOS	TASTS	RETRN	NEAUD
1	VDISC	.506(4.468)*	X	.160(1.965)***	.030(.261)	.181(2.191)***
2	OCOS	.329(2.504)**	X	.243(2.562)**	-.172 (-1.303)	.035(.368)
3	VDISC	X	.413(5.027)*	.077(.930)	.360(4.510)*	.134(1.675)
4	VDISC	.393(3.652)*	.342(4.279)*	.077(.995)	.089(.836)	.169(2.215)***

\* p < 0.001, \*\*p < 0.01, \*\*\* p < 0.05.

DV = Dependent Variable

VDISC = Voluntary disclosure score

IOS = Investment opportunity set

OCOS = Ownership control by outside shareholders

TASTS = Natural log of total assets

RETRN = Return on capital employed

NEAUD = 1 for the audit firm affiliated with Big-Four, 0 otherwise

Finally, the dependent variable (VDISC) is regressed simultaneously on both the independent and intervening variable and the results are provided in Model 4. A comparison of the beta coefficients between model 1 and model 2 indicates that OCOS partially mediates the association between voluntary disclosures and IOS. Thus, hypothesis 6 is partially supported.

Another variable, ownership control by board is hypothesized to mediate the relationship between IOS and voluntary disclosure. Mediated regression analysis is provided in Table 6. An association between IOS and OCB is provided in Model 2. The IOS is found to have a negative and significant influence on OCB (p<0.01). This indicates that low growth firms are associated with higher level of ownership control by board. Next, I regress the VDISC on the OCB. Model 3 of Table 6 shows that OCB has a significant relationship with VDISC (p<0.001). Thus, hypotheses H3, and H5 are supported. I then proceed to test the mediation effect, which can be seen in Model 4. The result reveals that OCB also partially mediates the relationship between IOS and VDISC. It may thus be concluded that IOS causes OCB and OCB causes VDISC. Hypothesis 7 is thus also partially supported.

**Table 6. Regression results**

Model	DV	IOS	OCOS	TASTS	RETRN	NEAUD
1	VDISC	.506(4.468)*	X	.160(1.965)***	.030(.261)	.181(2.191)***
2	OCB	-.328 (-2.494)**	X	-.243(-2.569)**	.175 (1.327)	-.032(-.334)
3	VDISC	X	-.414 (-5.036)*	.076(.925)	.362(4.533)*	.136(1.692)
4	VDISC	.394(3.656)*	-.343 (-4.292)*	.077(.990)	.090(.848)	.170(2.230)***

\* p < 0.001, \*\*p < 0.01, \*\*\* p < 0.05

DV = Dependent Variable

VDISC = Voluntary disclosure score

IOS = Investment opportunity set

OCB = Ownership control by board

TASTS = Natural log of total assets

RETRN = Return on capital employed

NEAUD = 1 for the audit firm affiliated with Big-Four, 0 otherwise

## Conclusion

Research in the recent past examines the effects of firm-specific factors on corporate disclosures. However, no known studies have investigated the influence of IOS on disclosures specifically voluntary disclosures. Research on IOS (see, for example, Smith & Watts, 1992; Gaver & Gaver, 1993; Skinner, 1993; Gul, 1999) is in fact the main motivation to undertake this study to examine whether corporate disclosure decisions are also determined by the firms' IOS.

Specifically, the aim of this paper was to examine the association between IOS and voluntary disclosure. The influence of ownership control as a mediator in the relationships was also examined. The results showed that investment opportunity set is positively related to voluntary disclosures. The overall prediction is that growth firms are more inclined to voluntarily disclose information than that of low growth firms. Consistent with an agency theoretic perspective of monitoring, this study reports that wider ownership by outside shareholders has a positive relationship with voluntary disclosures.

The findings suggest that growth firms benefit from higher level of voluntary disclosures and higher level of ownership control by outside shareholders due to their context of high agency costs. While firms with low growth options are characterized by higher level of ownership control by board and lower level of voluntary disclosures because they face a context where agency costs are low. Further, this study indicates that agency theory prescriptions regarding monitoring are more relevant in growth firms, but are redundant in low growth firms. Specifically, high growth firms are dominated by outside shareholders while low growth firms by the board.

The study has several limitations. First, the problem of this study lies in the measurement of IOS. There is no guarantee that the three measures used in this study adequately capture the IOS. The analysis indicates that return on equity, although positively related to IOS, does not appear to be statistically significant. Previous research also has the same observation.

The sample size of this study is relatively small compared to other studies done by Gaver and Gaver (1993) and Skinner (1993) where they use 574 firms and 357 firms respectively. Future research is thus needed to more fully understand the association between IOS and voluntary disclosures. Research is also important to investigate the effect of ownership control in the relationship between IOS and voluntary disclosures.

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