SCIENTIFIC CULTURE

USING STRUCTURAL EQUATION MODELLING TO MEASURE OWNERSHIP'S MODERATING IMPACT ON EARNINGS MANAGEMENT AND FINANCIAL PERFORMANCE PRE AND POST-REVOLUTION

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ABSTRACT

In this paper, we evaluate the impact of family/institutional ownership structures and accrual-based earnings management (AEM) on corporate financial performance, specifically measured through return on assets (ROA), return on equity (ROE), return on sales (ROS), and earnings per share (EPS). The study analyzes 49 publicly traded firms from the top 100 most actively traded stocks on the Egyptian Exchange (EGX100 Price Index) from 2006 to 2013, excluding companies with incomplete data and those in banking, financial services, and insurance sectors. Employing path analysis with Structural Equation Modeling (SEM) and multi-group analysis, the study reveals that concentrated family ownership enhances corporate monitoring and reduces managerial

opportunistic accounting practices both before and after the Egyptian Revolution. Conversely, while institutional ownership demonstrates a positive relationship with financial performance metrics such as ROA, ROE, and ROS, it shows no significant correlation with earnings management during either period. Notably, family-owned firms do not significantly differ from non-family firms in terms of other accounting performance measures.

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1. INTRODUCTION

Falling over the last few decades have world financial crises, among them the collapse of Enron (2001) and the scandal of WorldCom (2002), both very corrupt and managed poorly, which limited companies from raising enough capital. The crises caused billions in losses to investors and severely undermined the financial stability of corporations. As a result, shareholder activism has become stronger, and competition for investments has increased. There are new pressures on companies to be compliant with stringent governance standards that will ultimately reduce their risk of corruption and mismanagement (Jill and Aris, 2004). Moreover, you mentioned something incredibly pertinent in your framework paragraphs as it relates to both quoted international investors and organisations seeking consistent benchmarks—much like financial metrics provide flexibility, accuracy and transparency—by which prospective investments are readily comparable, and as such funds are deployed in a downwardly compliant manner.

Consequently, international and local investors catch companies with robust corporate governance frameworks as the most critical issue in their investment choices. Corporate governance is essential to ensuring that companies are being managed and overseen by competent boards of directors. This protects the interests of shareholders—particularly those who are physically distanced from on-site management of the firm—and their monetary investments. Good corporate governance also supports just, open and transparent business practices providing a framework to shape investor choice while allowing shareholders to judge whether their interests are being met (Rasha, 2019; Rabelo and Vasconcelos, 2002). The emphasis on transparent, accurate and comparable financial information contributes to better data for monitoring economic performance and investor protection, aligning with SDG 17's data and accountability objectives.

Corporate governance is growing in importance as a driver of financial capital flows in emerging markets. They emphasize the need to allocate limited domestic savings to the most productive firms, which will only be done in an environment of governance, transparency and oversight. In developing economies, where market mechanisms (e.g. stock and bond markets or the banking system) are underdeveloped, corporate governance is an indispensable mechanism to provide managerial discipline and oversight. Corporate governance improves financial markets' performance and plays a key role in broader economic growth and social well-being by promoting efficient & fair allocation of financial resources (OECD, 2001, 2004).

The Egyptian capital market has received a lot of research attention, not only because of its rapid growth, but also because of the government efforts to resolve market inefficiency. This involves establishing a consistent set of regulatory regimes and providing minority shareholder safeguards. Hence, there is a need to explore the corporate governance mechanisms in the Egyptian capital market and its effect on the performance of public companies. In addition, the study intends to provide practical insights for the effective implementation of corporate governance aspects to improve the performance of Egyptian public listed companies. This research is even more significant when assessing the impact of earnings management mechanisms on the corporate governance and business indicators of the firms listed in the EGX.

2. RESEARCH PROBLEM

Many developing markets still face challenges in instituting effective corporate governance systems. Such challenges facing them to be effective are, among others, excessive role of government, concentrated ownership, weak external oversight, immature legal and regulatory framework, poor access to good quality of information, ineffectual protection of investors, and poorly developed capital markets (Hafiza and Susela, 2009; Claessens et al., 2000; Shleifer and Vishny, 1997). A developing market that is severely challenged with respect to the enforcement of corporate governance within its capital market is Egypt as a sales example (of many others). The need for slack: As indicated by Mensah (2002) and Rabelo and Vasconcelos (2002), governance principles used in industrialized economies are not always directly transferrable to the Egyptian market where there are different political, economic, technological and cultural climates.

Many factors inhibiting the evolution of corporate governance in Egypt have been identified in the literature. From the start, the Egyptian private sector is heavily comprised of family-held or closely held companies. Second, weak legal and judicial frameworks plague the country. Third, few R&D resources and close ties between government and finance make it worse. Fourth, the illiquid stock market at the moment, economic uncertainties, and weak or lack of enforcement of the law and investor protection make things difficult. Thirdly, low knowledge of corporate governance principles, low board independence, and structural weaknesses of

Egypt's economic framework are challenges (Omran et al., 2008; Desoky and Mousa, 2012; Fawzy, 2003; Khalifa M, Sally M, 2019). Finally, transitional economies exhibit relatively weaker internal and external corporate governance mechanisms than those in the developed markets. For instance: Boards of directors: Boards are frequently derelict in their duties as outlined in governance codes in developing markets. This failure can lead to corporate corruption and business bankruptcies. Scholars and policymakers alike have thus called for placing boards — and their performance — front and center in debates on governance reform and in academic work. One way to bring greater accountability to decision-making is to pay more attention to the conformance as well as to the performance role of board members. Scarcity of Information: Adequate accounting information systems are often lacking in many emerging markets. (2003) fail to assist the boards in supervising the financial disclosure process, guaranteeing the credibility of financial reporting and beyond to promoting transparency and social accountability.

In developed markets, governance is institutions are in place such as regulatory supervision, fraud detection, shareholders meetings disciplinary take over and independent directors (Monks, 2002). Such measures minimize managerial opportunism by developing a degree of transparency and accountability in the system. But in transitional economies, it is often going to be either weak regulatory framework and underdeveloped financial infrastructures resigned and these governance mechanisms become ineffective. Internal governance mechanisms, including ownership structure, board composition, and managerial characteristics, differ substantially across developed and developing economies (Mohd Noor, et al., 2022). In several post-socialist economies, ownership is dispersed among government entities, public corporations, managers, employees, private individuals, and foreign investors (Rousso & Marglin, 1996). This diffusion of ownership spreads accountability thin, making oversight by owners more theoretical than effective. As a result, capital interests are often overlooked, inducing a drop in long-term firm value (Peng & Shubt, 1997; Zu, 2006).

The study explores ownership structure as an important corporate governance mechanism, particularly within the context of Egypt. Egypt, typical of many transitional economies, has experienced big corporate failures, failed privatization and corrupt practices, all of which have blocked foreign and domestic investment. Family businesses play a dominant role in many nations leading to destabilized corporations which has grievous implications for the (Zero-Sum) economy (The World Bank, 2004). Following two corporate collapses and decreasing investor confidence, the government in Egypt launched a comprehensive corporate governance reform program in 2007 with the support of the International Bank for Reconstruction and Development. These reforms focused on ownership concentration as a tool for enhancing governance effectiveness. But an important question remains: Has the effect of ownership structure on firm performance shifted after the major reforms of corporate governance?

This study makes several key contributions to the literature on corporate governance in emerging economies: It has been shown that family and institutional ownership is a key factor in the corporate governance mechanism (Shleifer & Vishny, 1986; La Porta et al., 1999); however, few studies (particularly in an emerging economy like Egypt) have examined the direct effect of the ownership structure on the earnings management and financial performance. This study aims to fill this gap, providing context-specific insights. The effect of family ownership, earnings management and performance remain a theoretical conflict. The study examines the extent to which family board representation in Egypt reduces or increases earnings management activities and the extent to which earnings management practices enhance or destroy firm value.

Institutional investors play a growing role in corporations, especially in protecting minority shareholder interests. They now have moved from a global financial market with controlling investors to implication of an institutional market. This transition is driven by financial intermediation, financial engineering, the widening of financial assets, the development of information technology, and the increasing emphasis on transparency, fair decision making and corporate appraisal (Gholipour & Nahandi, 2011). Corporate governance codes usually come from cooperation between regulators, stock exchanges, firms, investors and sometimes NGOs, which is exactly the type of partnership SDG 17 promotes. It serves the further rollout of the principles of corporate governance. Nonetheless, given this changing global context, evaluating the value of institutional ownership for Egypt is also an important step toward better strategic management and improving the financial performance of firms. The current research answers the following questions:

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Do firm governance mechanisms—like family and institutional shareholding—curb the practice of earnings management in Egypt?

Does the shareholding for institution has more effective than the family holding in the Egyptian market?

3. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT:

Previous studies focus on the relationship between institutional/family shareholding and opportunistic earnings management that have been examined in respect of developed and developing economies using both listed and non-listed companies.

Wong et al. (2009) examined the unique and joint impacts of ownership structure and board composition on earnings management in Malaysia's construction, industrial products, and consumer products industries. Their results using multiple regression and correlation analyses on the data from 2001 to 2003 showed that the relationship between the earnings management and the ratio of external managers or social investors was not significant. Institutional investors rarely have the financial expertise to identify failures, and external monitoring is also ineffective, according to the report. Moreover, external directors in Malaysia are not always fully independent since they may have personal relations with internal managers or other directors. Hence, it is not much help to improve governance in such companies with concentrated pools of equity owners, simply by increasing the number of outside directors or institutional shareholders.

Following Wong et al., Iqbal and Strong (2010) examined 100 UK publicly listed companies (1991–1995) to investigate the influence of ownership structure, board composition, auditors, and investment strategies on earnings management (proxied by discretionary accruals). The findings revealed that firms exhibiting a greater number of non-executive directors, large block-holders, and lower debt-to-equity ratios were less likely to manipulate discretionary accruals. Furthermore, no significant association was identified between earnings management and both managerial and institutional ownership. Likewise, Big-6 auditors were found to have little impact on discretionary accruals.

Abdul-Jalil and Abdul-Rahman (2010) studied the impact of institutional investors behavior types (pressure-sensitive and pressure-insensitive) on the earnings management of Malaysian companies during the period 2002–2007. Using pooled OLS regression and multivariate analyses, their results suggested that pressure-insensitive investors did not reduce earnings management effectively, in contrast to earlier studies, including Brickley et al. (1988) – Abdul-Wahab & Abdul-Rahman (2009). And the study also uncovered a non-significant association between pressure-sensitive investors and discretionary accruals. This result confirms Cheng and Reitenga's (2009) expectation that sensitive investors refrain from confronting management to avoid damaging business relations or their portfolio.

Lastly, we found that the Malaysian Shareholders Watchdog Group (also known as MSWG), which included other entities such as Permodalan National Berhad (or PNB), played a pivotal role in limiting earnings management. This was instrumental in fostering governance led by MSWG, as it was the one who took the lead in ensuring managers to be held accountable through its shareholder actions. Ownership structures simply are not enough to curb earnings management; without active participation by shareholders, proxy votes, and direct involvement with the board, the value of an investment cannot be fully protected. Al-Fayoumi et al. (2010), to test the effect of ownership structure (external block-holders, insiders and institutional investors) on earnings management based on a sample of 195 firm-year observations from the Amman Stock Exchange (2001–2005). Using dynamic panel rather than ordinary least squares (OLS) estimation, the research highlighted the preeminence of insider ownership in Arab markets. It suggested implementation of policies against institutional investors to follow corporate governance to come up with credible and apparent earnings to promote economic efficiency, especially in the vast companies. Hadani et al. (2011) looked into the extent to which shareholder activism, via proxy mechanisms and monitoring ownership, serves as a constraint on earnings management.

Small & medium size enterprises (SMEs), most of them family-owned in Egypt, form the backbone of the economy. This ownership structure makes the corporate governance implementation process difficult, especially before the Egyptian revolution, as highlighted by Kenawy and Abd-Elgany (2009). Most entities whose stock is traded on the Egyptian stock exchange have a few key stakeholders, often government corporate entities, banks, or small businesses.

However, as corporate governance reforms aiming at aligning the interests of managers and shareholders, increasing transparency and reducing information asymmetry should boost investor confidence. Good corporate governance is also able

to reduce earnings management, whether for the purpose of earnings stability or for transparent information on future performance (Habbash, 2010; Tangjitprom, 2013). But Egypt is indeed a typical developing economy saddle with the considerable problem of executing corporate governance. Governance developments in mature economies are not necessarily suitable for developing economies (Rasha, 2019; Rabelo and Vasconcelos, 2002).

The adoption of corporate governance mechanisms is still at the development stage as noted in previous studies in Egypt (Omran et al., 2008; Desoky & Mousa, 2012; Fawzy, 2003; Mallin, 2003; Zu, 2006; Monks, 2000) The studies highlight the need to break through structural and institutional barriers to enhance governance mechanisms and lessen opportunistic earnings management behaviour.

For the abovementioned studies the research hypotheses are stated as:
  - ➢ *H1: There is a significant association between ownership structure and*

There is a significant relationship between explanator y variables and family ownership.
  - ➢ *H2: There is a significant relationship between explanatory variables and institutional ownership.*
  - ➢ *H3: There is a significant relationship between explanatory variables, ownership structure, and AEM.*
  - ➢ *H4: There is a significant relationship between explanatory variables, ownership structure, AEM, and the performance (ROA) ratio.*
  - ➢ *H5: There is a significant relationship between explanatory variables, ownership structure, AEM, and the performance (ROE) ratio.*
  - ➢ *H6: There is a significant relationship between explanatory variables, ownership structure, AEM, and the performance (EPS) ratio.*
  - ➢ *H7: There is a significant relationship between explanatory variables, ownership structure, AEM, and the performance (ROS) ratio.*

4. RESEARCH METHODOLOGY

4.1. *The Sample Of The Study*

The sample includes 49 itemized companies whose stocks are midst of Egypt's 100 most dynamically transacted shares (EGX100 price index) for 8 years from 2006, 2007, 2008, 2009, 2010, 2011, 2012, and 2013. The companies that are excluded from the sample are as follow:
  - ➢ Banks and financial institutions, and insurance companies because the capital as well as investment environment in these

businesses cannot be compared to the non-financial companies, in addition, these institutions are governed under specific laws and have different regulators.
  - ➢ Some companies got disqualified from the sample, though yearly reports were obtainable as the firms were enrolled in succession to years 2006, 2007, 2008, 2009, 2010, 2011, 2012, and 2013**.**
  - ➢ Some companies having not enough and absent information and were generally disqualified in the analysis of data.
  - ➢ Companies having not enough information to calculate discretionary accruals are eradicated as well.

4.2. *Variables Measurement*

Gathering all variables included in the research hypotheses leads to build up the research model. The research model (Fig.1) includes different types of variables. It includes an endogenous variable, which is the financial performance in relation to ownership structure and earnings management, which are considered as exogenous variables, and can be considered at the same time as endogenous variables in relation to explanatory variables. This model includes the variables of the study that can be considered the main description of the research problem.

First, Endogenous Variables

The main target of the research is to examine how corporate governance mechanisms affect financial performance. In this study, the financial performance of the firms is going to be evaluated using historical accounting-based measures. This study used several techniques to measure the performance of the publicly traded companies such as Return on Equity (ROE), Return on Assets (ROA), Earning per Share (EPS and return on sales (ROS). These metrics provide a holistic view of how profitable a company is, how efficiently it operates, and how well it generates value for shareholders. ROA is the important decision-making performance to measure management's effectiveness on the utilization of the organizations' overall assets for earning the net income and calculated by Net profit after tax/Total Assets. This ROE influences the amount of return investors will receive on their property investment. It reveals how much the company can earn on its capital. ROS measures how much of the generated net revenue a company keeps, and what percentage constitutes net profit, the higher the percentile the better. It is calculated as net income

divided by net sales. A lower level of ROS might indicate being more susceptible to revenue fluctuations. EPS, on the other hand, is the amount of a company's profit allocated to each outstanding share of common stock, which is simply the net income divided by the weighted average of the common shares that company had outstanding over a specific period of time. Together, these indicators offer a solid basis for analysing firm performance from the aspects of asset usage, equity profit, revenue effectiveness, and stockholder return.
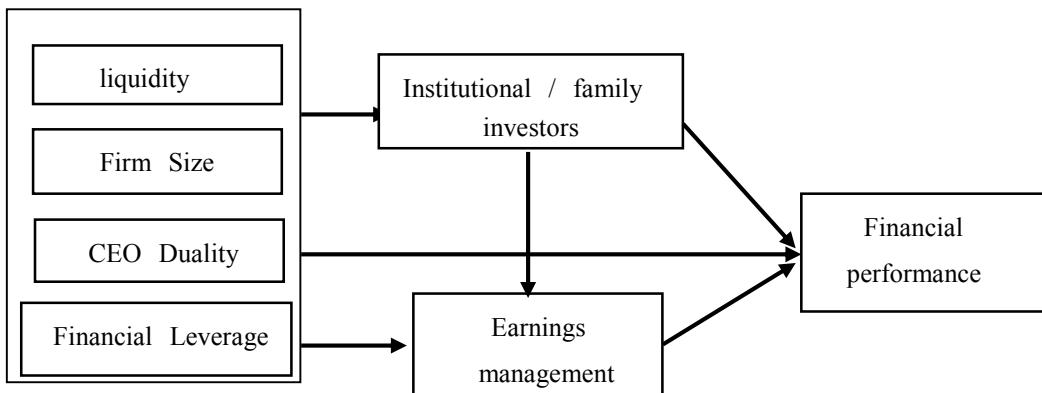

Figure 1: Model Development.

Second: Exogenous Variables

In order to control for the influences of governance-performance-earnings management relationship, firm size, leverage, CEO duality, and liquidity are used to control for firm specific characteristics that would otherwise bias the association between governance and performance as proxied by ROA, ROE, ROS, and EPS.

First, Size (logarithm of total assets): it is calculated by the ordinary logarithm of total assets as in Omran et al. (2008), and Mallorqui & Martin (2011) and Claessens, et al. (2000). Because of having more bureaucratic government, more drawbacks in agency and extra redundancy, bigger companies are not considered to be as proficient as minor companies. Second; The Firms Leverage (D/E) Excess managerial discretion is disciplined through leverage (total debt to equity). High leverage imposes discipline on management to make effective decisions and limits value-reducing behaviour, and thus does lead to superior corporate governance (Jensen, 1993). Third, CEO Duality is a dichotomous variable representing whether or not the CEO also serves as chair of the board, indicative of governance structure. Agency theory posits that duality detracts from board independence, while stewardship theory asserts that it is a potential source of strong leadership, which could increase strategic focus and alignment (Rouf, 2012; Habbash, 2010; Board, 1995). Fourth, Liquidity (current assets divided by current liabilities) measures a company's ability to meet its short-term commitments. Large amount of liquidity implies flexibility as well as ability to survive, while also indicating unnecessary idle resources and hidden opportunity costs (Lee, 2011).

Taken together these variables augment the robustness of the analysis by controlling for differences between firms and in turn allow the true impact of governance mechanisms on performance to be isolated.

Third: Mediator Variables

The independent variables that are expected to have a direct influence on the dependent variables, which include family ownership, institutional ownership, and accrual earnings management, are as follow:

❖ Family ownership

The mediator variable of the study is the ownership structure that entails non-families as well as families' organizations. The dummy variable is considered as one in case the company allows an occurrence of an overriding shareholder who is the family chief shareholder and owns more than the percentage of institutional shareholding, else like to zero. The researcher analyzes the previous literature to reach this certain measure for the family ownership and institutional measures.

❖ Institutional Ownership

The threshold variable is considered the equity percent that is possessed by national business firms, governmental institutions, financial institutions, corporate institutions, mutual funds, foreign financial institutions, foreign institutions, foreign mutual funds and international reciprocated

capitals, as well as lots of further firms. These businessmen have the abilities to control and affect the managerial actions in a direct way thru owning, or in an indirect manner thru selling the shares they have in the stocks market **(Gillan, and Starks, 2000 and 2003)**.

❖   *Earnings Management*

Generally, two classifications of earnings' management are there in the literatures: the accruals related earnings' management technique as well as the real earnings management technique. The researcher focused on using discretionary accruals because of the high cost of using real earnings management. Discretionary accruals are considered the fundamental method of proxies or measurements to compute the earnings' management.

All through the literature, discretionary accruals are greatly measured in six models: the Healy model (1985), the DeAngelo model (1986), the Jones' model (1991), the Modified Jones' Model **(Dechow et al., 1995)**, the Industry Model (**Dechow et al., 1996**), and the Cross-Sectional Jones' Model **(Jiambalvo, 1996)**. **Dechow et al. (1995)** assessed the usage of five of those models in identifying earnings' management thru contrasting the specifications and influence of widely performed tests used in the models. **Dechow**

et al. (2000) revealed that unlike other models, the Modified Jones' Model outpaced in identifying earning' management and is considered a very influential model to estimate the discrete accruals amongst the current ones. Accordingly, the modified cross-sectional jones model will be employed to measure earnings management in this thesis **(Duru, and Tsitinidis, (2013)**, **Habbash, (2010)**, **Wang, (2004), and Song, (2013).**

Based on modified jones model, earnings are decomposed into cash and non-cash elements; moreover, it is supposed that the cash earnings are somewhat high in cost in order to be manipulative. That is why, splitting the non-cash portion, i.e. accruals, to normal (non-discretionary) or abnormal (discretionary) is considered the main issue. If the accounting earnings are transferred by managers throughout the periods of time, then this could be clarified through the discretionary accruals. Thus, the manipulations of managers are opened through discretionary accruals. Furthermore, the non-manipulative accruals of accounting are reflected through non-discretionary accruals as managers cannot regulate and control them **(Dechow et al., 1995).**

Predicted Discretionary Accruals is considered a measure of the activity of EM. This breaking down could be designated in the succeeding equations:

1-Full Accruals as Stated Earlier Is The Difference Between Earnings And Cash Flows In The Operating Activities (Equation 1)

$$TACC._{it} = N.I_{it} - O.C.F_{it} \qquad (1)$$

Where:

$TACC._{it}$ = *Total accruals of company i in year t .*

$N.I_{it}$ = *Net income before extraordinary items for company i in year t.*

$O.C.F_{it}$ = *operating cash flows for company i in year t.*

2-Equation 2 Below Is Predicted For Each Company And Fiscal Year Combination

$$\frac{TACC._{it}}{A_{it-1}} = \alpha_1 \left(\frac{1}{A_{it-1}}\right) + \alpha_2 \frac{\Delta REV._{it} - \Delta REC._{it}}{A_{it-1}} + \alpha_3 \left(\frac{PPE_{it}}{A_{it-1}}\right) + e \qquad (2)$$

Where:

$TACC._{it}$ = *Total accruals for company i in year t.*

A_{it-1} = *Lagged total asset for company i.*

$\Delta REV._{it}$ = *change in operating revenues of company i in year t.*

$\Delta REC._{it}$ = *change in net receivables of company i in year t.*

PPE_{it} = *Gross property, plant and equipment for company i in year t.*

$\alpha_1 - \alpha_3$ = *Regression parameters.*

e = *error term.*

3- Normal (Non discretionary) Accruals Are Measured For Each Year And Fiscal Year Combination Using (Equation 3) As Indicated Below :

$$\frac{N.DTACC_{it}}{A_{it-1}} = â_1 \left(\frac{1}{A_{it-1}}\right) + â_2(\Delta REV_{it} - \Delta REC_{it}) + â_3 PPE_{it} + e \qquad (3)$$

Where as

$N.DTACC_{it}$ = *Non discretionary total accruals of company i in year t*

A_{it-1} = *Lagged total asset of company i*

ΔREV_{it}= *Change in operating revenues for company i in year t*

ΔREC_{it}= *Change in net receivables for company i in year t*

PPE_{it}= *Gross property, plant and equipment for company i in year t*

$â_1$-$â_3$= *parameters of regression*

4-The Difference between total accruals and the non-discretionary components of accruals is considered as discretionary accruals (DACC) as stated in equation 4

$$DACC._{it} = TACC._{it} - N.DACC._{it} \qquad (4)$$

$DACC._{it}$ = *discretionary accruals for company i in year t.*

$TACC._{it}$ = *total accruals for company i in year t.*

$N.DACC._{it}$ = *non-discretionary total accruals for company i in year t.*

N. b.: The whole variables have been scaled by lagged total assets.

Prediction By Using Ordinary Least Square Method

Linear regression has been used for calculating coefficients α_1, α_2, and α_3. Therefore, large values of discretionary accruals have been usually understood as suggestive of earnings management as discretionary accruals could be used in either increasing or decreasing earnings, in particular situations **(e.g Dechow *et al.*, 1995, Khaled, 2005, Basiruddin, 2011)**.

5. EMPIRICAL RESULTS

This section is divided into two subsections for studies, the first of them shows the analysis of data **before** the Egyptian revolution 2006 -2010, and the second subsection is proposed the data analysis **after** the Egyptian revolution 2010-2013 as follows:

5.1. Empirical Result Before Egyptian Revolution

The path analysis using structural equation modeling before Egyptian revolution from (2006-2010). It is important firstly to set up some simultaneous equations of strutural model to indicate direct and indirect relationship between the study variables before expalining the following figure in-details as follow;

Thus, the structural Equations can be presented as Follows:

$$M1 = a_1X_1 + a_2X_2 + a_3X_3 + a_4X_4 + e_1$$
$$M2 = a_1X_1 + a_2X_2 + a_3X_3 + a_4X_4 + e_2$$
$$M3 = a_1X_1 + a_2X_2 + a_3X_3 + a_4X_4 + a_5 M_1 + a_6 M_2 + e_3$$
$$Y1 \text{ (ROA)} = a_1X_1 + a_2X_2 + a_3X_3 + a_4X_4 + a_6 M_1 + a_7 M_2 + a_8 M_3 + e_4$$
$$Y2 \text{ (ROE)} = a_1X_1 + a_2X_2 + a_3X_3 + a_4X_4 + a_6 M_1 + a_7 M_2 + a_8 M_3 + e_5$$
$$Y3 \text{ (EPS)} = = a_1X_1 + a_2X_2 + a_3X_3 + a_4X_4 + a_6 M_1 + a_7 M_2 + a_8 M_3 + e_6$$
$$Y4 \text{ (ROS)} = = a_1X_1 + a_2X_2 + a_3X_3 + a_4X_4 + a_6 M_1 + a_7 M_2 + a_8 M_3 + e_7$$

Where;

X1: Firm Size (LOG T.A)

X2: Liquidity (Current Ratio)

X3: Financial Leverage (DER)

X4: CEO Duality

M1: Family Ownership

M2: Institutional Ownership

M3: Earnings Management

Y1: Return on Assets (ROA)

Y2: Return on Equity (ROE)

Y3: Earning Per Share (EPS)

Y4: Return on Sales (ROS)

Then, the figure (2) presents the direct and indirect relationship between the endogenous and exogenous variables (explanatory variables, family ownership, institutional ownership, earnings management, and four performance measures) before Egyptian revolution from (2006 to 2010) including 245 observations.
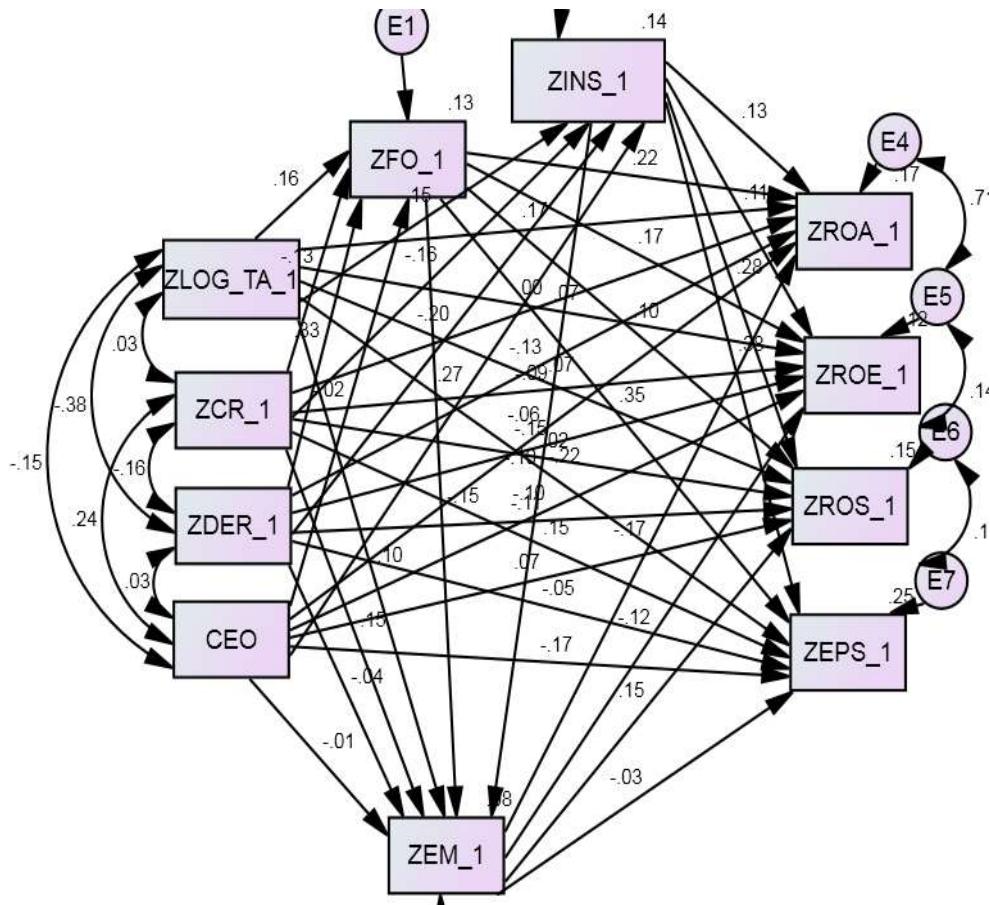
Figure 2: Structural Model Before the Exclusion of Non-Significant Relationship Before Egyptian Revolution Period.

- *Structural Model Before Excluding Non-Significant Paths*

The regression weight data listed in Table (1) suggests removing paths with a P-value of greater than 0.10 for the purpose of improving the overall fit of the model. A notable point is that the parameter estimation in this study is based on Maximum Likelihood (ML) method not Ordinary Least Squares (OLS). In contrast to how OLS minimizes the squared deviations between the observed values of the dependent variable and those predicted by the model, ML uses an iterative procedure that tries to maximize the probability that the observed values are predictably accurate. This latter approach allows for much stronger parameter estimation, especially in the case of structural equation modeling.

Table 1: Regression Weights According to Maximum Likelihood Estimates Before Revolution Period (2006-2010).

			Stand estimate	Unstand. Estimate	S.E.	C.R.	P
ZFO_1	<---	ZLOG_TA_1	.163	.163	.066	2.489	.013
ZFO_1	<---	ZCR_1	-.134	-.134	.063	-2.138	.033
ZFO_1	<---	CEO	-.022	-.047	.133	-.351	.726
ZFO_1	<---	ZDER_1	.325	.325	.066	4.944	***
ZINS_1	<---	ZLOG_TA_1	.147	.147	.065	2.250	.024
ZINS_1	<---	ZCR_1	-.159	-.159	.062	-2.560	.010
ZINS_1	<---	ZDER_1	-.200	-.200	.065	-3.066	.002
ZINS_1	<---	CEO	.271	.575	.132	4.361	***
ZEM_1	<---	ZINS_1	-.099	-.099	.066	-1.491	.136
ZEM_1	<---	ZFO_1	-.148	-.148	.066	-2.244	.025
ZEM_1	<---	CEO	-.013	-.028	.142	-.199	.843
ZEM_1	<---	ZLOG_TA_1	.103	.104	.069	1.501	.133
ZEM_1	<---	ZDER_1	-.041	-.041	.072	-.566	.572

ZEM_1	<---	ZCR_1	.149	.150	.066	2.271	.023
ZEPS_1	<---	ZFO_1	.351	.356	.061	5.880	***
ZROA_1	<---	ZINS_1	.127	.128	.063	2.016	.044
ZROA_1	<---	ZFO_1	.220	.220	.063	3.477	***
ZROA_1	<---	ZCR_1	.004	.004	.063	.066	.947
ZROA_1	<---	ZDER_1	-.129	-.129	.069	-1.880	.060
ZROA_1	<---	ZEM_1	-.168	-.168	.061	-2.753	.006
ZROE_1	<---	ZINS_1	.105	.104	.064	1.619	.105
ZROE_1	<---	ZFO_1	.173	.171	.064	2.670	.008
ZROE_1	<---	ZCR_1	-.087	-.086	.064	-1.345	.179
ZROE_1	<---	ZDER_1	-.148	-.146	.070	-2.101	.036
ZROE_1	<---	ZEM_1	-.121	-.120	.062	-1.941	.052
ZROS_1	<---	ZINS_1	.276	.276	.064	4.324	***
ZROS_1	<---	ZDER_1	-.108	-.108	.069	-1.554	.120
ZROS_1	<---	ZCR_1	.022	.022	.064	.341	.733
ZROS_1	<---	ZFO_1	.101	.100	.064	1.575	.115
ZROS_1	<---	ZEM_1	.149	.149	.061	2.425	.015
ZEPS_1	<---	ZINS_1	.384	.389	.061	6.420	***
ZEPS_1	<---	ZCR_1	.147	.149	.061	2.461	.014
ZEPS_1	<---	ZDER_1	-.046	-.046	.066	-.703	.482
ZEPS_1	<---	ZEM_1	-.030	-.030	.058	-.521	.603
ZROA_1	<---	ZLOG_TA_1	.173	.174	.066	2.630	.009
ZROE_1	<---	ZLOG_TA_1	.073	.072	.067	1.075	.282
ZROS_1	<---	ZLOG_TA_1	.068	.068	.066	1.024	.306
ZEPS_1	<---	ZLOG_TA_1	-.220	-.223	.063	-3.538	***
ZROA_1	<---	CEO	-.057	-.122	.135	-.902	.367
ZROE_1	<---	CEO	-.100	-.210	.136	-1.538	.124
ZROS_1	<---	CEO	.069	.146	.136	1.073	.283
ZEPS_1	<---	CEO	-.168	-.361	.129	-2.799	.005

* Significant At Level Less Than (0.05).
** Significant At Level Less Than (0.01).

- *The Goodness Fit of the Structural Model*

The recommended fit indices were by no means approached by the goodness of fit values of the hypothesized model (as shown in Table 2). The results indicate that the Critical ratio normed chi-square is > 5 % which means that the model is not the best fitted model, > (P-value >. 05 then null hypothesis is accepted (H0) that is observed model is same as the theoretical model. The other measures' values also settle (RFI=. 856), (TLI=. 941), (NNFI=. 865), (CFI=. 859), and (RMSEA=. 083) suggests that this one-researcher comparison model not be retained as final.

These statistics are indicative of a 'poor fit' to the hypothesized model. Because the hypothesized model did not fit well, we reject it although some fit indices appear to be well-fitting for the standardized model.

Table 2: The Goodness of Fit Indices in the SEM.

Chi-Square	28.374
Degree of Freedom	4
Level of Significance	.077
Normed Chi-Square	7.08
Root Mean Square Residual (RMR)	.072
Goodness of Fit Index (GFI)	.949
Adjusted Goodness of Fit Index (AGFI)	.857
Normed Fit Index (NFI)	.865
Relative Fit Index (RFI)	.856
Incremental Fit Index (IFI)	.871
Tucker Lewis Index (TLI)	.941
Comparative Fit Index (CFI)	.859
Root Mean Square Residual Approximation (RMSEA)	.083
R^2: INS.OWN=13.6%, R^2 : F.O=12.5%, R^2: EM= 7.8%, R^2: ROS= 14.8%, R^2: ROE= 11.8%, R^2: ROA= 16.6%, R^2:EPS= 25.4 %	

5.2. *Empirical Results After Egyptian Revolution*

The path analysis using structural equation modeling after Egyptian revolution from (2011-2013). The descriptive statistics and univariate analysis of

all observations with minimum, mean, skew, median, kurtosis, maximum and normal tested are obtained using Kolmogorov-Smirnov after the Egyptian Revolution (2011–2013) as shown in **Table 3** for each model separately. For the purposes of the analysis, all variables were divided based on the level of ownership structure

into household and institutional contribution. The rationale behind dividing firms into two groups enable the current study to gain more insight regarding the effectiveness of corporate governance mechanisms, and additional information regarding company characteristics such as size, leverage, CEO copy, and liquidity is also expected.

Table 3: Descriptive Statistics for Variables in Egyptian Companies After Egyptian Revolution.

		Mean	Standard deviation	Skwenes	Kolmogorov-Smirnov	
					statistics	sig
Panel 1 ROA	FAM	2.7512	3.87946	.183	.11	.003
	INST	6.6026	5.169	.382	.150	.017
ROE	FAM	5.5844	10.27654	.835	.113	.002
	INST	10.90	9.75688	.868	.132	.056
ROS	FAM	16.044	16.755	.672	.154	0000
	INST	21.649	16.727	.167	.091	.2000*
EPS	FAM	.4136	.67682	.480	.141	.00000
	INS	.7121	.68578	-.331	.074	.2000*
Panel 2 EM	FAM	-.07231	.0658	.593	.082	.084
	INST	-.06446	.050597	-.154	.080	.200*
Panel3 FIRM SIZE	FAM	7.01716	1.253442	.298	.114	.002
	INST	7.20411	2.16698	-.941	.236	000
LIQ	FAM	1.3997	.64405	.058	.085	.060
	INST	1.6657	.54737	.157	.090	.200*
FIN LEVER	FAMI	.7008	.60405	.728	.142	0000
	INS	.4819	.56508	1.501	.234	0000

Panel 1 of Table (3) displays descriptive statistics of ROA, ROE, ROS, EPS in family and institutional ownership and indicates that performance measures using (ROA, ROE, ROS, EPS) is most prevalent in the institutional shareholding, followed by family ownership.

Panel 2 of Table (3) displays the descriptive statistics of discretionary accruals (EM) in both family and institutional ownership after Egyptian revolution. The results reveal that less dominance of earnings management in family ownership over institutional ownership. This is consistent with karuntarat, (2013) and Ghabdian, et al., (2012) who found significant and negative relationship between family firm and discretionary accruals. This result is as same as the results before Egyptian revolution regarding to the relationship between families and earnings management.

Panel 3 of Table (3) shows the descriptive statistics of firm size, financial leverage, and liquidity in both family and institutional ownership. The results reveal that the average of financial leverage of family firm (mean= .7008) is greater than the average number of financial leverages in institutional shareholding (mean= .4819). Worth mentioning that family firm are highly leverage as they depend more on funding from banks rather than issuing stocks for their expansion of investment. On the other hand, the mean of liquidity (1.39) in family firm is slightly

lower than the mean of liquidity (1.66) in institutional firm. The finding implies that the standard deviation of liquidity is greater than its mean. This implies a high level of dispersion between family and institutional companies on their level of liquidity. The descriptive statistics also implies that the standard deviation of firm size in family and institutional ownership is greater than its mean. This implies high level of dispersion between family and institutional ownership on their firm size.

Before testing research hypotheses, the regularity test is achieved to statistically measure whether data originates from a normal distribution or not. Rendering to Kolmogorov-Smirnov test, the null hypothesis recommends that the data is normally distributed. The p-value for each predictor is less than 5%, which means that the null hypothesis is rejected. This concludes that there is a fluctuation in financial data recorded in financial reports in Egyptian stock market.

Correlation Coefficient Matrix

In addition to take a look at the OLS estimates; also, a Pearson correlation matrix was built as in Table (4). According to the findings, institutional ownership, size of the firm and CEO duality are positively and significantly related to profitability ratios which are ROA, ROE, EPS and ROS at the 90 and 95 percent confidence level. Also, there is a positive linear relationship between family

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ownership and EPS at the 90% and 95% confidence level. Besides, the test indicates that there is a significant negative linear link between family ownership and earnings management (the correlation coefficient is) at 95% and 90% confidence levels. This implies that family ownership is negatively related to the extent of earnings manipulation. Such high correlations can produce serious distortion in Regressions (Enders, 2010). which is present when two or more independent variables are highly correlated, and also influence the regression results. Nevertheless, as evidenced by data up to October 2023 in the Pearson correlation matrix in Table (4), multicollinearity is not a problem in the current study. All variables show correlation coefficient values less than 0.8, which is an assumed threshold for a possibility of multicollinearity according to Gujarati (2003) and Abdul Rahman and Ali (2006).

Table 4: Pearson Correlations Coefficients for Explanatory Variables, Ownership Structure, Earnings Management, And Financial Performance After Egyptian Revolution.

Dimension	firm size	liquidity	financial leverage	CEO duality	INS. own	family own	EM	ROA	ROE	EPS	ROS
FIRM SIZE	1										
LIQUIDITY	*0.117*	1									
FINACIAL LEVERAGE	*-.288(**)*	*-0.013*	1								
CEO duality	*-0.147*	*-0.071*	*-0.045*	1							
Institutional ownership	*.287(**)*	*0.055*	*-0.119*	*.165(*)*	1						
Family own	*0.057*	*-0.027*	*0.136*	*-0.014*	*-.191(*)*	1					
EM	*-0.036*	*.232(**)*	*-0.052*	*0.128*	*0.048*	*-.299(**)*	1				
ROA	*.450(**)*	*.312(**)*	*-0.139*	*0.032*	*.483(**)*	*-0.062*	*.245(**)*	1			
ROE	*.284(**)*	*0.157*	*-0.074*	*0.043*	*.544(**)*	*-.173(*)*	*0.208*	*.762(**)*	1		
ROS	*.228(**)*	*0.042*	*-.254(**)*	*0.123*	*.509(**)*	*-0.038*	*0.135*	*.542(**)*	*.590(**)*	1	
EPS	*0.131*	*.299(**)*	*-0.043*	*-0.047*	*.451(**)*	*.198(*)*	*0.162*	*.613(**)*	*.593(**)*	*.367(**)*	1

Evaluating Direct Relationship Between Family Structure and Financial Performance or Indirectly Through Earnings Management Practices

Family ownership has a direct & linear positive impact on profitability measured by (ROA), Return of Equity (ROE), Return of sales (ROS) & Earnings per share (EPS) having 0%, 0%, 10.6%, 34% accordingly. The indirect relationship between family ownership and performance flow is showed the negative numbers of -6%, 0%, -5.1%, and -6.6% for ROA, ROE, ROS, and EPS respectively, due to the mediating role of earnings management. This indicates that family ownership directly impacts performance positively, but indirectly through earnings management it has a negative effect. In particular, a higher level of family ownership leads to a 29.8% decrease of opportunistic earnings practices. This result indicates that earnings management, a mediating variable in this case, has a negative effect on the positive relationship occurred between family ownership and the organizational performance. Second, institutional ownership has a strong direct linear effect on organizational performance, which illustrates ROA, ROE, ROS, and EPS at 13.6%, 58.6%, 52.8%, and 48%, respectively. On the other hand, the indirect relationship between institutional ownership and performance through earnings management.

Table 5: Standardized Direct Effects Between Family Ownership, Institutional Ownership and Performance After Egyptian Revolution.

	ZDER_1	ZCR_1	CEO	ZLOG_TA_1	ZFO_1	ZINS_1	ZEM_1
ZINS_1	.000	.000	.034	.577	.000	.000	.000
ZEM_1	.000	.178	.153	.000	-.298	.000	.000
ZROS_1	-.145	.000	.000	.000	.106	.528	.171
ZROE_1	.000	.133	.000	-.072	.000	.586	.000
ZROA_1	.000	.320	.000	.435	.000	.136	.202
ZEPS_1	.000	.245	.000	.000	.340	.480	.222

Table 6: Standardized Indirect Effects Between Family Ownership, Institutional Ownership and Performance Through Earnings Management After Egyptian Revolution.

	ZDER_1	ZCR_1	CEO	ZLOG_TA_1	ZFO_1	ZINS_1	ZEM_1
ZINS_1	.000	.000	.000	.000	.000	.000	.000
ZEM_1	.000	.000	.000	.000	.000	.000	.000
ZROS_1	.000	.031	.044	.305	-.051	.000	.000
ZROE_1	.000	.000	.020	.339	.000	.000	.000
ZROA_1	.000	.036	.036	.079	-.060	.000	.000
ZEPS_1	.000	.040	.050	.277	-.066	.000	.000

Second Structural Group to Measure The Influence Of The Institutional Ownership Concentration on EMs and Financial Performance

The structural model **(2)** and **Table (7)** show the results of firm-fixed effects regression to examine an influence of institutional ownership on discretionary accruals and on firm enactment (ROA, ROE, ROS, and EPS) from (2006 to 2013).
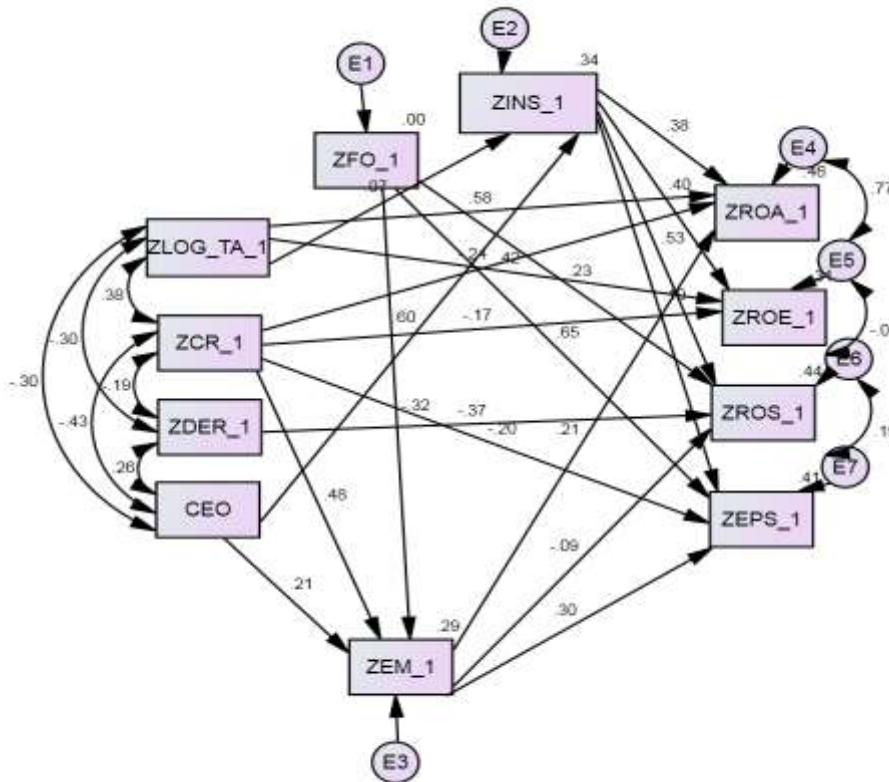
Figure 3: Structural Model Measuring Institutional Ownership on Earnings Management And Financial Performance.

Table 7: Regression Weights According To Maximum Likelihood Estimates.

			Estimate	Standardized Estimate	S.E.	C.R.	P
ZEM_1	<---	ZFO_1	-.254	-.322	.102	-2.485	.013
ZEM_1	<---	CEO	.323	.205	.226	1.430	.153
ZEM_1	<---	ZCR_1	.445	.479	.133	3.334	***
ZINS_1	<---	ZLOG_TA_1	.044	.067	.086	.512	.609
ZINS_1	<---	CEO	1.232	.599	.269	4.588	***
ZEPS_1	<---	ZFO_1	.674	.654	.130	5.171	***
ZROA_1	<---	ZINS_1	.452	.379	.139	3.254	.001
ZROA_1	<---	ZCR_1	-.347	-.240	.187	-1.853	.064
ZROA_1	<---	ZEM_1	.321	.206	.122	2.629	.009
ZROE_1	<---	ZINS_1	.422	.404	.138	3.069	.002
ZROE_1	<---	ZCR_1	-.210	-.166	.180	-1.169	.242
ZROS_1	<---	ZINS_1	.677	.533	.148	4.580	***

ZROS_1	<---	ZDER_1	-.548	-.367	.171	-3.209	.001
ZROS_1	<---	ZFO_1	.303	.231	.159	1.900	.057
ZROS_1	<---	ZEM_1	-.147	-.089	.202	-.729	.466
ZEPS_1	<---	ZINS_1	.099	.099	.123	.805	.421
ZEPS_1	<---	ZCR_1	-.249	-.205	.160	-1.550	.121
ZEPS_1	<---	ZEM_1	.393	.301	.180	2.187	.029
ZROA_1	<---	ZLOG_TA_1	.454	.581	.096	4.752	***
ZROE_1	<---	ZLOG_TA_1	.285	.416	.095	3.002	.003

** Significant At Level Less Than (0.01).
*** Significant At Level Less Than (0.001).

First, there are non-significant linear relationships between the constructs of family ownership, the firm size (log-TA), financial leverage (debt-equity ratio), liquidity, and CEO duality, where values at significant level greater than (0.05) (0.001) respectively. This does not confirm the first research hypothesis, where the significant of critical ratio is greater than (0.05).

Second, there is a significant positive linear relationship between the institutional ownership, firm size, and values at significant level less than (0.05) (0.001) respectively. This confirms the second research hypothesis except for the construct of CEO duality, financial leverage and liquidity, where the significant of critical ratio is greater than (0.05), with regression model.

$$INS.OWN = .599CEO + .067LOGTA$$

Third, there are significant positive linear relationships between Earning management, liquidity (current ratio), CEO duality, and values at significant level less than (0.001). On the other hand, there is a significant negative linear relationship between earnings management and family ownership and values at significant level less than (0.001). This confirms the third research hypothesis, except for the construct of firm size, CEO duality, financial leverage, and institutional ownership, where the significant of critical ratio is greater than (0.05) with regression model.

$$EM = .479CR + .205CEO - .322F.O$$

Fourth, there are significant positive linear relationships between performance using ROA measure, institutional ownership, earnings management, firm size, and values at significant level less than (0.001). There is a significant negative linear relationship between performance using ROA measure, and liquidity and values at significant level less than (0.001). This confirms the fourth research hypothesis, except for the construct of family shareholding, financial leverage, and CEO duality, where the significant of critical ratio is greater than (0.05) with regression model.

$$ROA = .379INS - .240CR + .206EM + .581LOGTA$$

Fifth, there are significant positive linear relationships between performance using ROE, institutional shareholding, firm size, and values at significant level less than (0.001). Alternatively, there is a significant negative linear relationship between performance using ROE, and liquidity and values at significant level less than (0.001). This confirms the fifth research hypothesis, except for the construct of financial leverage, CEO duality, family shareholding, and earnings management where the significant of critical ratio is greater than (0.05) with regression model.

$$ROE = .404INS - .166CR + .416LOGTA$$

Sixth, there are significant positive linear relationships between performance using EPS, institutional ownership, family ownership, earnings management, and values at significant level less than (0.001). There is a significant negative linear relationship between performance using EPS, and liquidity and values at significant level less than (0.001). This confirms the seventh research hypothesis except for the construct of financial leverage, firm size, and CEO duality, where the significant of critical ratio is greater than (0.05) with regression model.

$$EPS = .654FO + .099INS - .205CR + .301EM$$

Seventh, there are significant positive linear relationships between performance using ROS, family shareholding, institutional shareholding, and values at significant level less than (0.001). Alternatively, there are significant negative linear relationships between performance using ROS, financial leverage, and earnings management where values at significant level less than (0.001). This confirms the sixth research hypothesis, except for the construct CEO duality, firm size, and liquidity, where the significant of critical ratio is greater than (0.05) with regression model.

$$ROS = .533INS + .231FO - .089EM - .367DER$$

Evaluating Direct Relationship Between Family/Institutional Structure and Financial Performance or Indirectly Through Earnings Management After Egyptian Revolution Period (2011-2013)

Regarding direct and Indirect Impacts of ownership structures on corporate performance: The associations between two dimensions of ownership structure (i.e., family ownership and institutional

ownership) and organizational performance are addressed in Tables 6 and 7, with earnings management being tested as a mediating variable. This allows for the discovery of potential direct as well as indirect effects of ownership structures on firm performance, and the strength and direction through the mediation path.

Results The results Tables 8 and 9 show two prominent observations for which:To begin with, family ownership indicates a direct positive relationship with firm performance, particularly when based on ROS (23.1%) and EPS (65.4%) whereas no direct effect is found on ROA and ROE. However, indirect effects through earnings manipulation result in contradictory findings, where they are negative on ROA (−6.6%) and EPS (−9.7%), marginal positive on ROS (2.9%), and none on ROE. These findings indicate that family ownership does result in improved performance by a direct effect, but other channels work against this finding, and earnings management in particular erodes these effects, in ROA and EPS in particular. This confirms that the presence of earnings management in family-controlled firms is costly in terms of decreased firm performance since discretion are more relevant.

Accordingly, earnings management is such an essential mediating role, which weakens the positive influence of family ownership.

Second, institutional ownership exerts a significant positive direct impact on performance which is significant and positive, as evidenced by 37.9% of ROA, 40.4% of ROE, 53.3% of ROS and 9.9% of EPS. By contrast, the mediating effects of institutional cross-ownership through earnings management is nonexistent on all performance measures (0%). This result suggests that, in making firms more effectively monitored and governed, the impact of institutional ownership on firm performance is largely attributable to direct motives (monitoring and governance) and not to indirect motives based on the discretionary reporting of accruals. The lack of an indirect effect implies that institutional investors have low level of dependence on earnings manipulation and thus they perform their role efficiently as an external monitor. The findings of the study underline the significance of the ownership structure in determining the organisational outcomes and the subtle position of the earnings management that acts as a mediating mechanism especially in family firms.

Table 8: Standardized Direct Effects Between Institutional Ownership, Family Ownership And Performance.

	ZDER_1	ZCR_1	CEO	ZLOG_TA_1	ZFO_1	ZINS_1	ZEM_1
ZINS_1	.000	.000	.599	.067	.000	.000	.000
ZEM_1	.000	.479	.205	.000	-.322	.000	.000
ZROS_1	-.367	.000	.000	.000	.231	.533	-.089
ZROE_1	.000	-.166	.000	.416	.000	.404	.000
ZROA_1	.000	-.240	.000	.581	.000	.379	.206
ZEPS_1	.000	-.205	.000	.000	.654	.099	.301

Table 9: Standardized Indirect Effects Between Family Ownership, Institutional Ownership and Performance Through Earnings Management.

	ZDER_1	ZCR_1	CEO	ZLOG_TA_1	ZFO_1	ZINS_1	ZEM_1
ZINS_1	.000	.000	.000	.000	.000	.000	.000
ZEM_1	.000	.000	.000	.000	.000	.000	.000
ZROS_1	.000	-.043	.301	.036	.029	.000	.000
ZROE_1	.000	.000	.242	.027	.000	.000	.000
ZROA_1	.000	.099	.269	.025	-.066	.000	.000
ZEPS_1	.000	.144	.121	.007	-.097	.000	.000

Comparing Empirical Result Between Family and Institutional Ownership Respectively After Egyptian Revolution.

In respect to the study hypotheses, this section studies and compares the impact of family/ institutional ownership attention on EMs and firm performance using several accounting measures after Egyptian revolution from (2011-2013) as shown in **Tables (10)** and **(11)**. The tables report the outcomes of the multivariate regressions of private/institutional possession with earnings management, the ROA, ROE, ROS and EPS samples, respectively.

Overall, the proposed structural model showed a reasonably good fit with the collected data, with the squared multiple correlations indicating that the model explained (12.6%) as indicated in **(Table (10))** of the variance between family and institutional ownership for Egyptian sample after revolution. Furthermore, results indicated that the differences

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between the family and institutional are greater than the similarities. More specifically significant differences were detected in the means of CEO duality, firm size, financial leverage, and liquidity, earnings management and performance measures.

Table 10: Nested Model Comparisons, Assuming Model Unconstrained To Be Correct.

Model	DF	CMIN	P	NFI Delta-1	IFI Delta-2	RFI rho-1	TLI rho2
Structural weights	20	93.866	.000	.126	.136	.016	.019
Structural covariances	30	142.081	.000	.191	.206	.024	.028
Structural residuals	40	180.753	.000	.243	.262	.014	.017

The Relationship Between Explanatory Variables, And Family/Institutional Ownership

With regard to the hypotheses that test relationship between explanatory variables and family and institutional ownership structure separately (**H1** and **H2**). On one hand, there is a non-significant relationship between firm size, financial leverage, CEO duality and liquidity with family shareholding. Similarly, there is a non-significant relationship between firm size, liquidity, and financial leverage and institutional shareholding but has a significant positive relationship with CEO duality.

The Relationship Between Explanatory Variables, Family Ownership and Institutional Ownership (H1 & H2)

The results show non-significant relationship of firm size, financial leverage, CEO duality, and liquidity with family ownership on the one side. In the case of institutional ownership, the relationship with firm size, liquidity, and financial leverage is not significant, whereas there is a significant positive relationship with CEO duality.

Model of Variables, Family/Institutional Ownership, and Discretionary Accruals:

In relation to Hypothesis H3, the effect on ownership structure and controlling variables on earnings, as shown in Table (11), the results show that the level of discretionary accruals in the post-revolution period in Egypt is significantly negatively related to family ownership concentration. This finding is consistent with evidence before the revolution and supports H3. It also compares well to existing studies, including Hello et al. (2012) and Karuntarat (2013) who posit that high levels of family ownership can be a deterrent to earnings management because it increases the incentives for monitoring.

For Hypotheses H4-H7, on the association between family ownership and firm performance (ROA, ROE, ROS, and EPS) the findings indicate that, after the Egyptian revolution, family ownership does not exert a statistically significant influence on ROA, ROE, or ROS at 5% or 10% significance level. Our results suggest that family ownership concentration has no empirical impact on accounting-based performance measures, such as profitability and operational efficiency. This is consistent with previous work, including what was observed in Arosa et al. (2003) and (2010) show that the effects of block-holder ownership on firm performance are either mixed or not significant in developed markets. Similarly, Omran et al. (2008) also showed that there is no association between family block-ownership and firm performance in Egypt in relation to ROA and ROE.

One exception could be noticed, among others, in the case of EPS, where family ownership has statistically significant and positive relationships with performance during the post-revolution period. In contrast to pre-Revolution outcomes, this may imply that governance or strategic principles or dynamics if family firms had changed post-political and economic crisis. The multigroup analysis (MGA) also shows that the impacts of family block ownership on discretionary accruals and firm performance are significantly different between the pre- and post-revolution periods.

Furthermore, H4-H7 also considers the effect of financial leverage on family and institutionally owned firms' performance. Results suggest that debt has a significant and negative impact on ROS suggesting that greater leverage may limit operational performance, especially in family found businesses. This finding highlights the role of capital structure decisions in determining firm performance in owner-dominated settings.

Table 11: Comparison Between Family / Institutional Ownership with Opportunistic Earnings Management and Financial Performance After Egyptian Revolution.

			Family firm		Institutional firm	
			estmate standarized	P	stand.estimate	P
ZEM_1	<---	ZFO_1	-.298	.001	-.322	.013
ZEM_1	<---	CEO	.153	.094	.205	.153
ZEM_1	<---	ZCR_1	.178	.051	.479	***
ZINS_1	<---	ZLOG_TA_1	.577	***	.067	.609
ZINS_1	<---	CEO	.034	.675	.599	***
ZEPS_1	<---	ZFO _1	.340	***	.654	***
ZROA_1	<---	ZINS_1	.136	.104	.379	.001
ZROA_1	<---	ZCR_1	.320	***	-.240	.064
ZROA_1	<---	ZEM_1	.202	***	.206	.009
ZROE_1	<---	ZINS_1	.586	***	.404	.002
ZROE_1	<---	ZCR_1	.133	.090	-.166	.242
ZROS_1	<---	ZINS_1	.528	***	.533	***
ZROS_1	<---	ZDER_1	-.145	.050	-.367	.001
ZROS_1	<---	ZFO_1	.106	.164	.231	.057
ZROS_1	<---	ZEM_1	.171	.030	-.089	.466
ZEPS_1	<---	ZINS_1	.480	***	.099	.421
ZEPS_1	<---	ZCR_1	.245	.001	-.205	.121
ZEPS_1	<---	ZEM_1	.222	.005	.301	.029
ZROA_1	<---	ZLOG_TA_1	.435	***	.581	***
ZROE_1	<---	ZLOG_TA_1	-.072	.449	.416	.003

Overall, according to the comparative analyse of both institutional ownership and family shareholding versus accounting discretionary accruals and financial performance as followed:

1) The family corporation is negative and significantly- related to discretionary accounting accruals based on modified Jones model at 5% and 10% significance levels respectively for periods pre- and post-the Egyptian revolution.

2) At 5% and 10% level of significance, none of institutional concentrated own quantities are meaningfully associated with unsigned discretionary accruals, as computed via modified Jones model. Whether you do so before or after the Egyptian revolution, you get the same result

3) The outcome shows that family Company is sign positively and non-significant association with ROA, ROS, and EPS accounting performance measures at the 5% and 10% significance level respectively for the period (2014-2018). Our findings conclude that, after Egyptian revolution, the pooling of family ownership is non-significant with accounting performance measure based on ROA, at the 5% level, and ROE and ROS at the 10% level. The group make up proves that the effect of family block possession on the fairness performance is a very totally different pre-revolution and post-revolution durations.

4) The relationship between the coefficient of institutions and ROA and ROS appears to be positive and significant (at the 10% level of significance) only before the Egyptian revolution

(2006-2010). Like commercial banks, the institutions shareholding is positively and significantly associated only with ROA, ROE and ROS at the 5% and10% significance level after Egyptian revolution (2011-2013). Finally, it is noted that both types of ownership (institutional and family) are statistically significant in regard to performance, but it is found that family ownership had a negative impact while institutional performance was positive so, thus we can say that institutional ownership is performed better than family ownership, meaning institutional ownership exert powerful influence on various measures of organizational performance (ROA, ROE and ROS) more than family shareholding before and after Egyptian revolution period.

5) Earnings management has significant negative and declining effect on family firm financial performance before the period of Egyptian revolution. This means that the target of earning management is to minimize the performance of corporation to minimize the profit of company to decrease the income tax application. On the other hand, the earnings management have a significant and positive effect on the financial performance after the Egyptian revolution period. Hence, corporate governance must be used well and cost-effectively by the government to use the country resources adequately to create good value for them. It can also improve stability, social security, and safety, which can later help in repeating the process for improvement of economy, and political system (Halim 2021; Ismail 2021, Rawashdeh 2021).

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6) There is no effect of earnings management manipulation on performance measures of institutional ownership pre and post Egyptian revolution.

Table (12) provides a summary of the relationship among ownership structure, EM and financial performance measure, which can contribute towards the development of the amended Egyptian corporate governance guidelines and thus hopefully further enhancing the performance of the Egyptian listed companies through the implementation of such amendments. Accordingly, **Table (12)** is based on the comparative analysis between the family and institutional ownership structure mechanisms developed. One might consider expanding to a more complex topic, such as the impact of COVID-19 on traditional company operations (Teamah 2020; Ahmadini 2121; Maroufy 2011; El-Saka 2013; Yousef 2019; Abd-Elhafiez 2021; Noha, et al 2022).

Table 12: Summary of Comparative Analysis Between Two Types of Ownership Structure, Regarding the Earnings Management, And Financial Performance.

	Earnings management	ROA	ROE	ROS	EPS
Family structure	Negative	Non-sig	Non-sig	Non-sig	Non-sig
Institutional ownership	Non-sign	Sig. and Positive	Sig. and Positive	Sig. and Positive	Non sig.
Earnings management (Family own)		Positive	Positive	Positive	Non-sig
Earnings management (Inst. Own)		Non-sig	Non-sig	Non-sig	Non-sig

6. CONCLUSIONS

The theoretical study and analysis resulted in the following conclusions: first, corporate governance has no universally accepted definition because it varies from country to country in terms of cultural, political, economic, and social contexts. Second, the existing literature does not provide definitive categorization for family versus institutional ownership; third, Upon reviewing prior literature, it appears that research targeting the determinants of earnings management that focus on the Middle East region is rather scarce; fourth, studies on how institutional ownership affects choices in earnings management have yielded contradictory results, which is mainly due to the fact that researchers treat institutional ownership as a homogenous group. Newer research has drawn a distinction between types of institutional ownership based on different characteristics and behaviours, including Passive vs. active ownership; Pressure-sensitive investors and pressure-insensitive investors; Investors with long-term vs. short-term horizons

Empirical analysis was therefore done using various statistical techniques, including descriptive and univariate analysis, correlation matrix analysis, path analysis, multi-group analysis, and panel threshold analysis, to assess the effect of family and institutional ownerships on discretionary accruals and financial performance.

The key findings are:

We carried out path analysis to validate the structural model and evaluate its appropriateness for analysis. Should the example covariance/variance matrix not be able to reproduce the sample matrix well enough, and goodness-of-fit statistics not return the desired results, then the structural model will need to be refined and perfected in order to attain the best model. To assess the cross-group differences as well as the ownership group-specific characteristics, we devised a unified empirical multi-group analysis paradigm. This approach was used to investigate the effect of family ownership and institutional ownership in relation to profitability and earnings management over two different time intervals.

Future research should include more governance as a variable, such as: Meaning of families in supervisory of advisory boards; Family structure, such as the number of family managers and founders. The jobs and education of family members; A larger sample and a broader geographic scope will help in better identifying the conditions under which family ownership and founder management affect the performance of firms.; Additional research on family management's lasting impact on future generations' financial outcomes is necessary to discover insights that the present research could not achieve.

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