The relationship between forward-looking disclosure and market-related variables in the annual reports of Egyptian firms listed

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Abstract

*Purpose: This research aims to investigate the relationship between the number of market-related variables, which indicate business characteristics, and the level of voluntary disclosure, specifically forward-looking disclosure, in the annual reports of Egyptian companies listed on the Egyptian Stock Exchange. This study utilizes empirical methodologies to investigate the hypothesized impact of market-related factors on the extent of forward-looking information.

***Design/methodology/approach:** This research employs a compilation of prospective-looking keywords to ascertain variations in the extent of forward-looking disclosure among companies operating in distinct industries. The study sample comprised fifty-nine non-financial companies that were publicly traded on the Egyptian Stock Exchange during the years 2017, 2018, and 2019. In order to conduct statistical analysis, multiple linear regression analysis is utilized.

*Results: Significantly positive correlations were found (in all three years) among the magnitude of the audit firm and the degree of forward-looking disclosure. However, for all three years, there was no significant relationship between the industry type variable (which was subdivided into cement, construction, petrochemicals, and services) and the amount of forward-looking information disclosed in the annual reports.

*Research limitations/implications: Among the potential consumers of the findings presented in this article are investors, lenders, and auditors. Users may find these findings useful when conducting business with organizations characterized by low profitability and high financial risk.

Several limitations apply to this investigation. Initially, the research employed the identical inventory of prospective elements utilized in prior investigations. Furthermore, the selected items fail to reflect the degree of

significance that users of financial information attribute to them. Furthermore, the research utilized an unweighted approach in order to assess the extent of forward-looking disclosure. In conclusion, the research focused exclusively on non-financial companies that are publicly traded on the Egyptian Stock Exchange, while excluding those that are involved in finance or insurance.

*Originality/value:** The findings of this research hold greater significance for the investment community as it assesses the degree to which Egyptian firms, being a developing nation, disclose information regarding future valuation of firm characteristics (specifically, market-related variables). The examination of forward-looking information disclosure in developing countries, with a specific focus on the Middle East, has been the subject of a limited number of studies. Furthermore, while all prior research investigated forward-looking disclosure in annual reports for a duration of one year, the present study spanned a significantly longer time frame of three years.

*key words:** market-related variables, forward-looking disclosure, Egyptian Stock Exchange , annual reports.

1. Introduction

The degree to which financial reporting discloses non-financial information is growing in significance. Since more than four decades ago, The major objective has been to examine the association between the extent of non-financial disclosure and business qualities.

In order to establish their legitimacy, businesses prefer to reveal non-financial information despite the lack of regulatory or mandatory obligations to do so (Parsa, 2001).

Scholars have conducted research on the relationship between business qualities and the level of voluntary disclosures in both developed and developing nations. Several research studies have been conducted in developed countries, such as Canada (Belkaoui and Kahl, 1978), the United Kingdom (Firth, 1979), the United States of America (Lang and Lundholm, 1993), Japan (Cooke, 1992), Mexico (Chow and Wong-Boren, 1987), and New Zeal(McNally et al., 1982).

Conversely, only a limited number of research have been implemented in developing nations; these include the following: Egypt (Hassan et al., 2006); Jordan

(Naser et al., 2002); Saudi Arabia (Alsaeed, 2006); Bangladesh (Ahmed and Nicholls, 1994); Malaysia (Hossain et al., 1994); Zimbabwe (Owusu-Ansah, 1998); and Barako et al., 2006).

Commonly, firm characteristics are categorized into three categories (Alsaeed, 2006):

a) Variables associated with structure, including firm age, profitability (profit margin), leverage, and ownership dispersion; and b) Variables associated with performance, including profitability (profit margin), return on equity, and liquidity.

b) Market-related variables, including the scale of audit firms, cross-listing, and industry classification.

Following this, the paper is organized as follows: Section 2 highlights the importance of annual reports as a means of providing information; Section 3 provides a precise definition of forward-looking information. Section 4 contains a comprehensive assessment of previous studies that are pertinent to disclosure. Section 5 examines the variables and formulates hypotheses. Section 6 outlines the research methodology, including details on the sample and the building of the model. Section 7 offers the findings of the study. Finally, Section 8 closes the study.

2. The significance of annual reports as a means of providing information

There are multiple sources available that can give investors and other users with relevant information to help them predict the company's future success. These sources encompass interim reports, news releases, conference calls, and direct communications with analysts. There are several reasons for using annual reports as the main source of disclosure (Hussainey, 2004):

a) The annual report is a legally binding document that must be generated annually;

b) The prep time for the annual report is kept to a minimum;

c) The process of creating yearly reports has been institutionalized, allowing for comparisons with annual reports of other companies;

d) Stakeholders have a preference for using the annual report as a primary source of information for communicationand

e) A positive correlation exists among the annual report and stakeholder groups.

This study made use of the annual reports of a considerable number of Egyptian firms on the technical grounds that they are available in electronic format. The primary purpose of the annual report is to furnish pertinent information to various stakeholders, including creditors, employees, investors, managers, consumers, and unions. Based on the majority of previous studies, the yearly report is considered to be the most crucial source of information, while the statement of earnings and direct communication with management are regarded as more helpful.

3. Forward-looking information, as defined

The information contained in the annual report can be categorized into two distinct types: retrospective information and prospective information. Backward-looking information pertains to financial operations and disclosures from the past. Forward-looking information pertains to operational projections for the present and future, which assist information consumers (specifically, investors) in assessing the future performance of a company (Hussainey, 2004).

Forward-looking information comprises various categories of data, including financial data (e.g., cash flow, profitability, revenue fluctuations), anticipated operating results, and anticipated financial resources. Additionally, it encompasses non-financial data, such as substantial risks and uncertainties, which may have an impact on real-world outcomes and differentiate actual results from those anticipated (Khaled Aljifri and Hussainey, 2007).

corresponding to the **CICA (Canadian Institute of Chartered Accountants) framework (2001)**, defined forward-looking information comprises both financial and non-financial data in order to estimate more precisely the value creation impact of operation, transactions, and decisions.

quantity (QNT), Intellectual capital (INT), information about activity (ACT), environment (ENV), financial (FIN), coverage (COV), and organization and corporate governance (ORG) are all methods utilized to assess forward-looking information. Prior research has established a noteworthy correlation between the extent to which financial forward-looking information is disseminated and the quality of such information (Abad and Bravo, 2010).

4. Literature review

Accounting disclosure research have gained increasing attention since the 1960s. The approaches that were structured for investigating accounting disclosure comprised two distinct categories of methods. The initial approach involved the distribution of questionnaire forms to users, inquiring whether they would prioritize accounting disclosure items in the decision-making process when annual reports were requested. The second method examined the relationship between the level of disclosure (mandatory or voluntary) and firm characteristics (Alsaeed, 2006).

Consequently, a greater number of substantial international studies have been conducted to elucidate the correlation between the attributes of a company and the extent of information disclosed in its annual reports. Many prior studies have employed weight and unweight index scores to assess voluntary disclosure. The weight index score, in particular, was determined by the significance that consumers of annual reports attributed to particular items. On the contrary, unweighted indices assign equal weight to all elements; their purpose is to reduce the subjective aspect of weight determination (Ahmed and Courtis, 1999).

This study focuses on examining the correlation between the extent of voluntary disclosure, specifically forward-looking information, and market-related factors such as industry classification and the size of the audit company. Prior study commonly analyzed characteristics such as corporate size, listing status, capital structure (leverage), profitability, audit firm size, and corporate listing status to investigate the correlation between these variables and the extent of disclosure in annual reports. The research conducted by Ahmed and Courtis (1999) utilized many factors such as agency costs, political costs, corporate governance and monitoring, proprietary costs, signaling and information asymmetry, litigation costs, capital requirements, and audit firm reputation to explain this association.

Alsaeed (2006) conducted a study to examine the relationship among corporate characteristics and the level of disclosure in Saudi Arabia. The study assessed twenty items voluntarily to evaluate the level of disclosure seen in the annual reports of forty companies. An affirmative link was discovered among the magnitude of the company and the level of disclosure. Nevertheless, there were no noteworthy correlations found between the level of disclosure and the debt-equity ratio, ownership dispersion, which age of the auditing firm, margin of profit, industry type, audit firm size, or industry type. Wang and Claiborne (2008) examined the degree to which Chinese listed companies choose to provide

information on their own accord in their annual reports. The study's findings indicate a favorable association between the level of disclosure and several parameters, such as the percentage of foreign ownership, the success of the company, and the reputation of the auditor involved. Furthermore, the study discovered no indication that a company's cost of debt financing diminishes in correlation with the extent of voluntary disclosure it engages in.

Aljifri (2008) did additional research on the level of disclosure demonstrated by 31 publicly traded companies in the UAE. The research establishes that the level of disclosure in the UAE is influenced by five specific variables: size (assets), debt-equity ratio, profitability, sector type, and audit firm size. The study found a strong association between the levels of debt-equity, profitability, and the extent of disclosure. However, there is no relationship between the extent of information disclosure and the type of industry, the size of the company, or the size of the auditing firm. Moreover, the examination of industry type has been recorded in various previous investigations. A group of researchers found a positive relationship between the extent of information revealed and the amount of disclosure (Belkaoui and Kahl, 1978; Cooke, 1989), whilst another group of researchers did not see any such relationship (Wallace et al., 1994; McNally et al., 1982). Extensive research has examined the relationship between the size of audit firms and the level of disclosure. Previous studies have found a significant correlation between the two variables being examined and the level of disclosure demonstrated by major audit firms (Inchausti, 1997; Singhvi and Desai, 1971; Malone et al., 1993; Ahmed and Nicholls, 1994; Hossain et al., 1994; Raffoutnier, 1995; Ahmed, 1996; Patton and Zelenka, 1997). In contrast, previous studies have been unable to find a connection between the size of an audit firm and the level of information it discloses. These studies include Firth (1979), Wallace et al. (1994), Haniffa and Cooke (2002), and Raffournier (1995). A study revealed a negative association between the two factors in companies listed in Hong Kong.

5. Variables discussion and hypotheses development

5.1 Firm characteristics (independent variables)

The firm characteristics that are regarded as predictors of comprehensive disclosure indexes fall into three categories: those associated with the firm's structure, those that are related to performance, and those that are associated with the market (Wallace, Naser, and Mora, 1994). The relationship between firm characteristics and the degree of disclosure in annual reports has been the subject of

numerous significant prior studies. These include the works of Singhvi and Desai (1971), McNally et al. (1982), Belkaoui and Kahl (1978), Firth (1979), Chow and Wong-Boren (1987), Cooke (1989, 1991, and 1992), Lang and Lundholm (1993), Malone et al. (1993), Ahmed and Nicholls (1994), Hossain et al. (1995), Beattie et al. (2005), and Hassan et al. (2006).

The majority of prior research has established a significant correlation among level of disclosure and firm size and listing status. However, divergent findings have been reported regarding the influence of audit firm size, profitability, leverage, and profitability on level of disclosure (Ahmed and Courtis, 1999).

Similarly, Alsaeed (2006) established a correlation between the degree of disclosure and firm attributes, which were categorized as variables pertaining to the organization's structure, performance, and market.

5.2 Market-related variables

Market-related variables refer to aspects of an organization's behavior that are influenced by its contacts with other firms in its operational environment. These variables are qualitative and categorical, and they are specific to a given historical period. Market-related elements, such as the corporate reporting cultures of the industry, the stock exchange, and the type of auditor, might potentially influence corporate reporting. A supplementary inquiry carried out by (R. S. O. Wallace et al., 1994) classified market-related characteristics into three distinct categories:

a) Companies within a certain industry may choose to implement disclosure practices that exceed the requirements imposed on firms across all industries.

b) Listing estatus: upon registering on the stock market, companies are required to comply with the listing rules and disclose pertinent information in their annual reports and financial statements. There may be variations in the level of detail present in the annual reports of listed and unlisted firms.

c) Auditor type: In comparison to firms that have not been audited by one of the "big four" international audit firms, the former are anticipated to provide a greater amount of information and specifics regarding their operations.

The firm may have control over or lack control over these variables, which may exhibit temporal stability or temporal variation.

5.2.1 Industry type

The industry of a corporation is the main economic activity that generates its income (Stephen, 1998). Different economic sectors exhibit varying levels of transparency in their yearly reports. As stated by Jennifer Ho and Taylor (2007), companies in the same industry aim to use the same disclosure procedures in order to accurately represent the unique features of the industry, such as the extent of diversification.

The type of industry is a significant determinant of a business's risk. Certain industry sectors entail greater risk compared to others. For instance, high technology firms are considered more precarious due to the comparatively shorter product life cycle and the frequent technological advancements that render technologies more obsolete (Beretta and Bozzolan, 2004). Additionally, sector classification is a significant determinant in elucidating the extent of information divulged (Beretta and Bozzolan, 2004). Moreover, signaling theory suggests that industry influence can be impacted when a company falls behind its competitors and neglects to adhere to comparable disclosure practices; this can be interpreted as an unfavorable market signal (Aly et al., 2010).

The legitimacy theory and proprietary expenses (competitive disadvantage and political) are additional frameworks that are employed to analyze the correlation between the two variables (Deegan and Gordon, 1996). As a result of political and competitive pressure, certain industries (such as finance) may be more obligated than others to disclose particular types of information.

Moreover, four factors contribute to the variation in disclosure practices among distinct categories of businesses (Suwaidan, 1997):

a) The social differentiation of responsibility effect: certain companies whose operations entail greater risk have a greater sense of social responsibility; for instance, the pollution industry receives more attention than the manufacturing sector.

b) The dominance effect: certain firms control a significant portion of the market, and their influence may impact the disclosure practices of other firms.

c) Variations in accounting practices among firms within the same industry may be attributable to the manipulation of distinct accounting systems, which results in varying levels of disclosure.

d) The competitive effect: Due to the increased cost and the presence of rival firms, businesses might be reluctant to disclose more information.

Many previous studies looked at the relationship between both factors. T. E. Cooke (1992) conducted a study that compared Japanese manufacturing and non-manufacturing firms. The study aimed to investigate the relationship between the two variables and found that Japanese manufacturing firms are more inclined to share information compared to their non-manufacturing counterparts. According to T. E. Cooke (1989), trading companies provide less information compared to other types of firms.

Furthermore, Camfferman and Cooke (2002) made the observation that the level of disclosure in manufacturing firms in the United Kingdom and the Netherlands is influenced by the industry type. Additionally, several other studies (Kamran Ahmed and Courtis, 1999; Archambault and Archambault, 2003; T.E. Cooke, 1991; Deegan and Gordon, 1996; Haniffa and Cooke, 2002; Naser, 1998; Roberts, 1992; R. S. O. Wallace and Naser, 1995; WARD, 1998; Williams, 1999) have identified a significant correlation between the two variables.

In contrast to the aforementioned studies (Akhtaruddin, 2005; Khaled Aljifri and Hussainey, 2007; Inchausti, 1997; Naser et al., 2002; R. S. O. Wallace et al., 1994), the current research demonstrates that the two variables are not correlated. Alsaeed (2006), on the other hand, discovered no significant correlation between voluntary disclosure extent and industry classification in Saudi Arabia.An identical outcome was discovered by Brown, Tower, and Taplin (2005) and Raffournier (1995).

Limited prior research has examined the correlation among the degree of forward-looking disclosure and the type of industry (Khaled Aljifri and Hussainey, 2007). Their findings indicated that there was no significant association between the type of industry and the amount of forward-looking information included in the annual report of the United Arab Emirates.

The present study aims to examine the correlation between the category of industry and the inclusion of forward-looking information in annual reports from Egypt.

Therefore, it appears contingent to postulate that:

H1: there is a significant association between industry type and the level of forward-looking disclosure in the annual reports of Egyptian companies.

Dummy variables are utilized to quantify industry type (manufacturing 1 and non-manufacturing 0).

The disclosure requirements apply uniformly to all Egyptian corporations. Therefore, the purpose of this study is to determine whether manufacturing companies include more forward-looking information in their annual reports than non-manufacturing companies. In order to examine the aforementioned hypothesis, this research will select five distinct industry categories: services, cement, construction, petrochemicals, and industries.

5.2.2 Audit firm size

Auditor responsibility, in their capacity as an impartial third party, is to ensure the accuracy and validity of financial statements. In addition to defining their clients' disclosure policies, auditors significantly contribute to the reduction of agency costs and information asymmetry between shareholders and managers. Affournier (1995) and Khaled Aljifri and Hussainey (2007) concur. According to Kamran Ahmed and Nicholls (1994), the scale of the audit firm can have a positive impact on the information that is disclosed in financial statements. Large clients therefore typically retain the services of large audit firms, which are characterized by their complexity and scale.

The comparative advantage of large audit firms over small audit firms can be attributed to two factors (Stephen, 1998).

a) Due to the fact that they have a greater number of clients and minimal economic reliance on a single client, large audit firms are more motivated to maintain their independence.

b) Large audit firms are anticipated to be more susceptible to legal liability. Due to the fact that auditors may cause deception in certified annual reports.

Additionally, a greater number of prior studies have examined the correlation between the scale of audit firms and the extent of disclosure. As illustrated by the works of Khaman Ahmed and Nicholls (1994), Naser et al. (2002), Patton and Zelenka (1998), and K. Ahmed (1996), Camfferman and Cooke (2002), Craswell and Taylor (1992), and Raffournier (1995), a significant positive correlation was

observed between the two variables. Although not insignificant, (Forker, 1992) and (R. S. O. Wallace et al., 1994) discovered a positive correlation.

Furthermore, Wallace and Naser (1995) identified a statistically significant inverse correlation between the aforementioned variables. Conversely, previous research has failed to identify any statistically significant correlation between the scale of audit firms and the extent of disclosure. As illustrated in the works of Kamran Ahmed and Courtis (1999), Alsaeed (2006), Firth (1979), M. Hossain et al. (1995), and Malone et al. (1993),

In Egypt, there are two main classifications of audit firms: those that have affiliations with international auditing firms, and those that do not. The first group is anticipated to offer a significant degree of transparency and deliver information of exceptional quality in their yearly reports.

In addition, international accounting firms are restricted to collaborating exclusively with Egyptian partners, and since the 1950s, the audit profession and auditor independence have been strictly regulated. Large audit firms exhibit a greater degree of independence and rigor in their interactions with clients compared to their smaller counterparts (Abd-Elsalam, 1999). However, due to the fact that the IASs were only lately required in Egypt, interest in them was low. Consequently, a high level of familiarity with the IASs is anticipated among sizable audit firms affiliated with international organizations (Abd-Elsalam, 1999).

There has been little previous research on the relationship between the extent of future-oriented information provided and the size of audit companies. Khaled Aljifri and Hussainey (2007) found that there is no substantial correlation between the size of audit companies and the quantity of future-oriented material present in the annual report of the United Arab Emirates.

In summary, the preceding arguments pertain to a reciprocal relationship between the two variables. This study aims to analyze the correlation between the size of audit firms and the disclosure of forward-looking information in yearly reports from Egypt.

Therefore, it appears contingent to postulate that:

H2: There is a strong correlation between the size of audit firms and the extent to which Egyptian corporations provide forward-looking information in their annual reports.

The size of an audit firm can be quantified using a binary variable: 1 if the company is audited by one of the four major audit firms, commonly known as the Big 4, and 0 if it is not.

6. Research Methodology

6.1 Data collection and variables definition

Although annual financial reports served as the primary sources and primary instruments for gathering information regarding the tested variables, supplementary sources such as television or newspapers may also contribute information.

The sample for this study consists of annual reports from 49 non-financial enterprises, including both listed and unlisted companies, that are not part of the Egyptian stock exchange. These companies represent a variety of sectors, including agriculture, petrochemicals, finance, real estate, and services. The data collection period spanned three years, from 2017 to 2019. The selection of companies was predicated on the accessibility of data. Data collection for the study was impeded in 2020 due to the Egyptian Stock Exchange experiencing setbacks and the COVID-19 pandemic issue, which were precipitated by the Egyptian revolution.

Due to the fact that financial and insurance companies are obligated to comply with particular disclosure regulations, their annual reports cannot be regarded as voluntarily determined in this study.

The research employed cross-sectional regression, specifically Ordinary Least Square (OLS) and multiple regressions, in conjunction with the Minitab software (which is an extension of SPSS), to examine and assess the hypotheses and regression variables gathered from the annual reports.

This study employs various proxies to assess market-related variables. Industry type and listing estatus are both represented by dummy variables (1, 0). Audit firm size is also measured by a dummy variable, which assigns a value of one if the audit firm is one of the "big four" and zero otherwise.

The present study employed the identical inventory of forward-looking terms utilized in (Hussainey, Schleicher, and Walker, 2003) in order to ascertain the variations in the extent of forward-looking disclosure among companies operating in distinct industries. (1) Forward-looking statements are defined by the study as any sentence that includes the following verbs: will, should, can, could, may, might,

expect, anticipate, believe, seek, project, forecast, objective, or aim. The word "shall" was omitted from the study due to its association with legal terminology and repetitive disclosure (Li, 2008).

Furthermore, this research investigated the narrative sections of each company's report (CEO report, director report, and chairman statement), awarding one point per pertinent sentence.

6.2 Model development

Numerous previous investigations employed matched-pair statistics to examine the disparity between the disclosure indices of multiple samples (Wallace, Naser, and Mora, 1994). When non-linearity directions and monotonic data were present, cross-sectional regression analysis was applied (Chow and Wong-Boren, 1987).

Lang and Lundholm (1993) implemented ranked Ordinary Least Square (OLS) regression. One notable advantage of OLS is that it can be readily implemented by converting continuous variables into ranked scores.

Conversely, Camfferman and Cooke (2002) provided the following justification for employing unranked (OLS) rather than ranked (OLS) OLS:

"The main advantage of replacing the ranks by normal scores is that the resulting tests have exact statistical properties because significant levels can be determined, the F and t- tested are meaningful, the power of the F- and t- tested may be used, and the regression coefficients derived using normal scores are meaningful. A further characteristic is that normal scores approach offers a means whereby a non-normal dependent variable may be transformed into normality and, as such, offers a further advantage over ranks."

The level of disclosure was evaluated by calculating the ratio of the value of forward-looking sentences revealed by the company to the total number of sentences in its narrative parts. The formula used in this experiment was the same as the one used by Aljifri and Hussainey in 2007.

TDS=FWD/TD   **(1)**

Where:

TDS= total disclosure score

FWD= total forward-looking sentences disclosed

TD= maximum sentences disclosed for each company

      For the purpose of examining the relationship between firm characteristics (market-related variables) and the level of voluntary disclosure (forward-looking disclosure), this study employs an unranked (OLS) regression analysis model as follows:

$Y = B_o + B_1X_1 + B_2X_2 + B_3X_3 + E$ (2)

Where:

Y= voluntary disclosure index level (forward-looking disclosure level)

B0= constant value or the value of Y when all X values are zero.

X1= industry type (measured as dummy variable: manufacturing= 1, and non-manufacturing=0)

X2= listing status (measured as dummy variable: listed company= 1, and non-listed company=0)

X3= audit firm size (measured as dummy variable: big 4 audit firm= 1, and non- big 4 audit firm =0)

E= the error term normally distributed about a mean of zero

7. Results

      This section demonstrates the pragmatic application of Minitab methodologies for testing the research hypotheses of the study and presenting the findings. It consists of two components: descriptive analysis and regression analysis.

7.1 Descriptive statistics

The findings that correspond to the descriptive analysis are presented in Table 1. These findings include the minimum, maximum, mean, and SD for continuous and categorical variables that are included in the sample dataset. Smaller SDindicate more exact future predictions due to lower variability. Moreover, the table provides information concerning disclosures that cover a period of three years, specifically 2017, 2018, & 2019. When it comes to specific variables, the sample demonstrates a significant amount of variability, as demonstrated by the minimum & maximum values. Take, for example, the dependent variable (DV) for the year 2017, which is a measure of the degree to which forward-looking disclosure is made, falls somewhere in the range of three to forty-nine. These findings are further supported by the fact that the mean value is 17.73 & the SD is 9.76. Five distinct categories are used to classify the independent variable that is the type of industry: With an average value of 0.312 & a SD of 0.468, the range of industries (IND) is between 0.00 & 1.00. The SD occurs at 0.468. A mean value of 0.083 & a SD of 0.279 are associated with cement (CEM), which has a range that extends from 0.00 to 1.00. There is a range of values for construction (CONS) that goes from 0 to 91.00, with an average value of 0.250 & a SD of 0.437. The range for petrochemicals (BETC) is from 0.00 to 1.00, with a SD of 0.279 & a mean of 0.083. The range is also an average. A mean of 0.0625 & a SD of 0.244 are associated with the range of values for services (SERV), which is from 0.00 to 1.00.

The size of the audit business, also known as AUDIT, is the second independent variable, & its value can range anywhere from 0.00 to 1.00. A mean value of 0.5208 & a SD of 0.5049 are both associated with it.

There is a range of values for the dependent variable (DV) that represents the level of forward-looking information in the year 2018, with a mean value of 13.71 & a SD of 9.26. The DV can be anywhere from 0.00 to 40. With regard to the independent variable, industry type, there are five separate types that are categorized. There is a range of values for these types that goes from 0.00 to 1.00, with an average value of 0.312 & a SD of 0.468. In terms of cement (CEM), the range of values is from 0.00 to 1.00, with a SD of 0.279 & a mean value of 0.083. The construction (CONS) range is from 0.00 to 91.00, with a mean of 0.250 & a SD of 0.437. The highest possible value is 91.00. The range for petrochemicals (BETC) is from 0.00 to 1.00, with a SD of 0.279 & a mean of 0.083. The range is also an

average. A mean of 0.0625 & a SD of 0.244 are associated with the range of values for services (SERV), which is from 0.00 to 1.00.

The size of the audit business, also known as AUDIT, is the second independent variable, & its value can range anywhere from 0.00 to 1.00. A mean value of 0.4167 & a SD of 0.4982 are both associated with it.

With an average value of 15.38 & a SD of 8.02, the range of forward-looking disclosure level (dependent variable (DV)) in 2019 is from 2.00 to 38. The average value is 15.38. An average value of 0.312 & a SD of 0.468 are associated with the independent variable industrial type (IND), which is comprised of five unique categories. The range of values for this variable is from 0.00 to 1.00, with the average value being 0.312. In terms of cement (CEM), the range of values is from 0.00 to 1.00, with a SD of 0.279 & a mean value of 0.083. The construction (CONS) range is from 0.00 to 91.00, with a mean of 0.250 & a SD of 0.437. The most common value is 0.250. Petrochemicals (BETC) have a range that goes from 0.00 to 1.00, with a mean of 0.083 & a SD of 0.279 (SD). A mean of 0.0625 & a SD of 0.244 are associated with the range of values for services (SERV), which is from 0.00 to 1.00.

The size of the audit business, also known as AUDIT, is the second independent variable, & its value can range anywhere from 0.00 to 1.00. A mean value of 0.4375 & a SD of 0.5013 are both associated with it. According to the data that came before, the industry type (independent variable) that was connected with the kind of services (SERV) displayed the smallest SD. This indicates that future forecasts may be considered more accurate due to the reduced variability.

Table (1) descriptive statistics

Descriptive Statistics: DV; AUDIT; ind; cem; cons andrs; BETC; FIN; SERV (2017)

Variable	N	N*	Mean	Median	TrMean	StDev
DV	40	8	17.73	15.00	17.06	9.76
AUDIT	48	0	0.5208	1.0000	0.5227	0.5049
ind	48	0	0.3125	0.0000	0.2955	0.4684

Variable	N	N*	Mean	Median	TrMean	StDev
cem	48	0	0.0833	0.0000	0.0455	0.2793
cons andrs	48	0	0.2500	0.0000	0.2273	0.4376
BETC	48	0	0.0833	0.0000	0.0455	0.2793
SERV	48	0	0.0625	0.0000	0.0227	0.2446

Variable	SE Mean	Minimum	Maximum	Q1	Q3
DV	1.54	3.00	49.00	11.00	23.75
AUDIT	0.0729	0.0000	1.0000	0.0000	1.0000
ind	0.0676	0.0000	1.0000	0.0000	1.0000
cem	0.0403	0.0000	1.0000	0.0000	0.0000
cons andrs	0.0632	0.0000	1.0000	0.0000	0.7500
BETC	0.0403	0.0000	1.0000	0.0000	0.0000
SERV	0.0353	0.0000	1.0000	0.0000	0.0000

Descriptive Statistics: DV; AUDIT; ind; cem; cons andrs; BETC; FIN; SERV (2018)

Variable	N	N*	Mean	Median	TrMean	StDev
DV	45	3	13.71	14.00	13.39	9.26
AUDIT	48	0	0.4167	0.0000	0.4091	0.4982
ind	48	0	0.3125	0.0000	0.2955	0.4684
cem	48	0	0.0833	0.0000	0.0455	0.2793
cons andrs	48	0	0.2500	0.0000	0.2273	0.4376
BETC	48	0	0.0833	0.0000	0.0455	0.2793

Variable					
SERV	48	0	0.0625	0.0000	0.0227	0.2446

Variable	SE Mean	Minimum	Maximum	Q1	Q3
DV	1.38	0.00	40.00	6.50	20.50
AUDIT	0.0719	0.0000	1.0000	0.0000	1.0000
ind	0.0676	0.0000	1.0000	0.0000	1.0000
cem	0.0403	0.0000	1.0000	0.0000	0.0000
cons andrs	0.0632	0.0000	1.0000	0.0000	0.7500
BETC	0.0403	0.0000	1.0000	0.0000	0.0000
SERV	0.0353	0.0000	1.0000	0.0000	0.0000

Descriptive Statistics: DV; AUDIT; ind; cem; cons andrs; BETC; FIN (2019)

Variable	N	N*	Mean	Median	TrMean	StDev
DV	42	6	15.38	14.50	15.11	8.02
AUDIT	48	0	0.4375	0.0000	0.4318	0.5013
ind	48	0	0.3125	0.0000	0.2955	0.4684
cem	48	0	0.0833	0.0000	0.0455	0.2793
cons andrs	48	0	0.2500	0.0000	0.2273	0.4376
BETC	48	0	0.0833	0.0000	0.0455	0.2793
SERV	48	0	0.0625	0.0000	0.0227	0.2446

Variable	SE Mean	Minimum	Maximum	Q1	Q3
DV	1.24	2.00	38.00	9.00	19.75

AUDIT	0.0724	0.0000	1.0000	0.0000	1.0000
ind	0.0676	0.0000	1.0000	0.0000	1.0000
cem	0.0403	0.0000	1.0000	0.0000	0.0000
cons andrs	0.0632	0.0000	1.0000	0.0000	0.7500
BETC	0.0403	0.0000	1.0000	0.0000	0.0000
SERV	0.0353	0.0000	1.0000	0.0000	0.0000

7.2 assessing the validity of the model or (OLS) regression analysis

Before explaining the results of multiple regression analysis, it is important to determine if the independent variables are affected by multicollinearity or collinearity. Multicollinearity or collinearity occurs when there is a strong correlation between two or more independent variables. This can have a detrimental effect on the outcomes of multiple regressions. The correlation matrix is a reliable tool for obtaining an estimation of the connection between predictors. Table 2 displays the correlations between the independent variables & the dependent variable, "level of forward-looking disclosure (DV)," for a period of three years. The independent variable representing industry type is separated into five categories: construction (CONS), petrochemicals (BETC), industries (IND), & services (SERV).

In 2017, there was no presence of multicollinearity among the independent variables. None of the correlations between continuous variables were abnormally strong. The correlation between audit firm size (AUDIT) & construction (CONS.) was deemed acceptable at a high level (0.169). However, all other correlations were found to be insignificant at the 0.05 level (two-tailed), except for the correlation between construction (CONS.) & industries (IND.), which was found to be significant (0.006<0.05). There was a statistically significant association (0.035<0.05) between the level of forward-looking disclosures (dependent variable:

DV) & audit firm size (AUDIT). Moreover, this connection had the highest strength compared to the previously indicated variables, with a value of 0.334.

In 2018, there was no presence of multicollinearity among the independent variables. None of the correlations between continuous variables were abnormally strong. In 2008, a study found that the correlation between the size of audit firms (AUDIT) & the construction industry (CONS.) was the highest at 0.195, which was considered acceptable. All other correlations, except for the correlation between industries (IND.) & construction (CONS.), were not significant at the 0.05 level (two-tailed). The correlation between industries (IND.) & construction (CONS.) was significant at 0.006, indicating a relationship between the two variables. There was a statistically significant association (0.031<0.05) between the level of forward-looking disclosures (dependent variable: DV) & audit firm size (AUDIT). Moreover, this association had the highest strength among the variables indicated earlier, with a value of 0.321.

In 2019, there was no presence of multicollinearity among the independent variables. None of the correlations between continuous variables were abnormally strong. The correlation coefficient of 0.170 between audit company size (AUDIT) & construction (CONS.) was the highest observed & was considered satisfactory for both 2008 & 2009. All correlations, except for the correlation between industries (IND.) & construction (CONS.), were found to be statistically insignificant at the 0.05 level (two-tailed) for both 2008 & 2009. The correlation between IND. & CONS. was statistically significant (0.006<0.05) for both years. There was a substantial association (0.010<0.05) between the level of forward-looking disclosures (dependent variable: DV) & audit firm size (AUDIT). Moreover, this link had the highest strength among the factors described earlier, with a coefficient of 0.391.

Overall, the results from the three years of data analysis demonstrate that there is no colinearity among the independent variables. There was a strong association (p-value<0.05) observed between the size of audit firms (AUDIT) & the construction industry (CONS.) as independent variables over the course of three years. Additionally, there was a strong & statistically significant association discovered between the degree of forward-looking disclosure (DV) & the size of the audit firm (AUDIT) for all three years. The forward-looking disclosure functioned as the dependent variable, while the audit firm size served as the independent variable.

Table (2) correlations

Correlations: DV; AUDIT; ind; cem; cons andrs; BETC; FIN; SERV (2017)

	DV	AUDIT	ind	cem	cons andrs	BETC	-
AUDIT	0.334**						
	0.035***						
ind	0.086	-0.163					
	0.597	0.268					
cem	-0.120	-0.013	-0.203				
	0.460	0.932	0.166				
cons andrs	0.073	0.169*	-0.389	0.000			
	0.656	0.252	0.006***	1.000			
BETC	0.044	-0.013	-0.203	-0.091	-0.174		
	0.787	0.932	0.166	0.539	0.237		
SERV	-0.172	-0.097	-0.174	-0.078	-0.149	-0.078	-
	0.289	0.512	0.237	0.599	0.312	0.599	-

Cell Contents: Pearson correlation

P-Value

Notes:

*the highest correlation between independent variables

**the highest correlation in the correlation matrix

***correlation is significant at the 0.05 level (two-tailed)

Correlations: DV; AUDIT; ind; cem; cons andrs; BETC; FIN; SERV (2018)

	DV	AUDIT	ind	cem	cons andrs	BETC	-
AUDIT	0.321**						
	0.031***						
ind	0.058	-0.114					
	0.704	0.441					
cem	0.044	0.051	-0.203				
	0.774	0.731	0.166				
cons andrs	-0.084	0.195*	-0.389	0.000			
	0.585	0.184	0.006***	1.000			
BETC	0.104	-0.102	-0.203	-0.091	-0.174		
	0.498	0.491	0.166	0.539	0.23		
SERV	-0.017	-0.044	-0.174	-0.078	-0.149	-0.078	-
	0.913	0.768	0.237	0.599	0.312	0.599	-

Cell Contents: Pearson correlation

P-Value

Notes:

*the highest correlation between independent variables

**the highest correlation in the correlation matrix

***correlation is significant at the 0.05 level (two-tailed)

Correlations: DV; AUDIT; ind; cem; cons andrs; BETC; FIN; SERV (2019)

	DV	AUDIT	ind	cem	cons andrs	BETC	-
AUDIT	0.391**						
	0.010***						
ind	0.030	-0.142					
	0.852	0.337					
cem	0.005	0.038	-0.203				
	0.976	0.798	0.166				
cons andrs	0.077	0.170*	-0.389	0.000			
	0.626	0.249	0.006***	1.000			

BETC   0.158 -0.114 -0.203 -0.091 -0.174

       0.316   0.441   0.166   0.539   0.237

SERV   -0.138 -0.054 -0.174 -0.078 -0.149 -0.078   -

       0.384   0.714   0.237   0.599   0.312   0.599   -

Cell Contents: Pearson correlation

        P-Value

Notes:

*the highest correlation between independent variables

**the highest correlation in the correlation matrix

***correlation is significant at the 0.05 level (two-tailed)

7-3 Multiple regression results

The results of all multiple regressions for the years 2017, 2018, and 2019 were presented in Appendix (A). The OLS regression results presented in Table 3 indicate that the SDof the error terms for the three years are 9.681, 9.143, & 7.588, respectively.

The statistical analysis (ANOVA tests) indicates that the model is not significant for any of the three years (2017), 2018-2019, as the F-ratios were 1.11 (P=0.377>0.05), 1.19 (P=0.331>0.05), & 1.8 (P=0.128>0.05), respectively. F is in fact equal to T-squared. A nominal P-value indicates that beta has a substantial impact on the model; this merely provides confirmation of the T-test.

R^2, denoting the proportion of independent variables accounting for the variability observed in the dependent variable (specifically, the level of looking-forward disclosure), was not a satisfactory result for the three years (16.8%, 15.9%, & 23.6%, respectively) due to its value falling short of the minimum threshold of 75% (which is the threshold at which an R^2 result is deemed acceptable for a model). The highest R^2 for the year 2019 was therefore 23.6 percent, which indicates that independent variables account for 23.6 percent of the variance in the level of forward disclosure. Alternatively stated, the value of Y (level of looking-forward

disclosure) fluctuated; of this variance, 76.4% can be attributed to error or an unexplained factor, while 23.6% can be attributed to the model or changes in X (independent variables).

Table (3) model summary

Year 2017

S = 9.681   R-Sq = 16.8%   R-Sq(adj) = 1.7%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	6	624.93	104.16	1.11	0.377
Residual Error	33	3093.04	93.73		
Total	39	3717.98			

Year 2018

S = 9.143   R-Sq = 15.9%   R-Sq(adj) = 2.6%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	6	598.71	99.78	1.19	0.331
Residual Error	38	3176.54	83.59		
Total	44	3775.24			

Year 2019

S = 7.588   R-Sq = 23.6%   R-Sq(adj) = 10.4%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	6	620.87	103.48	1.80	0.128
Residual Error	35	2015.04	57.57		
Total	41	2635.90			

Table (4) The findings of the regression analysis are presented in relation to the industry type & independent variables. The research was focused on the following five industry types: construction (CONS), petrochemicals (BETC), services (SERV), & industries (IND). For the three years, the second variable examined was audit firm size (AUDIT). These variables were utilized as auxiliary variables in the study.

The sample estimated alpha (constant) & beta (independent variables) are {12.94, 3.04, -2.40, 1.45, 2.70, -5.79 & 6.70} respectively for the year 2017, {9.32, 2.80, 2.58, -1.65, 5.67, .174 & 6.99} respectively for the year 2018, & {10.26, 2.98, 1.40, 1.54, 7.26, -3.12 & 6.89} for the last year 2019.

The comment on the results is the following:

*__industry type:__ The research conducted a categorization of this variable into five distinct categories: services (SERV), industries (IND), cement (CEM), construction (CONS), & petrochemicals (BETC). These types were then utilized as dummy variables, with each type receiving a value of 1 & the others receiving 0.

**__industries (IND.):__ The dummy variable, which assigned values of 1 to industries & 0 to other categories, exhibited an insignificant positive correlation ($P>0.05$) with the degree of forward-looking disclosure across all three years.

**cement (CEM.): The dummy variable, which assigned values of 1 to industries & 0 to other categories, exhibited no significant correlation with the degree of forward-looking disclosure across all three years ($P > 0.05$). Negatively, however, in 2017, & positively, in the following two years, 2018 & 2019.

**construction (CONS): (The dummy variable (with industries receiving a value of 1 & other categories receiving a 0) demonstrated no significant correlation with the degree of forward-looking disclosure across all three years ($P > 0.05$). Negatively, however, in 2018, & positively, in the following two years, 2017 & 2019.

** Petrochemicals (BETC.): The dummy variable, which assigned values of 1 to industries & 0 to other categories, exhibited an insignificant positive correlation ($P > 0.05$) with the degree of forward-looking disclosure across all three years.

** Services (SERV.): The dummy variable (with industries receiving a value of 1 & other categories receiving a 0) demonstrated no significant correlation with the degree of forward-looking disclosure across all three years ($P > 0.05$). However, there was a decline in 2017 & 2019, followed by an increase in 2018.

Numerous studies, including those by Brown, Tower, & Taplin (2005), Naser, Al-Khatib, & Karbhari (2002), Raffournier (1995), & Wallace & Naser (1995), corroborate the previous finding that there is no significant correlation between industry type & the degree of voluntary disclosure in Saudi Arabia. However, this result pertained to the correlation between industry type & voluntary disclosure level.

Limited prior research has examined the correlation between the degree of forward-looking disclosure & industry classification. For instance, Aljifri & Hussainey (2007) discovered that there is no significant association between industry classification & the amount of forward-looking information included in the annual report of the United Arab Emirates.

*audit firm size: As estimated by prior research, the audit firm size coefficient (represented as a dummy variable: one for the big four audit firms & zero for the rest) was significantly ($P 0.05$) positively correlated with the degree of forward-looking disclosure across all three years (big four audit firms = 1, non-big four audit firms = 0). The primary rationale for this outcome is that auditors' responsibilities are restricted to the domain of obligatory information. In essence, auditors do not

demand that their clients provide additional information beyond what is mandated by the accounting standards (Alsaeed, 2006).

Additional research has identified a similar correlation between the size of audit firms and the extent of voluntary disclosure. For instance, the following studies (K. Ahmed, 1996; Camfferman & Cooke, 2002; Craswell & Taylor, 1992; Raffournier, 1995) & (Kamran Ahmed & Nicholls, 1994; Naser et al., 2002; Patton & Zelenka, 1998) discovered a statistically significant positive relationship between the two variables.

Limited prior research has examined the correlation between the magnitude of forward-looking disclosure & the size of audit firms, with the exception of a few studies (Aljifri & Hussainey, 2007), which concluded that the two variables were not significantly associated with respect to the forward-looking information included in UAE annual reports.

Table (4) regression results of the effect of the market-related variables on the level of forward-looking disclosure

Year 2017

Predictor	Coef	SE Coef	T	P
Constant	12.941	3.690	3.51	0.001
AUDIT	6.704	3.181	2.11	0.043
ind	3.043	4.094	0.74	0.463
cem	-2.407	5.500	-0.44	0.664
cons andrs	1.457	4.496	0.32	0.748
BETC	2.707	5.768	0.47	0.642
SERV	-5.793	7.530	-0.77	0.447

Year 2018

Predictor	Coef	SE Coef	T	P

Constant	9.327	3.089	3.02	0.005
ind	2.807	3.677	0.76	0.450
cem	2.587	5.098	0.51	0.615
cons andrs	-1.652	3.845	-0.43	0.670
BETC	5.674	5.392	1.05	0.299
SERV	0.174	7.044	0.02	0.980
AUDIT	6.999	2.841	2.46	0.018

Year 2019

Predictor	Coef	SE Coef	T	P
Constant	10.265	2.583	3.97	0.000
AUDIT	6.890	2.437	2.83	0.008
ind	2.989	3.093	0.97	0.341
cem	1.405	4.244	0.33	0.743
cons andrs	1.541	3.366	0.46	0.650
BETC	7.262	4.478	1.62	0.114
SERV	-3.210	5.846	-0.55	0.586

8. Conclusions, limitations and further research

The primary objective of annual report preparation is to furnish consumers of financial reports with accurate & timely information; failure by management to deliver this information will result in a depreciation of the firm's value.

The aim of this study is to investigate the correlation between the degree of forward-looking disclosure & firm attributes (market-related variables). Additionally, it seeks to ascertain the impact of two primary market-related variables—industry type & audit firm size—on the degree of forward-looking information disclosure as documented in the annual reports of non-financial Egyptian companies.

Furthermore, this research paper contributes to the understanding of Egyptian firms' disclosure policies by establishing a correlation between annual reports and particular firm attributes, such as market-related variables.

The findings pertaining to the sample of 49 firms indicate that the audit firm size variable has a statistically significant positive impact on the level of forward-looking disclosure throughout all three years.

The relationship between the level of forward-looking disclosure & industry type (which is comprised of cement (CEM), construction (CONS), petrochemicals (BETC), & services (SERV)) is not statistically significant across all three years.

One limitation of this research is that it utilized the identical inventory of forward-looking items as a prior study conducted by Hussainey et al. (2003). Furthermore, the selected items fail to reflect the degree of significance that users of financial information attribute to them. Furthermore, the research utilized an unweighted approach in order to assess the extent of forward-looking disclosure. Fourth, in practice, certain information items hold greater significance for certain consumers of annual reports compared to others; therefore, the weighting of these items should correspond to their relative importance. Ultimately, this research focused on non-financial corporations that are publicly traded on the Egyptian Stock Exchange. Financial & insurance firms were omitted from the analysis due to the fact that they are obligated to adhere to particular disclosure standards, which precludes the voluntary nature of their annual reports.

Additional research might investigate the following recommendations:

*Include novel prospective elements that were not examined in the present investigation.

The order in which users rank the following forward-looking disclosure-related items is indicated on the list.

* Conducting a novel investigation to analyze the influence of firm attributes on forward-looking disclosure within the annual reports of publicly traded & unlisted financial & non-financial companies, respectively

* To strengthen the evidence presented in this study, additional research could be undertaken by extending the time period to over three years, augmenting the number of firms, or incorporating additional variables. *An investigation could be conducted into the impact of cost of equity (as an independent variable) on the extent of forward-looking disclosure.

*notes

(1) The following terms can be used to describe future financial years or months: accelerate, anticipate, await, convince, confidence, envision, estimate, eventual, expect, forecast, forthcoming, hope, intend (or intention), likely (or unlikely), look-forward (or look ahead), next, novel, optimistic, outlook, planned (or planning), predict, prospect, remain, renew, scope for (or scope to), shall, shortly, should, soon, well positioned, & years ahea.

Appendix A

Descriptive Statistics: DV; AUDIT; ind; cem; cons &rs; BETC; FIN; SERV (2017)

Variable	N	N*	Mean	Median	TrMean	StDev
DV	40	8	17.73	15.00	17.06	9.76
AUDIT	48	0	0.5208	1.0000	0.5227	0.5049
ind	48	0	0.3125	0.0000	0.2955	0.4684
cem	48	0	0.0833	0.0000	0.0455	0.2793
cons &rs	48	0	0.2500	0.0000	0.2273	0.4376
BETC	48	0	0.0833	0.0000	0.0455	0.2793
SERV	48	0	0.0625	0.0000	0.0227	0.2446

Variable	SE Mean	Minimum	Maximum	Q1	Q3
DV	1.54	3.00	49.00	11.00	23.75
AUDIT	0.0729	0.0000	1.0000	0.0000	1.0000
ind	0.0676	0.0000	1.0000	0.0000	1.0000
cem	0.0403	0.0000	1.0000	0.0000	0.0000
cons &rs	0.0632	0.0000	1.0000	0.0000	0.7500
BETC	0.0403	0.0000	1.0000	0.0000	0.0000
SERV	0.0353	0.0000	1.0000	0.0000	0.0000

Correlations: DV; AUDIT; ind; cem; cons &rs; BETC; FIN; SERV

	DV	AUDIT	ind	cem	cons &rs	BETC
AUDIT	0.334					
	0.035					
ind	0.086	-0.163				
	0.597	0.268				
cem	-0.120	-0.013	-0.203			
	0.460	0.932	0.166			
cons &rs	0.073	0.169	-0.389	0.000		
	0.656	0.252	0.006	1.000		
BETC	0.044	-0.013	-0.203	-0.091	-0.174	
	0.787	0.932	0.166	0.539	0.237	

```
SERV    -0.172  -0.097  -0.174  -0.078  -0.149  -0.078

         0.289   0.512   0.237   0.599   0.312   0.599



Cell Contents: Pearson correlation

            P-Value



* NOTE * All values in column are identical.
```

Descriptive Statistics: DV; AUDIT; ind; cem; cons &rs; BETC; FIN; SERV (2018)

Variable	N	N*	Mean	Median	TrMean	StDev
DV	45	3	13.71	14.00	13.39	9.26
AUDIT	48	0	0.4167	0.0000	0.4091	0.4982
ind	48	0	0.3125	0.0000	0.2955	0.4684
cem	48	0	0.0833	0.0000	0.0455	0.2793
cons &rs	48	0	0.2500	0.0000	0.2273	0.4376
BETC	48	0	0.0833	0.0000	0.0455	0.2793
SERV	48	0	0.0625	0.0000	0.0227	0.2446

Variable	SE Mean	Minimum	Maximum	Q1	Q3
DV	1.38	0.00	40.00	6.50	20.50
AUDIT	0.0719	0.0000	1.0000	0.0000	1.0000
ind	0.0676	0.0000	1.0000	0.0000	1.0000
cem	0.0403	0.0000	1.0000	0.0000	0.0000
cons &rs	0.0632	0.0000	1.0000	0.0000	0.7500
BETC	0.0403	0.0000	1.0000	0.0000	0.0000
SERV	0.0353	0.0000	1.0000	0.0000	0.0000

Correlations: DV; AUDIT; ind; cem; cons &rs; BETC; FIN; SERV

	DV	AUDIT	ind	cem	cons &rs	BETC
AUDIT	0.321					
	0.031					
ind	0.058	-0.114				
	0.704	0.441				
cem	0.044	0.051	-0.203			
	0.774	0.731	0.166			
cons &rs	-0.084	0.195	-0.389	0.000		
	0.585	0.184	0.006	1.000		
BETC	0.104	-0.102	-0.203	-0.091	-0.174	
	0.498	0.491	0.166	0.539	0.237	
SERV	-0.017	-0.044	-0.174	-0.078	-0.149	-0.078
	0.913	0.768	0.237	0.599	0.312	0.599

Cell Contents: Pearson correlation

          P-Value

* NOTE * All values in column are identical.

Descriptive Statistics: DV; AUDIT; ind; cem; cons &rs; BETC; FIN (2019)

Variable	N	N*	Mean	Median	TrMean	StDev
DV	42	6	15.38	14.50	15.11	8.02
AUDIT	48	0	0.4375	0.0000	0.4318	0.5013
ind	48	0	0.3125	0.0000	0.2955	0.4684
cem	48	0	0.0833	0.0000	0.0455	0.2793
cons &rs	48	0	0.2500	0.0000	0.2273	0.4376
BETC	48	0	0.0833	0.0000	0.0455	0.2793
FIN	48	0	0.00000	0.00000	0.00000	0.00000

Variable	SE Mean	Minimum	Maximum	Q1	Q3
DV	1.24	2.00	38.00	9.00	19.75
AUDIT	0.0724	0.0000	1.0000	0.0000	1.0000
ind	0.0676	0.0000	1.0000	0.0000	1.0000
cem	0.0403	0.0000	1.0000	0.0000	0.0000
cons &rs	0.0632	0.0000	1.0000	0.0000	0.7500
BETC	0.0403	0.0000	1.0000	0.0000	0.0000

Correlations: DV; AUDIT; ind; cem; cons &rs; BETC; FIN; SERV

	DV	AUDIT	ind	cem cons &rs	BETC
AUDIT	0.391				
	0.010				
ind	0.030	-0.142			

```
           0.852     0.337




cem        0.005     0.038    -0.203

           0.976     0.798     0.166




cons &rs   0.077     0.170    -0.389     0.000

           0.626     0.249     0.006     1.000




BETC       0.158    -0.114    -0.203    -0.091    -0.174

           0.316     0.441     0.166     0.539     0.237




SERV      -0.138    -0.054    -0.174    -0.078    -0.149    -0.078

           0.384     0.714     0.237     0.599     0.312     0.599




Cell Contents: Pearson correlation

                 P-Value




* NOTE * All values in column are identical.
```

Regression Analysis: DV versus AUDIT; ind; ... (2017)

```
The regression equation is

DV = 12.9 + 6.70 AUDIT + 3.04 ind - 2.41 cem + 1.46 cons &rs + 2.71 BETC

        - 5.79 SERV




40 cases used 8 cases contain missing values
```

```
Predictor         Coef      SE Coef          T          P

Constant        12.941        3.690       3.51      0.001

AUDIT            6.704        3.181       2.11      0.043

ind              3.043        4.094       0.74      0.463

cem             -2.407        5.500      -0.44      0.664

cons &rs         1.457        4.496       0.32      0.748

BETC             2.707        5.768       0.47      0.642

SERV            -5.793        7.530      -0.77      0.447


S = 9.681       R-Sq = 16.8%      R-Sq(adj) = 1.7%


Analysis of Variance


Source           DF          SS          MS          F          P

Regression        6      624.93      104.16       1.11      0.377

Residual Error   33     3093.04       93.73

Total            39     3717.98


Source        DF      Seq SS

AUDIT          1      414.38

ind            1       81.84

cem            1       20.16

cons &rs       1       12.16

BETC           1       40.92

SERV           1       55.47
```

Unusual Observations

Obs	AUDIT	DV	Fit	SE Fit	Residual	St Resid
24	0.00	6.00	7.15	7.03	-1.15	-0.17 X
39	1.00	49.00	19.65	3.33	29.35	3.23R
46	0.00	*	7.15	7.03	*	* X
47	1.00	15.00	13.85	7.03	1.15	0.17 X

R denotes an observation with a large standardized residual

X denotes an observation whose X value gives it large influence.

* NOTE * All values in column are identical.

Regression Analysis: DV versus ind; cem; ... (2018)

The regression equation is

DV = 9.33 + 2.81 ind + 2.59 cem - 1.65 cons &rs + 5.67 BETC + 0.17 SERV

+ 7.00 AUDIT

45 cases used 3 cases contain missing values

Predictor	Coef	SE Coef	T	P
Constant	9.327	3.089	3.02	0.005
ind	2.807	3.677	0.76	0.450
cem	2.587	5.098	0.51	0.615
cons &rs	-1.652	3.845	-0.43	0.670
BETC	5.674	5.392	1.05	0.299

```
SERV            0.174       7.044       0.02    0.980

AUDIT           6.999       2.841       2.46    0.018


S = 9.143      R-Sq = 15.9%      R-Sq(adj) = 2.6%


Analysis of Variance


Source          DF          SS          MS          F       P

Regression       6        598.71       99.78      1.19    0.331

Residual Error  38       3176.54       83.59

Total           44       3775.24


Source        DF      Seq SS

ind           1       12.84

cem           1       12.82

cons &rs      1       13.82

BETC          1       51.49

SERV          1        0.32

AUDIT         1      507.41


Unusual Observations
```

Obs	ind	DV	Fit	SE Fit	Residual	St Resid
24	0.00	8.00	9.50	6.62	-1.50	-0.24 X
39	0.00	40.00	16.33	3.18	23.67	2.76R
46	0.00	*	9.50	6.62	*	* X
47	0.00	18.00	16.50	6.62	1.50	0.24 X

R denotes an observation with a large standardized residual

X denotes an observation whose X value gives it large influence.

* NOTE * All values in column are identical.

Regression Analysis: DV versus AUDIT; ind; ... (2019)

The regression equation is

DV = 10.3 + 6.89 AUDIT + 2.99 ind + 1.40 cem + 1.54 cons &rs + 7.26 BETC

        - 3.21 SERV

42 cases used 6 cases contain missing values

Predictor	Coef	SE Coef	T	P
Constant	10.265	2.583	3.97	0.000
AUDIT	6.890	2.437	2.83	0.008
ind	2.989	3.093	0.97	0.341
cem	1.405	4.244	0.33	0.743
cons &rs	1.541	3.366	0.46	0.650
BETC	7.262	4.478	1.62	0.114
SERV	-3.210	5.846	-0.55	0.586

S = 7.588   R-Sq = 23.6%   R-Sq(adj) = 10.4%

Analysis of Variance

```
Source              DF          SS          MS          F          P

Regression           6       620.87      103.48       1.80      0.128

Residual Error      35      2015.04       57.57

Total               41      2635.90


Source          DF      Seq SS

AUDIT            1      403.09

ind             1       18.35

cem             1        0.38

cons &rs        1        1.12

BETC            1      180.57

SERV            1       17.36


Unusual Observations

Obs      AUDIT        DV        Fit      SE Fit     Residual     St Resid

 24       0.00      10.00       7.05       5.50         2.95        0.56 X

 39       1.00      38.00      17.16       2.66        20.84        2.93R

 46       0.00          *       7.05       5.50            *          * X

 47       1.00      11.00      13.95       5.50        -2.95       -0.56 X


R denotes an observation with a large standardized residual

X denotes an observation whose X value gives it large influence.



* NOTE * All values in column are identical.
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