Audit Data Analytics of Unregulated Voluntary Disclosures and Auditing Expectations Gap

Amir Michael[1] *& Rob Dixon*
Durham University Business School,
Durham University, UK

Abstract

The study is concerned with the usefulness of using audit data analytics of unregulated voluntary disclosures in reducing the auditing expectations gap. It argues that the lack of credibility and assurance of the unstructured voluntary disclosures and other big data, will impact the level of public users' expectations towards the quality of these unregulated voluntary disclosures. Therefore, we argue that non-financial, as well as financial; data require assurance by an independent auditor. Consequently, this would expand the auditors' role and responsibilities which will lead to raising the degree of stakeholders' satisfaction and approaching their expectations potentially reducing the auditing expectations gap.

Auditors will need to rely more heavily on big data analytics and technological techniques to perform this new role efficiently and effectively. Therefore, we provide empirical evidence that the perceptions of auditors, bankers, investors and academics, support the use of audit data analytics when providing assurance of unregulated voluntary disclosures in reducing auditing expectations gap. To do so, we categorized unregulated voluntary into 8 different categories that auditing data analytics is required to capture from various sources and analyze in an informative and useful fashion.

Keywords: Auditing Data Analytics (ADA), Unregulated Voluntary Disclosures (UVD), Auditing Expectations Gap (AEG), Unregulated Voluntary Disclosures Assurance (UVDA), Stakeholders-agency theory, Environmental disclosures, Corporate governance, Mann-Whitney-U non-parametric test, Risk management disclosures.

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1. Introduction

Big Data is characterized by large volume captured from different sources, variety of nature whether structured or unstructured, velocity in terms of data dynamic and change over time, veracity regarding the quality of data and usefulness for different purposes (Hashem et al, 2015). Given the massive corporate investment in big data of $34 billion in 2013 increasing to $232 billion in 2016, big 4 accounting firms recognize the importance of big data to improving quality of assurance services they provide to their clients (Alles and Gray, 2016). In the audit context, incorporating big data in assurance services means moving beyond traditional financial accounting information, represented by the traditional structured financial statements regulated by the accounting standards and audited in compliance with the statuary audit standards and regulations, towards unstructured non-financial data. Consequently, traditional data analytics techniques need to be upgraded from using simple Excel spreadsheets to analyze samples of accounting data to more advanced analytical tools to visualize big unstructured data and analyze predictions built on them (Alles and Gray, 2016). In our study, we believe that voluntary disclosures will be a fair representation of unstructured non-financial big data available in the annual reports to stakeholders.

This study contributes to existing knowledge by providing evidence that providing an ‘’absolute’’ rather than ‘’reasonable’’ degree of assurance and credibility of voluntary disclosures and unstructured data, given the complexities of this type of data and the advanced analytical techniques they require, is highly appreciated by different stakeholders and users of this type of information. The usefulness of data and disclosures, regardless their standards and structures, depends on the level of their credibility and assurance and not just their completeness.

2. Auditing Expectations Gap Defined

Liggio (1974) defines the Auditing Expectations Gap (thereafter AEG) as ‘the difference between the levels of expected performance as envisioned by both the independent accountant and by the user of financial statements’ (p.27). The expectations that assurance affect investors’ judgment stems from the argument that independently audited information reduces information asymmetry and decreases uncertainty (Wallace, 1987).

3. Unregulated Voluntary Disclosures Assurance (UVDA)

Investors increase reliance on voluntary disclosures when assurance is provided on this type of information (Coram, 2004). Furthermore, Abdel-khalik (1993), Chow (1982), and Watts and Zimmerman (1983) provide significant evidence that shows the increasing demand for auditing regulated and unregulated information to provide assurance to stakeholders. Unregulated information will go beyond traditional data available and will expand to big data originated from new sources such as images, videos, emails, phone calls, Internet activities, social media, news and public information (Zhang et al., 2011). With this sort of big data, different type of continuous audit, using big data analytics techniques, is required to deal with this massive volume of data and transactions. In this case, Auditing Data Analytics (thereafter ADA) will provide better understanding of this data, increase the scale of auditing making it more frequent to provide real time assurance and information credibility (Vasarhelyi et al, 2010). This will require updating the audit data provisioning, data filtering and the data

diagnostic layer to accommodate big data analytics (Vasarhelyi et al, 2004). This real time paperless audit will require massive technological investments as well as training and development to ensure auditors' competency in using ADA achieving a valuable balance between audit techniques and professional judgement.

In the absence of any mandatory non-financial disclosure requirements, and the caution concerning the bias towards disclosing only the good news (Deegan, 2000; Deegan, 2002; Guthrie and Parker, 1990; Neu et al, 1998). Hunton et al. (2000) find that auditor provided electronic commerce assurance has a positive impact on earnings forecasts and stock price estimates.

In the absence of credible information, we believe that big data, especially unstructured is a double edged sword, it might be a big opportunity, but at the same time a massive threat, as stakeholders tend to assume the worst. Consequently, stakeholders will discount the firm's stock prices, and would not react passively to the lack of information. However, they would choose to privately collect and analyze data. Due to the high cost of collecting and analyzing such data, only stakeholders with available resources would do so. Therefore, unsophisticated stakeholders are driven out of the market that becomes less efficient. The remaining stakeholders in the market would face high transaction cost, lower trading volume and illiquidity, therefore, they bid down a firm's stock price (Karpoff, 1986; Lev, 1988).

Investors find it difficult to evaluate the impact of the Unregulated Voluntary Disclosures (thereafter UVD) on future earnings (Rajgopal et al, 2003). Furthermore, the Elliott Committee (1997) suggests that there are new opportunities for assurance services to add value to the external audit because of the new types of information used by decision makers. It defines assurance services as 'independent professional services that improve the quality of information, or its context, for decision makers'.

The usefulness of UVD is a questionable issue as it does not impact in the informative power of the stock price (Gelb and Zarowin, 2000). Investors evaluate the audited financial reporting as more credible than the un-audited information and were more optimistic about firm's future earnings based on the audited financial reporting (Hodge, 2001). Therefore, information relevance includes the traits of timeliness and predictive value for decision making, while reliability contains the traits of representational faithfulness, verifiability, and neutrality which differ with respect to the nature of items. Such traits are easy to attain for financial information but not for intellectual capital and social costs which needs to be quantified (Joseph, 2007).

Auditing is a way to improve information reliability and credibility. Therefore, managers producing UVDs might also voluntarily hire an auditor. Having a voluntary audit makes managers' disclosures more credible to users than they would be without an audit. Society may require auditing voluntary disclosures than GAAP audit, which provides greater protection of users (Power, 1997, 1999; Jamal and Sunder, 2006). Auditors, as well as users, need to pay more attention to non-financial information.

Any organization incurs a disclosure cost in case of disclosing private information. The disclosure costs include the preparation costs in addition to the cost of contracting an auditor (Verrecchia, 1983). Incurring auditing costs improves the trustfulness of the private information, as it is the only way to make UVDs credible to the public. The importance of auditing these disclosures, is that bad information can be kept private, whilst good information is publicity disclosed. The managers' incentive for disclosing bad information is driven by firm's reputation and litigation threats besides the proprietary costs that face the firm (Skinner, 1994).

The market places a stock price premium on independently audited information (Dopuch et al, 1986; Willenborg, 1999). Therefore, the provision of information

assurance services is a natural extension of the traditional financial audit role (Elliott, 1998). Quality financial reporting is an important key to increase the auditors' ability to add value by reducing uncertainty about the quality of information included in management's reports rather than just ensuring management's compliance with technical GAAP (Miller and Bahnson, 2002). Under the disclosure principle, the released information must be credible. One way to secure the credibility is that the released information is attested by a third party such as an auditor (Scott, 2003). However, it is stated that 'more assurance will not necessarily mean more and better accountability, but merely more 'value added' for management as they manage key risks imposed by various stakeholder group who need to be controlled' (Power, 1997, p.127).

The Global Reporting Initiative's Sustainability Reporting Guidelines (GRI 2002) emphasize the need for independent assurance to add to the credibility of sustainability reports: 'A range of factors influences the perceptions and expectations of users about the credibility of an organization's sustainability report. Consultation with stakeholders is the best way to ascertain stakeholder perceptions and expectations about building credibility' (pp.17-18). One of the key criticisms of the voluntary social, ethical and sustainability reports is the existence of the huge AEG (Kamp-Roelands, 1999). Therefore, the assurance provision for social and environmental reporting, as one of the voluntary disclosure categories, is necessary to add credibility and reduce AEG (Gonella and Woo, 2000; Lewellyn, 2000).

Furthermore, the need for external verification and assurance is supported by several key assertions. First, external verification improves environmental reporting because of the scrutiny inherent in such an examination. Second, external verification of periodic environmental reports will provide additional credibility and assurance to the annual financial reports with environmental considerations. Third, the threat of litigation and other actions by shareholders or regulatory authorities for misrepresentations in the periodic environmental reports may be reduced by third party verification. Therefore, external verification may prevent corporations from disclosing inaccurate or misleading information and ensuring that the disclosure is reliable. Fourth, without credibility offered by the external verification, some investors may consider the environmental reporting is a sort of 'green wash' (Aeppel, 1993; Greer and Bruno, 1996). In addition, the corporations to secure their reputations against the risk of disclosing untruthful information, many of them now have their disclosure verified (audited) by independent experts in social, environmental, and ethical field (Lann, 2006).

The audit profession should widen its scope to encapsulate environmental issues as to keep its position as a source of credibility of information for the diversified stakeholders. Therefore, there is a crucial need to activate the role of audit profession regarding the environmental issues remain to maintain the auditor report of being reliable by the diverse users (Dixon et al, 2004). The auditor's role in reducing the uncertainty about the low-quality information in GAAP financial statements would not be useful as providing more comfort in consuming and relying on the unregulated reporting. It is believed that the new supplemental unregulated reporting offers a special opportunity to auditors to add much more value to their clients (users) by quality financial reporting consultation services (Miller and Bahnson, 2002).

In addition, Karapetrovic (2002) defines a universal audit as 'an independent and documented system for obtaining and verifying material audit evidence, objectively examining the evidence against the stated audit criteria based on audit risk and reporting the audit findings to the client' (pp.150-151). Such audit definition includes

not only financial audit, but includes other diversified types of audits including UVDs. In this case, auditors are 'data scientists' who deal with big data providing 'appropriate' assurance and analytics. Therefore, available data, cloud or otherwise, need to be audited, to exercise professional principles, such as conservatism, reliability and timeliness of information and to resolve the conflict between old professional values and new technology developments (Al-Htaybat and Alberti-Alhtaybat, 2017).

4. Audit Data Analytics Regulations

The Financial Reporting Council (FRC) in 2017 and the International Auditing and Assurance Standards Board (IAASB) in 2016 called for a review to the use of ADA by auditors to share good practices and continuous improvement of audit quality. We are expecting that using ADA for UVDA, will not just improve audit quality, but will go further by expanding the scope of audit beyond statutory audit of financial statements to meet stakeholders' needs and expectations. IAASB (2016) recommended that auditors need to capture better evidences to acquire broader and deeper understanding of the entity's environment, risk and business operations. We believe that auditors need to get clear insights using unregulated disclosures to have better understanding of business sustainability and future.

Moreover, KPMG (2002) suggests that the verification arises from 'the demand for reliable and credible information from management, for managing the company's environmental and social risks, and from stakeholders who want assurance that the report truly represents the company's efforts and achievements' (p.18). The Association of Chartered Certified Accountants (ACCA) (2003) states that 'all organizations want to show themselves in the best possible light. ACCA believes that independent external assurance is a vital part of the credibility and trust building process. The role of independent assurance is to ensure that the reporter presents an account that is fair, complete, unbiased and relevant' (p.7).

The Federation des Experts Comptables Europeens (FEE), the body of accounting professions in Europe publishes its assurance on sustainability report and stated that 'the assurance provider issues a report that enables users to place more credibility on the information reported by the company. Each user of the report may benefit through being able to take decisions based on information in sustainability report with less uncertainty about the information'. Moreover, the FEE report desire is to avoid creating an expectation gap 'whereby a user mistakenly assumes that there is more assurance than is actually present' (FEE, 2002, p.17).

From a US perspectives, the Sarbanes-Oxley Act (SOX) of 2002, in section (201) regarding services outside the scope of practice of auditors, identifies that 'it shall be unlawful for a registered public accounting firm (and any associate person of that firm, to the extend determined appropriate by the commission) that performs for any issuer any audit…….to provide to that issuer, contemporaneously with the audit, any non-audit service'. This implies that clients will appoint different audit firm to the one they are dealing with to audit their financial statements to audit their voluntary disclosures, since it is classified as a non-audit service. This will expand the oversight provisions, which in turn will enhance the information credibility.

5. Unregulated Voluntary Disclosures and Information Asymmetry

Reporting growth is supporting the notion 'data is the new oil' (Al-Htaybat and Alberti-Alhtaybat, 2017) especially environmental, social, and sustainable reporting,

which is driven by a realization that growing levels of disclosure are being undetermined by a credibility gap arising from the lack of confidence in both data and the reporting organizations (Doane, 2000; Swift and Dando, 2002; Dando and Swift, 2003). Release of financial disclosures via social media applications, such as Twitter, can reduce information asymmetry (Al-Htaybat and Alberti-Alhtaybat, 2017).

Miller and Bahnson (2002) state that 'incomplete information can be caused by omissions, misrepresentations, or simply lack of trustworthiness. Even if the managers are telling the truth, no one will act on it if they don't trust the reports' (p.23). Moreover, the uncertainty about the past and present leads to uncertainty and lack of confidence about the future predictions. Therefore, investors and creditors are demanding a higher rate of return to compensate for the uncertain outcome representing high cost of capital for the managers. Furthermore, to reduce the information asymmetry, investors and other outsiders are being provided relevant information that enables them to assess the firm's future. In addition, the provided information needs to be reliable and free from bias or other management manipulation (Scott, 2003).

Assurance would have a positive effect on users' stock price estimates and forecasts in case of the positive disclosures due to the reduction of uncertainty using information assurance. While in the case of negative disclosures assurance would not make any difference to users (Coram, 2004). Furthermore, audited information is more credible than un-audited information (Johnson et al, 1983; Libby, 1979; Pany and Smith; 1982). Provision of assurance increases user's perceptions of non-financial reliability as the independently audited information reduces information asymmetry and decreases uncertainty. Therefore, the value of assurance on disclosure is not independent of the signal provided by disclosure (Coram, 2004).

Audit effectiveness adds value for investors as research shows that capital providers require firms to hire an independent auditor as a condition of financing, even when it is not required by regulation (Healy and Palepu, 2001). Moreover, banks require firms to present audited financial information, even for private companies. This shows that capital providers regard auditors as enhancement to the credibility of the presented information (Leftwich, 1983).

UVDs reduce information asymmetry between the managers and outside investors. Reduction of information asymmetry reduces the cost of capital by reducing information risk, but this solution is restricted by the costs associated with the credibility of voluntary disclosures (Barry and Brown, 1985, 1986; Merton, 1987). The value of unregulated disclosures in capital markets, depends on the degree of credibility of the disclosed information. As UVD is self-serving, it is not clear whether these disclosures are credible (Healy and Palepu, 2001).

Studies such as Waymire (1984), Ajinkya and Gift (1984), and Pownall and Waymire (1989) find that stock prices react positively to the management forecasts of earnings increases, and vice versa. However, management forecasts accuracy can easily be verified by investors by actual earnings realization without need for the voluntary disclosures.

Dye (2001) states that 'the theory of voluntary disclosure is a special case of game theory with the following central premise: any entity contemplating making a disclosure will disclose information that is favorable to the entity, and will not disclose information unfavorable to the entity' (p.184). Managers may disclose information that reduces a firm's stock price and delay disclosing information that increases firm's stock price (Aboody and Kaznik, 1999). Furthermore, managers are disclosing bad news prior to management buyout, or prior to union negotiations. This shows that voluntary disclosures is used as stock prices' control instrument rather than reducing information

asymmetry (Liberty and Zimmerman, 1986). Moreover, the presence of multiple audience (stakeholders), besides the investors in the capital market, such as competitors in the product market, consumers, suppliers, employees, labor unions, creditors, and regulatory authorities, managers may disclose bad news to inflate the investor's expectations by deflating the expectations of the other audience (Darrough and Stoughton, 1990; Wagenhofer, 1990).

6. Theoretical Framework

6.1 Agency Theory

Live streaming data will require significant changes to the audit process (Al-Htaybat and Alberti-Alhtaybat, 2017). Accordingly, one monitoring device that shareholders can use to observe manager's behavior is appointing external auditors. An audit firm influences the amount of information disclosed in financial statements (Singhvi and Desai, 1971). Moreover, referred to the accountability paradigm, the agent or the management cannot be trusted to provide information that may serve stakeholders interests. Therefore, accountability is not essentially concerned with discretionary or voluntary disclosures (Swift, 2001). Furthermore, the use of reputable auditors reflects the associated agency costs with the disclosure decisions and a signal to the market that the information disclosures are of high quality (Craswell and Taylor, 1992).

Unregulated disclosures have low, and in some cases a negative, coefficient with future earnings which indicates that voluntary disclosures mislead analysts' perception regarding firms' future. These results raise a question about the value relevant information about the future earnings (Banghøj and Plenborg, 2006). In the sense of agency theory, managers who have better information than other outsiders, can make credible and reliable communication to the market to enhance the company's value. This enhancement of the company's value in the market, reduces monitoring costs and in turn reduces the agency costs. Therefore, the more accurate and reliable information companies disclose, the better companies' perception received by the public (Barako et al, 2006). Accounting reports can affect the real decisions made by managers and other users, rather than just reflecting the results of these decisions. This argument illustrates the importance of disclosure, in directing stakeholders to different decisions stimulating the relative importance of disclosure credibility (Zeff, 1978).

In contrast, Jensen and Meckling (1976) argue that agency theory explains why accounting reports are provided voluntarily to creditors and stockholders, and why independent auditors are engaged by management to testify and verify the correctness and accuracy of the provided reports. Managers are willing to incur costs to improve the credibility of accounting reports before doing so as a law requirement. Moreover, in the sense of agency theory, minimizing agency monitoring costs is economic incentive for managers to report reliable accounting reports to the ownership (Wolk and Tearney, 1997).

Watts and Zimmerman (1982) state that 'an audit will be successful in changing expectations and hence reducing the opportunistic behavior costs (agency costs) borne by the managers only if it is expected that the auditor will report some discovered breaches of contract. The probability that the auditors will report a discovered breach is effectively enhancing the auditing profession's definition of independence' (p.11). Moreover, Elliott (1998) states that 'audit provides assurance that an information set

presented to investors and creditors is reliable. But the market place need for high-quality information, is far greater than just the need for reliable historical cost-based financial statements' (p.2). Moreover, the Elliott Committee (1997) identifies the opportunity to provide assurance services, in relation to risk assessments, business performance measurements, and information system reliability. The heart of the minimum auditing, is to create value by reducing investors' uncertainty and to improve the overall financial reporting quality, rather than just attesting to management compliance with GAAP, leading to their clients' satisfaction (Miller and Bahnson, 2002).

Moreover, stakeholders are the main concern of the auditor, in performing his duties towards assuring the credibility of the voluntary disclosures. Therefore, it is stated that 'the assurance provider evaluates whether the reporting organization has responded to stakeholders' concerns, policies and relevant standards and adequately communicated these responses in its report' (AccountAbility, 2003, p.18). However, the agency problem of adverse selection or hidden information appears if the auditors do not discover this information. To overcome this problem, auditors seek to signal their quality by their actions in offering quality services (Bromwich, 1992).

Moreover, only the supply of financial information leads to unproductive behaviors and outcomes, while providing the information demanded by the capital markets produce changes in the roles played by managers, auditors, financial statement users, standards setters, and regulators (Miller and Bahnson, 2002). Adams and Evans (2004) provide some assurance guidelines as key principles for the assurance of ethical, social, and environmental reports. The aim of these guidelines is to reduce AEG.

6.2 Stakeholders' Theory

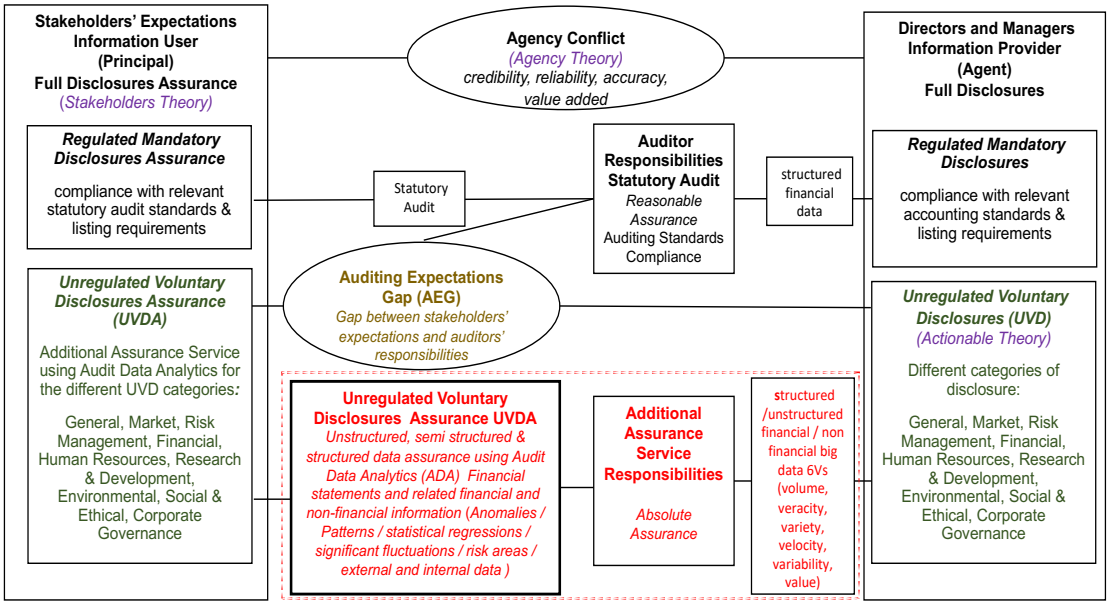
To enhance trust in reporting assurance, providers need to be well connected to the stakeholders and understand their issues well (Henriques, 2003). Therefore, key stakeholders must be identified clearly, as addressing assurance statement to specific stakeholder has implications for assurance on materiality of the information provided. The information is deemed material, if its' omission or misrepresentation, could influence the decisions and actions of stakeholders (Owen and O'Dwyer, 2004). In terms of stakeholders, materiality is a crucial issue around assurance. It is stated that 'if stakeholders don't think the information is relevant or material, it just won't count' (Zadek, 2003).

Auditing has different objectives, such as the provision of independent opinion upon the company's financial statements, improving management performance, and controlling and monitoring the company's activities. The studies address the importance of auditing in providing credibility to accounting information which assists the different stakeholders in making their decisions (Owen et al, 2000; Wood, 1991; Brown, 1962; Gwilliam, 1988; Wallace, 1987; Show et al, 1980; Coopers and Lybrand, 1984). Stakeholders are not just asking for big data, they need analytics. This will enable them to get the right answers to the questions they are asking. Even asking the right questions. Auditors play an important role in verifying and validating the enterprise's stewardship reports (Bromwich, 1992). They need big data to know stakeholders' questions to provide the right answers. Therefore, the purchase of audit results in having reported information likely free from misrepresentation and thus more credible (Barton and Waymire, 2003).

6.3 The Attribution theory

The attribution theory explains how users perceive voluntary disclosures of non-financial information (Kent and Martinko, 1995). Koonce and Mercer (2002) use the attribution theory to show the users' perception towards these disclosures. It is expected that investors would discount positive disclosures as self-serving, but would not do so for the negative disclosures, as they are not considered to be self-serving. Based on the attribution theory, users would be more uncertain about the validity of the self-serving information and discount it. Thus, owners face moral dilemmas, due to the inaccuracy of evaluating and determining the value of decisions made. This is because, the agent takes advantage of the lack of observability of his/her actions and practices to enhance his/her personal goals referred to the agent-principal conflicts (Barako et al, 2006).

Figure 1 Theoretical Framework



7. Research Methodology

The model used in this study is driven from the theoretical framework constructed, shown in figure 1, based on the empirical evidences and the notion of the utilised theories. The model is examining the impact of using ADA in UVDA on reducing the AEG. The reason of using ADA, is due to the nature of structured and unstructured data used, which is characterized by 6 features, value, velocity, variability, volume and velocity and veracity. It is shown in the theoretical framework, that providing UVDA, using ADA, will expand the role of auditor, to provide additional assurance service to improve the credibility, reliability and add value to UVDs, this will lead to meeting the expectations of the different stockholders, investors, bankers and academics, resulting in the reduction of AEG. Therefore, this research is applied using the questionnaire technique which is designed based on 5-Point Likert scale that include 5 different scales for the answers on the questions; strongly agree, agree,

neutral, disagree, and strongly disagree. Answers are numbered from 1 to 5. 1 represents the strongly agree opinion, 2 represents the agree opinion, 3 is the neutral, 4 is the disagree opinion, and 5 is the strongly disagree opinion. The questionnaire aims to measure the perceptions of the different categories of the sample, towards the role of UVDA using ADA in reducing AEG. The current research use a self-administrated delivery and collection questionnaire to distribute and then collect the questionnaire hand to hand, to ensure having acceptable response rate which affect the validity of the research results.

The questionnaire is self-administered using a mix of online and delivery and collection questionnaires to ensure having an acceptable and sufficient response rate. The auditors sample is collected mainly from the big 4 audit firms. For bankers they are from the main big banks, but not normally distributed among this sample of banks. For academics, this is collected from the accounting departments of different universities. Finally, the investors sample, is primarily focusing on brokers in the stock market who trade on behave of small investors.

An empirical model is used to test the hypothesis of the study regarding the examination of the effectiveness of ADA of un-regulated voluntary disclosers in reducing AEG. The agreement or disagreement upon the entire statement shows the usefulness of the ADA for an un-regulate voluntary disclosure item in reducing AEG. Although the statement is useful in reducing such a gap, it could not be as effective in performing the required reduction of the gap. Therefore, there is further test used to examine the effectiveness of each statement which shows the overall effectiveness of the examined method of reducing the existing expectations gap.

7.1 The Sample Population

The current research is based upon the stakeholder-agency theory; therefore, the selected sample should be a representative of the different stakeholders with their various backgrounds, educations and empowerments. As a result, the current research uses a sample composed of three groups of users; auditors, investors, bankers in line with prior studies. However, the current research adds to the previously mentioned groups a sample of academics. The academics are included in the sample as they may well play a consulting role in the standard setting process. The four sample groups would have equal weights as to overcome any bias that may exists towards any category. Since the sample is categorized over four categories, therefore the sample size must be divisible equally by the 4 categories which may results in selecting a sample of 400 respondents (Dixon et al, 2006; Manson and Zaman, 2000; Best, 1999; Fadzly and Ahmad, 2004).

7.2 Hypothesis Development

Un-regulated voluntary disclosure is information disclosed by corporations in addition to their mandatory disclosure regulated by the standards. This disclosure is useful to improve the decision-making process of the different users. It is composed of different categories such as: general information disclosure, human resources disclosure, extra financial analysis tools disclosure, risk management disclosure, research and development disclosure. ADA of UVD using ADA is an effective solution to reduce AEG. It is measured using the different perceptions of different categories of the examined sample by a five-point Likert scale that transform the perceptions to values as to identify the effectiveness of ADA of un-regulated voluntary disclosures in

reducing AEG.

The dependent variable of the research is the AEG. Therefore, the proposed solution is the main concern of the study to examine the role of UVDA using ADA in reducing AEG. Consequently, this model tests the following hypothesis:

Hypothesis – *UVDA of UVD using ADA of is an effective method of reducing the AEG*

7.3 Model Statistical Tests

The model will be examined using Mann-Whitney-U non-parametric test for significant difference between auditors and each non-audit group (academics, investors, and bankers) from one side, and between auditors and the overall non-audit groups from the other side. The Mann-Whitney-U non-parametric test is employed since it examines the significant difference in response means between two populations based on the Z scores and *p* values of the examined variables without the need to test for normality as this test is used even if the distribution was normal. However, the normality of distribution is examined using Kolmogorov-Smirnov test (Best, 1999).

A t-test is applied over the examined sample as to examine the sensitivity of the results towards changing the type of statistical test by using a parametric test instead of the main Mann-Whitney-U non-parametric test.

8. Discussion and Results

8.1 Descriptive Analysis

The descriptive study shows the response rate of study and the details of this response rate for each group of the examined sample. In addition, the analysis emphasises the accounting qualification and past-experience of the sample, and experience of each group in his/her occupation.

Table (1)
Response Rates and Demographic Details of Participants

Group	Survey Sent	Response Received	Accounting Qualification		Accounting Experience	
			Yes	No	Yes	No
Auditors	100	31	31	0	31	0
Academics	100	33	33	0	33	0
Investors	100	34	18	16	15	19
Bankers	100	29	24	5	26	3
Total	400	127	106	21	105	22

Results in table 1 indicate that the overall response rate is 31.75 per cent which is an acceptable rate for using this type of data collection tool (Dixon et al, 2006; Manson and Zaman, 2000; Best, 1999; Dewing and Russel, 2002; Fadzly and Ahmad, 2004). It is noted that auditors and academics groups have got accounting qualifications, while bankers and investors groups vary between having accounting qualifications and not having accounting qualifications, since nearly half the investors group sample have accounting qualifications while the second half not, which presents a variety of the sample qualifications. Moreover, like the accounting qualifications, all

the auditors and academics included in the sample have accounting experience, while most the bankers have got accounting experience. Although most of investors group have no accounting experience, the sample is balanced representing variety of different investors which supports the well representation of the sample for the whole population.

Table (2)
Accounting Experience of Responses

Group	None		2-5 Years		5-10 Years		More than 10 Years	
	n	**%**	***N***	**%**	***N***	**%**	***N***	**%**
Auditors (*n*=31)	0	0	11	35.5	8	25.8	12	38.7
Academics (*n*=33)	0	0	14	42.4	2	6.1	17	51.5
Investors (*n*=34)	18	53	3	8.8	7	20.6	6	17.6
Bankers (*n*=29)	0	0	3	10.3	11	38	15	51.7
Total (*n*=127)	18	14.2	31	24.4	28	22	50	39.4

Results of table 2 present the variation of the accounting experience of the different respondents. Most of the auditors' sample had more than 10 years of experience indicating the inclusiveness of senior members in the sample as indicator of the awareness of the relatively new terminologies included in the questionnaire. However, the sample includes other auditors with different experiences to ensure that the sample is well representative for the whole population. Regarding the academics group, it contains diversified groups of accounting experience to maintain the balance between the different experiences, which is reflected on the perception of the respondent. However, most the bankers' sample had more than 10 years of experience which indicates that the study focused on the perceptions of the senior bankers rather than the other categories of experienced bankers.

Accumulatively, the overall sample is balanced between having no experience and having more than ten years' experience, indicating that the sample is representative of the whole population of the four examined groups.

Table (3)
Occupational Experience of Responses

Group	2-5 Years		5-10 Years		More than 10 Years	
	N	**%**	***N***	**%**	***N***	**%**
Auditors (*n*=31)	12	38.7	15	48.4	4	12.9
Academics (*n*=33)	14	42.4	5	15.2	14	42.4
Investors (*n*=34)	28	82.4	4	11.8	2	5.8
Bankers (*n*=29)	8	27.6	11	37.9	10	34.5
Total (*n*=127)	62	48.5	35	27.5	30	24

The occupational experience of responses presented in table 3 shows the number of years each group of respondents still in his occupation as auditor, academic, investor, and banker. This table indicates that most of the auditors are in their career for 5–10 years. However, the academics sample is scattered over the scale as it includes equal proportion of the new fresher academics with 2-5 years' academic experience, and the experienced academics with more than 10 years' academic experience. That's reflected on the diversification of the academic perceptions. In contrast with the academic sample, the bankers sample is well distributed over the different ranges of experience, which guarantee that the sample represents the whole population.

However, the investors sample is concentrated on those dealing with the stock market for 2-5 years. The overall sample is concentrated towards the 2-5 years of experience with nearly equally distribution on the remaining experience ranges.

8.2 Hypothesis Testing

The hypothesis examined by this analysis of the effectiveness of ADA of un-regulated voluntary disclosures towards reducing AEG. Whether this data is available in the annual report, on the cloud, social media or on the company's website. The hypothesis is tested based on the significant differences between the perceptions of the auditors' group compare to each non-audit groups including academics, investors and bankers. In addition, it compares the significant difference of the auditors' group compared to the overall perceptions of the non-auditor groups. Accordingly, using the Likert scale is useful in the analysis of the different perceptions as it has a cutting point, which is 3 in our case, a yardstick used to differentiate between the different perceptions.

Table (4)
The Role of UVDA using ADA in Reducing AEG
(Comparative Mean Response)

Statements	Mean Responses				
	Auditors	Academics	Investors	Bankers	Overall
1. General Disclosure					
1.1 Mission & vision.	3.97	1.27*#	1.29*#	1.24*#	1.27*#
1.2 Statement of corporate strategy.	2.32	1.49*#	1.56*#	1.34*#	1.47*#
1.3 Top management names / experience.	3.65	1.85*#	1.26*#	1.66*#	1.58*#
1.4 Majority of stockholders (composition of shareholdings).	2.06	1.64*#	1.32*#	1.59*#	1.51*#
1.5 Organization structure.	2.23	1.52*#	1.65#	1.41*#	1.53*#
1.6 Statement of corporate goals and objectives.	2.03	1.61	1.65	1.31*#	1.53#
1.7 Presentation of annual reports	2.50	1.24*#	1.74*#	1.55*#	1.51*#
2. Market Disclosure					
2.1 Industry size.	3.71	1.42*#	1.50*#	1.52*#	1.48*#
2.2 Product (s) information.	3.71	1.33*#	1.56*#	1.41*#	1.44*#
2.3 Customers' information.	3.68	1.69*#	1.35*#	1.41*#	1.48*#
2.4 Supplier information.	3.55	2.22*#	1.38*#	1.55*#	1.72*#
2.5 Market(s) information.	3.74	2.09*#	1.41*#	1.38*#	1.64*#
2.6 Market share.	2.32	1.82*#	1.82*#	1.41*#	1.70*#
2.7 Competitive environment.	2.26	1.67*#	2.03	1.69*#	1.80*#
2.8 Productivity capacity.	2.55	1.85*#	1.91*#	1.52*#	1.77*#
2.9 Productivity indicators.	2.35	1.91*#	1.76*#	1.55*#	1.75*#
2.10 Marketing networks.	3.35	1.91*#	2.09*#	1.69*#	1.91*#
2.11 Physical outputs.	3.84	2.06*#	1.82*#	1.86*#	1.92*#
3. Risk Management Disclosure					
3.1 Financial risk (interest rate, currency, credit & financial Instruments).	1.48	1.39	2.03*#	1.72*#	1.72*
3.2 Political risk (international business).	1.55	1.48	1.91	1.28	1.57
3.3 Market risk (competition, market share).	1.68	1.45	1.79*	1.55	1.63*
3.4 Technology risk (rapid change)	1.68	1.44	1.88*	1.38	1.67*
3.5 Environmental risk (laws & regulations).	1.68	1.55	1.82*	1.41	1.65
3.6 Weather risk (climate conditions).	1.77	2.18	2.09*	1.69	2.00*
3.7 Government regulation risk (control, regulation, taxation).	1.77	1.42*	1.97*	1.52	1.65

Statements	Mean Responses				
	Auditors	Academics	Investors	Bankers	Overall
3.8 Seasonality risk (natural seasonal patterns).	1.48	1.81	1.79*	1.55*	1.78*
3.9 Operational risk (technical, accidents, human error & loss).	1.42	3.15*#	2.06*#	1.69*	2.40*
3.10 Cyclicality risk (natural cyclical trend).	1.26	1.88*#	2.03*#	1.86*#	1.86*#
3.11 Suppliers risk (Main Supplier).	1.29	1.79*#	1.71*#	1.72*#	1.73*#
3.12 Natural resources risk (reserves quality and quantity).	1.19	2.24*#	1.91*#	1.28*	1.98*#
4. Financial Disclosure					
4.1 Financial ratios & statistics.	1.26	1.61*#	1.88*#	1.86*#	1.63*#
4.2 Industry ratios.	1.23	1.33	2.00*#	1.79*#	1.67*#
4.3 Using charts, graphs, photos.	2.10	2.24	1.79*	2.03	1.65*#
4.4 Market Share price.	1.16	2.00*#	1.74#	1.86*#	2.00*#
4.5 Bank loans, mortgages and their uses.	1.90	2.15	1.71*	1.90	1.65*#
4.6 Information of capital structure.	1.65	1.42	1.91	1.90	1.78
4.7 Information of dividends policy.	2.06	1.82	1.85	2.00	2.40
4.8 Reasons and effects of acquisions / disposals on past results.	1.81	2.24*#	2.15#	1.90	1.86
4.9 Information of foreign sales.	1.77	2.85*#	2.21#	1.86	1.73
4.10 Financial information on quarterly basis.	1.42	1.82*#	1.97*#	1.55	1.98*#
4.11 Changes in inventory level.	1.65	2.00*#	1.47*	1.72	1.73
4.12 Dividends per share compared with previous years.	1.39	2.06*#	1.91#	1.86*#	1.95*#
5. Human Resources Disclosure					
5.1 Consultation with employees.	4.35	1.85*#	2.06#	1.45*#	1.80*#
5.2 Employee share ownership.	1.84	3.06*#	1.97*	1.52	2.21*#
5.3 Employment data.	3.94	3.27*#	2.09*#	1.62*#	2.35*#
5.4 Pension commitment.	1.77	2.91*#	2.21	1.72	2.30*#
5.5 Employees health & safety.	1.65	3.28*#	1.79	1.72*	2.27*#
5.6 Average compensation of employees.	3.90	3.12*#	1.97*#	1.83*#	2.32*#
5.7 Percentage of foreign and national labour force.	4.06	3.24*#	1.68*#	1.62*#	2.20*#

Statements	Mean Responses				
	Auditors	Academics	Investors	Bankers	Overall
5.8 Information of training and employee development.	3.68	3.24*#	2.21*#	1.86*#	2.46*#
5.9 Number of employees trained.	3.35	3.12	1.88*#	1.83*#	1.73*#
5.10 Amount spent on training.	3.52	2.03*#	1.79*#	1.62*#	1.95*#
6. Research & Development Disclosure					
6.1 Inputs: Product.	1.52	1.79	1.47*	1.93*#	1.80*#
6.2 Inputs: People.	3.94	2.24*	1.70#	1.66*#	2.21*#
6.3 Input: Infrastructure.	1.68	2.15*#	1.79*	1.62	2.35*#
6.4 Outputs: Actual achievements (Product development).	2.68	2.24*#	1.41#	1.59*#	2.30*#
6.5 Outputs: Actual achievements (Beyond Product development).	2.26	2.64	1.24*#	1.86*#	2.27
6.6 Outputs: Potential achievements.	3.00	2.33*#	1.38*#	1.69*#	2.32*#
6.7 Output: Product timing.	1.74	2.27*#	1.38*#	1.52	2.20*#
6.8 Future expenditures.	1.81	2.30*#	1.65	1.66	2.46*#
6.9 Financing Past, Present, and Future.	1.71	2.39*#	1.65	1.79	1.95
6.10 Accounting/ financing (Comparing prior years, competition, budget).	1.74	2.12*#	1.41*#	1.66	1.73
6.11 R&D ratios.	1.74	1.73	1.38*#	1.66	1.58
6.12 R&D as explanatory.	2.65	2.73	1.76*#	1.72*#	2.08*#
6.13 Explaining R&D changes.	3.06	2.48*#	1.53*#	1.76*#	1.93*#
7. Environmental, Social, and Ethical Disclosure					
7.1 Environmental reports.	1.94	2.21*	1.44*#	2.00	1.88
7.2 Value added statement.	2.03	1.70	1.38*#	2.03	1.69#
7.3 Social activities Cont.	1.61	1.48	1.76	2.04*	1.75
7.4 Environmental health safety.	1.77	2.03*	1.47	1.45*	1.66
7.5 Energy Information.	3.32	2.76*#	1.47*#	1.66*#	1.97*#
7.6 Community information.	3.35	2.18*#	1.59*#	1.52*#	1.77*#
7.7 Charitable donations information.	3.39	3.52	1.88*#	1.83*#	2.43*#
7.8 Using photocopy of awarded certificates.	1.77	3.27*#	1.79	1.90	2.33*#
7.9 Methods of provisions computation.	1.32	1.88*#	2.62*#	1.90*#	2.15*#
7.10 Employment of disabilities.	3.61	2.33*#	1.88*#	1.62*#	1.96*#
7.11 Ethical actions.	2.29	2.18	1.82*#	2.45	2.14

Statements	Mean Responses				
	Auditors	Academics	Investors	Bankers	Overall
8. Corporate Governance Disclosure					
8.1 Major share ownership and voting rights.	1.26	1.61*#	1.82*#	1.41	1.63*#
8.2 List of board members.	3.23	1.82*#	1.71*#	1.97*#	1.82*#
8.3 Picture of chairperson and/or other members.	3.45	2.12*#	1.91*#	1.90*#	1.98*#
8.4 Board member qualifications.	3.42	3.12	1.88*#	1.83*#	2.29*#
8.5 Number of shares held by members of the board.	2.00	2.21	1.91	1.66	1.94
8.6 Remuneration policy for board members and key executives.	2.97	2.24*#	1.76*#	2.00*#	2.00*#
8.7 Audit committee members: names, addresses, experiences	3.84	3.12*#	1.68*#	2.10*#	2.30*#
8.8 Corporate governance codes, policies, implementation extent.	1.49	1.55	1.76	1.76	1.69

*Significantly different from auditors at $\rho \leq 0.05$ (Mann-Whitney U test)
#Significantly different from auditors at $t \leq 0.05$ (t-test)

Table 4 represents the proposed method for the reduction of the existence AEG. The method is based on expanding the auditors' roles and responsibilities to include UVD, which satisfies the different stakeholders' expectations, represented by the non-auditors' groups, and in turn reduces the auditing expectations gap. Regarding the general disclosure (statement 1), there is agreement among the non-auditors' groups that auditing general disclosure items would contribute to the reduction of the AEG. On the other hand, auditors' group disagreed that auditing of the company's mission and vision (statement 1.1), and the top management names and experiences (statement 1.3) would reduce AEG, while agreed that auditing the rest of general disclosure items would reduce the AEG.

However, there is only insignificant difference between auditors' and overall non-auditors' group regarding auditing the statement of corporate goals and objectives to reduce the auditing expectation gap, while there is significant difference between auditors group and overall non-auditors' groups concerning the rest of the general disclosure items.

In relation to the market disclosure (statement 2), auditors' group agreed that auditing the market share (statement 2.6), competitive environment (statement 2.7), productivity capacity (statement 2.8), and productivity indicators (statement 2.9) information would reduce AEG. On the other hand, this group disagreed that auditing any of the remaining items would reduce AEG. The non-auditors' groups agreed that auditing any of the market disclosure items would reduce AEG. However, there is significant difference between auditors' group and overall non- auditors' group indicating that auditing the items of market disclosure items would not effectively reduce AEG.

With respect to the risk management disclosure (statement 3), it was interesting observation that both auditors and non-auditors' groups agreed that auditing risk management disclosure would contribute to the reduction of AEG. However, there are

insignificant differences between auditors' group and overall non- auditors' ones regarding that auditing political (international) risk disclosure (statement 3.2), environmental risk disclosure (statement 3.5), and government regulation risk disclosure (statement 3.7) would effectively reduce AEG. While on the other hand, there are significant differences between auditor groups and non-auditor groups regarding the rest of the risk management disclosure items.

Similarly, regarding the voluntary financial disclosure, both auditors and non-auditors' groups agree that using ADA to audit these disclosures would reduce AEG. However, there are insignificant differences between auditors and non-auditors' groups regarding using ADA for information of capital structure disclosure (statement 4.6), information of dividends policy disclosure (statement 4.7), reasons and effects of acquisitions / disposals on past results disclosure (statement 4.8), information of foreign sales (statement 4.9), and changes in inventory disclosure (statement 4.11) would effectively reduce AEG. On the other hand, using ADA for the other voluntary financial disclosure items would not contribute effectively to the reduction of AEG.

Concerning human resources disclosure (statement 5), auditors' group agreed that auditing only employee share ownership disclosure (statement 5.2), pension commitment disclosure (statement 5.4), and employees' health and safety disclosure (statement 5.5) would reduce AEG. Otherwise, none of the other human resources disclosure's auditing would reduce the AEG. While non-auditor groups agreed that auditing all the human resources disclosure items leads to the reduction of AEG. However, there is significant difference between auditors and overall non-auditors' groups concerning the auditing of human resources disclosure, which indicates that the human resources disclosure auditing would not effectively reduce AEG.

With respect to research and development disclosure (statement 6), auditors' group agreed that using ADA for these items of this sort of disclosure would reduce that AEG, except for the auditing of the inputs (people) disclosure (statement 6.2), output (potential achievement) disclosure (statement 6.6), and explaining the research and development changes disclosure (statement 6.13), they disagree upon that auditing of these items would reduce AEG. On the other hand, non-auditor groups agreed upon auditing the different items would reduce AEG.

There is insignificant difference between the auditors and non-auditors' groups regarding the suggested auditing outputs (actual achievements beyond product development) disclosure (statement 6.5), financing past, present and future disclosure (statement 6.9), accounting/financing (comparing prior years, competition, budget) disclosure (statement 6.10), and research and development ratios (statement 6.11) would contribute effectively to the reduction of AEG, while the other items would not.

Moreover, non-auditors' groups agreed that using ADA to audit all the environmental, social, and ethical disclosure (statement 7) items would reduce the existing AEG, while auditors' group disagreed that auditing of the energy information disclosure (statement 7.5), community information disclosure (statement 7.6), charitable donations information disclosure (statement 7.7), and employment of disabilities disclosure (statement 7.10) would reduce this gap.

There is insignificant difference between auditors and overall non-auditors' groups regarding the suggestion that auditing of the ethical reports (statement 7.1), value added statement (statement 7.2), social activities contributions disclosure (statement 7.3), environmental health and safety disclosure (statement 7.4), and ethical actions disclosure (statement 7.11) would effectively reduce this existing gap rather than the other environmental, social, and ethical items.

Finally, concerning corporate governance disclosure (statement 8), as usual non-auditors' groups agreed that using ADA for these items would reduce AEG, while the auditors' group agreed that auditing only the major share ownership and voting rights disclosure (statement 8.1), number of shares held by members of the board disclosure (statement 8.5), remuneration policy for board members and key executives (statement 8.6), and corporate governance codes, policies, implementation extent disclosure (statement 8.8) would reduce the existing gap.

There is insignificant difference between auditors and overall non-auditors' groups regarding the idea of using ADA to audit the disclosure of number of shares held by members of the board disclosure (statement 8.5) would reduce this AEG, while there are significant differences between the both groups regarding the other items.

8.3 Sensitivity Analysis

To examine how sensitive the results, a t-test is applying over the previously examined data using the Mann-Whitney U non-parametric test. The significant differences between the score means of the various respondents is measured using the t-test, since there is an existence of significant difference between the auditor and the non-auditor group if the t value ≤ 0.05, otherwise the difference between the two groups is insignificant. The results of the t-test are compared to the results of the Mann-Whitney U non-parametric test to examine the sensitivity of the results towards changing of the applied test.

It is observable from the previous analysis that the significant difference analysis using the t-test analysis do not differ significantly from the results of the Mann-Whitney U non-parametric test, especially on the overall level, which indicates that the results are non-sensitive to the change of statistical test. This sensitivity analysis result confirms, and support, the results of the Mann-Whitney results, and evidence that this selected statistical test fits with the examined data.

9. Conclusion and Future Suggestions

The previous discussion provides different evidences regarding the role of using ADA for UVDA in reducing AEG. The interesting point is that due to agency conflicts, some studies show that this role is still questionable due to the credibility and reliability of this type of disclosure.

This additional assurance service needs to be performed using ADA to deal with such big un-structured data from diverse data sources and in different formats.

As a result, expanding the role of auditor, to include additional assurance using ADA of the UVD, to satisfy users' needs and expectations towards his/her roles and responsibilities, is highly recommended. It is expected that approaching the satisfaction of users' needs and expectations will reduce AEG. To this extent, we argue that using ADA of un-regulated voluntary disclosures will expand the auditor's role, to provide assurance and credibility to this type of disclosures, which consequently will lead to the reduction of AEG.

ADA of un-structured voluntary disclosers, can be provided by audit firms different from the one auditing the mandatory disclosures to maintain auditors' independency in compliance with the SOX and ISA requirements. As a result, firms' will be exposed to an extended oversight practices provided by dual audit partners. Therefore, this will maintain audit firms' independency leading to robust assurance and credible information. The study suggests providing an additional assurance service

that will be complementing the statuary audit. The additional assurance will be concerned with a wide range of big data, in comparison to statuary audit which focuses on structured financial information. This new service will expand the role of assurance services provided to the different types of un-regulated voluntary disclosures, to meet the different users' expectations, not just in relation to the quantity of disclosed information, but also, the quality of this information in terms of its credibility. This is not to say that we suggest to mandate the un-regulated voluntary disclosers, otherwise it losses its value and relevance, but to ensure that any un-regulated information voluntarily disclosed by any organization, is being assured, using audit data analytics tools. The suggested service will be requiring new capabilities and skills, different from those required by statuary audit providers, creating new opportunities, as well as challenges, in terms recruiting and training a new generation of un-regulated voluntary disclosures assurance providers, whom can manage and deal with structured and unstructured data using contemporary audit data analytics techniques.

Finally, Our study provides a new insight towards reducing audit expectations gap through using audit data analytics tools and techniques to provide assurance service for un-regulated voluntary disclosures, but it didn't discuss the challenges associated with this new services with regards to the different set of skills required and how education and professional training will be able to provide these expertise. Additionally, the study did not investigate the providers point of view of how comfortable they are in sharing this level of detailed information with an external independent party and whether the providers are owning appropriate internal control systems which can synchronize with the assurance providers sophisticated audit data analytics tools. These areas need to be investigated by further research to address the different challenges and may be resistance to implement such assurance service from a preparer point of view.

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Appendix

Research Questionnaire

Dear Respondent,

I wish to have your attention towards my research. It aims to investigate the impact of providing Unregulated Voluntary Disclosures Assurance (UVDA) using Audit Data Analytics (ADA) on reducing the Auditing Expectations Gap (AEG). The research uses the questionnaire technique as to capture the data about the different perceptions of different samples about this problem.

Finally, I would like to thank you for having your attention towards this questionnaire, which considered being the corner stone of the research results.

Thanks for your time and attention

The Researcher

Section I

Demographic Information

Please tick in front of the answer that fits with your personal information:

1. Do you have Accounting qualifications?

   Yes [ ] No [ ]

2. Do you have accounting experience?

   Yes [ ] No [ ]

3. If yes, how many years?

   2 – 5 years [ ] 5 – 10 years [ ] Over 10 years [ ]

4. What is your occupation?

   Auditor [ ] Banker [ ] Investor [ ] Academic [ ]

5. How long have you been in your present occupation?

   2 – 5 years [ ] 5 – 10 years [ ] Over 10 years [ ]

6. Do you wish to have a copy of the analyzed results emailed to you?

   Yes [ ] No [ ]

7. If yes, please provide your email address.

   [ ]

Section II

The Role of Unregulated Voluntary Disclosures Assurance (UVDA) using Audit Data Analytics (ADA) in Reducing the Auditing Expectations Gap (AEG)

Identify to which extent do you agree or disagree that expanding the auditors' roles and responsibilities to include the provision of UVDA for the following UVDs using ADA would contribute to the reduction of the AEG, using a scale of 1 to 5 as shown below:

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. General Disclosure					
1.1 Mission & vision.	**1**	**2**	**3**	**4**	**5**
1.2 Statement of corporate strategy.	**1**	**2**	**3**	**4**	**5**
1.3 Top management names / experience.	**1**	**2**	**3**	**4**	**5**
1.4 Majority of stockholders (composition of shareholdings).	**1**	**2**	**3**	**4**	**5**
1.5 Organization structure.	**1**	**2**	**3**	**4**	**5**
1.6 Statement of corporate goals and objectives.	**1**	**2**	**3**	**4**	**5**
1.7 Presentation of annual reports in Arabic & English.	**1**	**2**	**3**	**4**	**5**
2. Market Disclosure					
2.1 Industry size.	**1**	**2**	**3**	**4**	**5**
2.2 Product (s) information.	**1**	**2**	**3**	**4**	**5**
2.3 Customers' information.	**1**	**2**	**3**	**4**	**5**
2.4 Supplier information.	**1**	**2**	**3**	**4**	**5**
2.5 Market (s) information.	**1**	**2**	**3**	**4**	**5**
2.6 Market share.	**1**	**2**	**3**	**4**	**5**
2.7 Competitive environment.	**1**	**2**	**3**	**4**	**5**

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
2.8 Productivity capacity.	1	2	3	4	5
2.9 Productivity indicators.	1	2	3	4	5
2.10 Marketing networks.	1	2	3	4	5
2.11 Physical outputs.	1	2	3	4	5
3. Risk Management Disclosure					
3.1 Financial risk (interest rate, currency, credit & fin. Instruments).	1	2	3	4	5
3.2 Political risk (international business).	1	2	3	4	5
3.3 Market risk (competition, market share).	1	2	3	4	5
3.4 Technology risk (rapid change)	1	2	3	4	5
3.5 Environmental risk (laws & regulations).	1	2	3	4	5
3.6 Weather risk (climate conditions).	1	2	3	4	5
3.7 Government regulation risk (control, regulation, taxation).	1	2	3	4	5
3.8 Seasonality risk (natural seasonal patterns).	1	2	3	4	5
3.9 Operational risk (technical, accidents, human error & loss).	1	2	3	4	5
3.10 Cyclicality risk (natural cyclical trend).	1	2	3	4	5
3.11 Suppliers risk (Main Supplier)	1	2	3	4	5
3.12 Natural resources risk (reserves quality and quantity).	1	2	3	4	5

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
4. Financial Disclosure					
4.1 Financial ratios & statistics.	**1**	**2**	**3**	**4**	**5**
4.2 Industry ratios.	**1**	**2**	**3**	**4**	**5**
4.3 Using charts, graphs, photos.	**1**	**2**	**3**	**4**	**5**
4.4 Market Share price.	**1**	**2**	**3**	**4**	**5**
4.5 Bank loans, mortgages and their uses.	**1**	**2**	**3**	**4**	**5**
4.6 Information of capital structure.	**1**	**2**	**3**	**4**	**5**
4.7 Information of dividends policy.	**1**	**2**	**3**	**4**	**5**
4.8 Reasons and effects of acquisions / disposals on past results.	**1**	**2**	**3**	**4**	**5**
4.9 Information of foreign sales.	**1**	**2**	**3**	**4**	**5**
4.10 Financial information on quarterly basis.	**1**	**2**	**3**	**4**	**5**
4.11 Changes in inventory level.	**1**	**2**	**3**	**4**	**5**
4.12 Dividends per share compared with previous years.	**1**	**2**	**3**	**4**	**5**
5. Human Resources Disclosure					
5.1 Consultation with employees.	**1**	**2**	**3**	**4**	**5**
5.2 Employee share ownership.	**1**	**2**	**3**	**4**	**5**
5.3 Employment data.	**1**	**2**	**3**	**4**	**5**
5.4 Pension commitment.	**1**	**2**	**3**	**4**	**5**
5.5 Employees health & safety.	**1**	**2**	**3**	**4**	**5**
5.6 Average compensation of employees.	**1**	**2**	**3**	**4**	**5**
5.7 Percentage of foreign and national labour force.	**1**	**2**	**3**	**4**	**5**

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
5.8 Information of training and employee development.	**1**	**2**	**3**	**4**	**5**
5.9 Number of employees trained.	**1**	**2**	**3**	**4**	**5**
5.10 Amount spent on training.	**1**	**2**	**3**	**4**	**5**
6. Research & Development Disclosure					
6.1 Inputs: Product.	**1**	**2**	**3**	**4**	**5**
6.2 Inputs: People.	**1**	**2**	**3**	**4**	**5**
6.3 Input: Infrastructure.	**1**	**2**	**3**	**4**	**5**
6.4 Outputs: Actual achievements (Product development).	**1**	**2**	**3**	**4**	**5**
6.5 Outputs: Actual achievements (Beyond Product development).	**1**	**2**	**3**	**4**	**5**
6.6 Outputs: Potential achievements.	**1**	**2**	**3**	**4**	**5**
6.7 Output: Product timing.	**1**	**2**	**3**	**4**	**5**
6.8 Future expenditures.	**1**	**2**	**3**	**4**	**5**
6.9 Financing Past, Present, and Future.	**1**	**2**	**3**	**4**	**5**
6.10 Accounting/ financing (Comparing prior years, competition, budget).	**1**	**2**	**3**	**4**	**5**
6.11 R&D ratios.	**1**	**2**	**3**	**4**	**5**
6.12 R&D as explanatory.	**1**	**2**	**3**	**4**	**5**
6.13 Explaining R&D changes.	**1**	**2**	**3**	**4**	**5**
7. Environmental, Social, and Ethical Disclosure					
7.1 Environmental reports.	**1**	**2**	**3**	**4**	**5**
7.2 Value added statement.	**1**	**2**	**3**	**4**	**5**

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
7.3 Social activities & contributions.	1	2	3	4	5
7.4 Environmental health safety.	1	2	3	4	5
7.5 Energy Information.	1	2	3	4	5
7.6 Community information.	1	2	3	4	5
7.7 Charitable donations information.	1	2	3	4	5
7.8 Using photocopy of awarded certificates.	1	2	3	4	5
7.9 Methods of provisions computation.	1	2	3	4	5
7.10 Employment of disabilities.	1	2	3	4	5
7.11 Ethical actions.	1	2	3	4	5
8. Corporate Governance Disclosure					
8.1 Major share ownership and voting rights.	1	2	3	4	5
8.2 List of board members.	1	2	3	4	5
8.3 Picture of chairperson and/or other members.	1	2	3	4	5
8.4 Board member qualifications.	1	2	3	4	5
8.5 Number of shares held by members of the board.	1	2	3	4	5
8.6 Remuneration policy for board members and key executives.	1	2	3	4	5
8.7 Audit committee members: names, addresses, experiences	1	2	3	4	5
8.8 Corporate governance codes, policies, implementation extent.	1	2	3	4	5