Global Research Journal of Accounting and Finance (GRJAF) 50
ISSN: 2811-1710 (Paper), ISSN: 2811-1729 (Online) Vol 6, No 2, Pgs 50 - 66: 2026

Financial Reporting Quality and Data Analysis

By

Dr, Yahaya S. Sule.

.... Department of Accounting,
Faculty of management Science
Anambra state University
And

Dr Iseremeiya Comfort
Department of Accounting,
Faculty of management Science
Ambrose Alli University Ekpoma.

ABSTRACT
This examined financial reporting quality. And data analysis. Conceptual and library based research was implored in the study.. There are debates that modern techniques of data analysis would possibly affect reporting quality. However, there is slow integration of financial reporting into the modern techniques of data analysis which makes it difficult for financial reports to achieve higher quality and more value added. More so, might be other unanswered questions for further investigation. Examples of such areas could include; investigating how various financial accounting procedures and practices could be affected due to introduction of big data? How financial accounting can develop large data bank and adapt new business models in their analysis? Practices that can be more appropriate in data generation, processing and communicating financial report? Big data analysis became imperative and should be included in accounting teaching prospectus at all levels of education and also creates training and workshops courses for academics and researchers. It is also important to introduce accountants and potential accountants into modern day techniques of data analysis, processing, storing, managing and usages. This research is an open solicitation for empirical studies on big data analysis and accounting profession.
Key Words: Big Data, Analysis, Financial Reporting Quality,

Background to the study

. Data analysis helps to capture the values of financial information, it involves tools and techniques used analysing business data in generating information to enrich financial reports (Bhadani & Jothimani, 2016). Currently, the globe is witnessing fourth industrial revolution, champion by “Big Data” Younis (2020). Raw big data hold latent value, which is unlocked when converted into meaningful insights through processing; nonetheless, the heterogeneity and scale

ISSN: 2811-1710 (Paper), ISSN: 2811-1729 (Online) Vol 6, No 2, Pgs 50 - 66: 2026

of the data create substantial obstacles in the processing journey. Giving the challenges facing companies while processing gigantic data into information, companies are therefore faced with option of either ignoring these data in their state or processing the data to information thus harvesting its' benefits. Big data cannot yield its required result using the traditional tools in the analysis, rather, modern technology and processing tools are needed in order to convert large data into useful financial information that will enhance financial report.

Basically, the primary objective of financial reporting is to furnish stakeholders with relevant and reliable information, enabling them to make informed economic decisions (Okoye & Akenbor 2014). Younis (2020) noted that financial crises in recent times have underscore the vital importance of high-quality accounting information, prompting business organization to re-examine their accounting practices. In recent times gigantic data, the traditional financial reporting template has been seriously disrupted, making more stakeholders to appreciate the benefits and dynamics of big data (Vasarhelyi & Liu, 2014). Companies that are able to manage large amount of data might improve the quality of their report making it possible for better decisions making (McAfee & Brynjolfsson, 2012). Modern data analysis enriches financial reports thereby making it more meaningful and useful for decision making. Big data aid the discovering of analysis of deviation, patterns and inconsistencies which boost the extraction of other useful information relating to the subject matter.

It is expected that auditors should provide credibility to financial reports. Big data offers window for auditor to acquire more robust information about entities and their environment which in turn will improve the auditor's risk assessment, response and effectiveness (De Mauro, Greco, & Grimaldi, 2016). Data analytics in preparing and interpreting financial report can be traced to early 1960s; of note is the 1960's Computer Assisted Audit Techniques (CAATs) emerged as a pioneering method for examining data with the aid of computers. The early 1980s, marked milestone with the introduction of commercial analytical tools like Audit Command Language and Interactive Data Extraction Analysis, provided by computer vendors, which subsequently became standard components of audit firms' analytical arsenals. (O'Leary & Markus, 2006). Currently, emerging technology in the globe which include artificial intelligence, cloud computing and block chain, all these have their impact on the accounting profession (Kroon, Alves, & Martins, 2021).

The coming on of enormous data have disrupted traditional financial reporting template, makings stakeholders to appreciate the benefits and dynamics that comes with big data (Vasarhelyi & Liu, 2014). As the current global business environment changes due to use of technology, accounting roles evolves as well (El-Dalahmeh, 2021). For companies and accountants to maintain relevant in business, they must take advantage of novel data analysis that are available to enhance their work. Some organisations are faced with the challenge of how they can store and manage large data to achieve optimal result (Younis, 2020). The companies are also faced with the challenge of how to use these data to improve their financial reports (Younis, 2020). However, despite possible positive effect of big data analysis on financial reporting, scientific research in this regards, remains in its infancy (Younis, 2020.b). More so, there are

ISSN: 2811-1710 (Paper), ISSN: 2811-1729 (Online) Vol 6, No 2, Pgs 50 - 66: 2026

various areas that could attract further investigation, like, how does big data affects accounting information quality? How can big data be adapted to new business models? These questions have become necessary, because the evolution of data analysis technologies have the potential of changing or distorting research and practices. These evolutions will be of significance if there is commensurate development of new models that will be implored to aid financial reporting quality (Kroon, et al., 2021).

Accenture (2013) opine that big data may be disruptive and leads to revolutionise business based on survey of impact of big data analysis on financial reporting. Kroon, et al. (2021) opined that in improving financial reporting quality, existing accounting standards should be revised from the traditional ways of data collection and analysis to some more sophisticated techniques that allow for modern analysis The challenge faced by many organisations is on how to source, control, store, manage and use big data in optimising financial reporting quality. Big data might be beneficial to stakeholders if companies are able to utilise it in preparing financial statements. They help more in enhancing companies' financial reporting quality more. However, despite big data analysis perceived value for financial reporting there are no much work on big data analysis and financial reporting quality. Against this backdrop this study examined big data analysis and financial reporting quality. The research also calls for more empirical research to determine effectiveness and efficiency on big data analysis and financial reporting quality. The rest paper is structured thus; big data analysis, financial reporting quality, qualitative characteristics of accounting information, big data analysis implication for financial reporting quality, financial reporting quality and challenges of big data, stakeholder theory and conclusion.

Financial Reporting Quality

Kaya and Akbulut (2018) argued that financial accounting is the art of recording, keeping, retrieving, summarising, analysing and presenting financial transactions. Farida et al. (2021) are of the opinion that good information system increases its value through increased efficiency. Financial reports are the formal process businesses use in reporting their financial activities. Financial reports are essential resource for market participant who helps in reducing conflict all stakeholders (Al-Dmour, et al., 2018). Irwandi and Pamungkas (2020) opined that financial reports are expected to provide quality financial information. There is no established meaning for financial reporting quality; it might be ascribed to its broadness (Achim & Chis, 2014). The broadness includes disclosure of non-financial and financial information in their reports, thus enriching quality (Herath & Albarqi, 2017). However, it is imperative to provide high quality information in reporting financial transactions as it may influence stakeholders positively in making financial decision (International Accounting Standards Board [IASB], (2008). Financial reports are of higher quality if the following attributes reflect in the reports; full disclosure, transparency and comparability (Eyenubo, Mohamed & Ali, 2017).

Okoye and Akenbor (2014) describe financial reporting quality as the exactness of conveying information concerning firm's operations (financial statements). Financial statements include among others its expected cash flows, financial position and income statement. Biddle, Gilles and Verdi (2009) defined financial reporting quality as exactness with which management

ISSN: 2811-1710 (Paper), ISSN: 2811-1729 (Online) Vol 6, No 2, Pgs 50 - 66: 2026

communicates cash flow activities of an organisation to stakeholders. Achim and Chis (2014) argued that financial information value could determine financial reporting quality, stressing the effect the legal system, accounting education, financing sources, tax system, economic development and professional accountant influence on accounting practise could contribute to reporting quality. Martinez-Ferrero (2014) opines that financial reporting quality is reporting process of communicating authentic information. Biddle et al. (2009); Tang et al. (2008) agreed with Martinez-Ferrero (2014) noting that financial reporting quality is the degree to which content of financial statements give a true and fair view of an organisation. Irwandi and Pamungkas (2020) are of the view that quality financial statements prevent organisation from failure or collapse, it also influences future fiscal policy. Achim and Chis (2014) maintained that financial reports would be of higher quality if there was good quality financial information.

IASB (2008) clearly spelt out the conditions for high quality information. Financial statements should meet certain qualitative criteria as spelt out in IASB (2008). These qualitative criteria are shared into enhancing and fundamental qualitative characteristics. The former includes timeliness, verifiability, understandability, and comparability while the latter include faithful representation and relevance (IASB, 2008). Achim and Chis (2004) opine that qualitative characteristics are of use stakeholders in making decision, while enriching the usefulness of financial. The researcher defines financial reporting quality as straightforwardness of communicating financial information about firms' activities and financial positions.

Faraida el al. (2021) study shows positive relationship among financial reporting quality and organisational performance. Martinez-Ferrero (2014) argued that to achieve quality report, organisations should to expand the content in their financial reports, thereby facilitating greater transparency resulting in well-grounded decisions by market participants. She added that financial statements quality might be determine by its transparency. Transparency reduces asymmetries in information thereby satisfying stakeholders needs. Chen, Hope, et al. (2011); Leuz and Verrecchia (2000) were quick to note that higher financial reporting quality helps in reducing liquidity risk by counteract information asymmetry, reduction or eliminating earnings management and reduction of information risk. The advantages above may result in a reduction discretionary use of power by managers for their personal benefit (Chen et al., 2011). Palea (2013) noted that quality disclosure of financial statements reduced investors' worries about concerning the firm. Also when granting external financing to companies, investors should take financial reporting quality (Martinez-Ferrero, 2014).

Data Analysis

Recent technological advancement globally in cloud computing and internet this has led to the evolution of a novel resource characterised by accelerating pace, huge volume and variety which is largely known as "big data" (Jina, et al. 2015). Gigantic data evolved from current use of modern technologies growing over time. This data provides right user at the right time with right information. Bhadani and Jothimani, (2016) traced big data from 2001. Zulkarnain, and Anshari (2016) argued that huge portions of raw data generated and stored can result in large

ISSN: 2811-1710 (Paper), ISSN: 2811-1729 (Online) Vol 6, No 2, Pgs 50 - 66: 2026

data. Currently, there is no universally acceptable definition for big data giving its nature. Hashem, et al. (2014) opine that big data are massive data, which very fast from different forms. Big data refers to complex data that traditional methods cannot be process (Zulkarnain & Anshari 2016).

De Mauro, et al. (2016) opined big data as data asset that is characterised by volume, variety and velocity which requires modern analytical methods for processing information. International Organisation for Standardisation [ISO] (2017) defines big data using its unique characteristics such as size, speed, contrast, diversity, reliability, and validity. Gepp, et al. (2018) explained that big data analysis is techniques used in drawing inference from the gigantic data of different structure. Younis (2020) defines big data as non-financial and financial data obtained through internal and external sources. Riahi and Riahi (2018) opine that the big data evolve through technologies which is right on time, to generate right information to the right users from huge data which have been growing over time internally and externally.

Laney (2011) used 3V model or dimension (volume, variety and velocity) in addressing ever increasing challenged caused massive data. Assunção, et al. (2015) opines big data represent increasing variety, volume and velocity. Riahi and Riahi (2018) went further to explain large data in line with the 3Vs; volume represents large capacity of data, which are more diversified. These data include structured, semi-structured, and unstructured data which representing variety. Adding that the data arrives faster than before, representing velocity. Volumes are sets of data that are so large making it impossible using traditional tools in analysing it. Variety replicates diverse data formats, like quantitative, qualitative, text-based and mixed forms, which include pictures, film, and other formats. Velocity measures frequency at which new data are made available, which of course is at an increasingly rapid rate (ISO, 2017).

Gartner (2012) argues that big data are with high velocity, huge volume and high variety data assets, which are innovative and cost-effective when processed into information, may enhance financial reports and process automation. Hashem et al., (2014) formed opinion that big data are characterised by 4Vs, which are volume, velocity and variety and value. Gepp, et al. (2018) defined big data as structured, semi-structured or unstructured data sets which is determined by volume, variety, velocity, and veracity. Ishwarappa and Anuradha (2015) described big data as value, velocity, volume, variety and veracity thus expanding Vs to 5V. Al-Salmi (2018) state the characterises of big data to include volume, velocity, visualisation, variety, variability, value and veracity. Taylor-Sakyi (2016) stated that volume is the current data existing is in petabytes, forecasting that in the next few years that the volume may increase to zettabytes (ZB), this is due to increased use of mobile devices and social networks. These have increased the rate at which data flow and are capture which is referred to as velocity. The increased dependability of data has posed great challenge given numerous data that are in rapid and continuously motion. Variety are collected from various source, numerous formats, gotten from text, web, e-mails, sensors, etc. mixed-structured, semi-structured, unstructured or structured. The huge large size of data makes it difficult for traditional analytical methods to be effective for analysising big data. Veracity is vagueness within data, naturally from sound and

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irregularities. Big data could be attributed to the rise of data processing, cloud computation, social media and processing power (through multi-core processors) in the mid-2000s (Manovich, 2011).

Davenport (2010) traced evolution of data analysis period from decision support from 1970 through 1985 (analysing some structured data for support decision making), executive support from 1980 through 1990 (data analysis for senior executives to take action), nnline analytical processing (OLAP) from 1990 through 2000 (application for analyzing multidimensional data tables), business intelligence from 1989 through 2005 (applications to support data-driven decisions, with emphasis on reporting), analytic covers period from 2005 through 2010, this period is known as mathematical and statistical modelling analysis use for decision making. The period from 2010 till present date is analysis of various structures, high frequency and massive data. De Mauro, et al. (2016) augured that modern methods of analysing data use more sophisticated and improved technology in analysis data resulting in improved information. Riabi and Riahi (2018) linked big data partly to devices connected to internet. Thus, devices can transmit data about their users through different platforms that has ability to access, store, analysis, manage and distribution computing components of big using various virtualisation (Hashem, et al., 2014). Hashem, et al., (2014) defines virtualization as system distributing resource and separating underlying hardware to accelerate computer resource scalability, efficiency and utilization. De Mauro et al., (2016) describe big data as voluminous and generate lot of distinctions in venerations of geographic region, information mediums and nature of undertakings among others. Going these definitions, big data can define as massive data are becoming popular in business world. Alles and Gray (2015) stated that big data are determined by analysis performed with them.

Analyses are effective tool for improving financial reports and consequential result in more informed decision making (Kayser & Blind, 2017). De Mauro, et el. (2016) argued that voluminous data analysed are generated both from the physical world (activities of space, biological, nature, etc.) and human environment (health, economic, social etc.). Sun, et al. (2018) defines big data analytics as method of collecting, organizing, sorting and analysing voluminous data. The analytics result in discovery and displaying patterns, knowledge and intelligence including other information. Kaya and Akbulut (2018) described big data analytics as science or technology examining, summarising and inferring conclusions. Big data analytics have experienced developments; these include among other the challenge generated with the constant uncertainties of data besides the informational value. De Mauro et al. (2015) argue, data analysis could be more might accurate, and could be characterised by high velocity, variety and volume that required special technology and analytical methods for its change into information.

Currently, data analytical symbolise the datasets categorised by comprehensive and consolidated data resulting from numerous sources having real time availability and analytical methods based on leading-edge maintenance and techniques (De Mauro et al., 2015). Big data are different in two ways; firstly, data volume determines choice of analytical process employed. Secondly, the machine learning method that generate patterns, analytics and correlations (Hilbert,

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2016). Big data analytical processes involve application of mathematics, simulation, optimization, statistics, accounting, amid other techniques. Accenture (2013), noting that data analysis helps in capturing data value. Big data provide numerous prospects that probably may result to unique insights in to the business world; it also presents a different approach in obtaining and analysing data in comparism to traditional method. Data analytical processes are big data-driven in enhancing financial reports leading to productivity and growth. The analytical process impacts positively on all economic sectors resulting in improve logistics, supply chain, product development and consumer (McAfee & Brynjolfsson, 2012).

Big ,Ahmed 45,Ebi 56,,Ekos 100, Sunday 150,mama 60 Blessing 15,,Rent 80,,Calabar 310,sule 80 =Bank 900 , Udo 21Data and Qualitative Characteristics of Accounting Information.

IASB (2008); Financial Accounting Standards Board [FASB] (2008) jointly identified qualitative characteristics by way of enhancing and fundamental (Herath & Albarqi, 2017). Al-Dmour et al., (2018) opined attributes of accounting information include faithful representation, comparability, relevance, verifiability, understandability and timeliness. Achim & Chis (2014); Beest, et al. (2009) argued that faithful representation and relevance are enhanced by timely, understandable, comparable and verifiable. Enhancing characteristics can only produce valuable information to stakeholders if financial reports are categorised by fundamental characteristics (Kythreotis, 2014). Relevance is connected to usefulness, which can be determined through financial reporting usage by stakeholders (Herath & Albarqi, 2017). Relevance of financial reports is capability of financial statements in making a difference when used in making decision by stakeholders (Kythreotis, 2014). Relevance determines whether a piece of information is useful or not, this can be determined if omitted or incorrectly portrayed can affect stakeholders' decisions (Kythreotis, 2014).

IASB (2008) posit that faithful representation refers to economic or efficient phenomena of financial reports which, represent that information is free from material error, complete and neutral. Faithful representation makes financial report more accurate (Beuselinck & Manigart, 2007). Faithful representation is measured using verifiability, neutrality, completeness and material error freedom (Jonas & Blanchet, 2000). Difficulties are usually encountered in the cause of measuring faithful representation. However, proxies closely related to fundamental economic constructs are used. Yonuis (2020.b) argued that information provided from analytics makes accounting information have faithful representation, neutral, verifiable, reasonably free of error and bias. Verifiable is how it analyses internal information like phone calls, discussions and online meetings which are impossible analysis using traditional methods. Verifiability increases the credibility of financial reporting and also making it more relevant (Ejuvwiekoko & Solomon, 2017).

Timeliness is the likelihood that information meets with its usefulness (Achim & Chis, 2014). IASB (2008) defined timeliness as the time information requires to be revealed without it losing its capacity to influence decision making. Natural logarithm is used in measuring timeliness (Beest et al., 2009). Logarithm naturally is total number of days between year ended

ISSN: 2811-1710 (Paper), ISSN: 2811-1729 (Online) Vol 6, No 2, Pgs 50 - 66: 2026

and date auditor signs the report for that year end is calculated. Usually, companies receive scores between 1 and 5 in timeliness measurement. Yonuis (2020.2) noted that since financial component has been gathered using data analysis merging of financial and non-financial using structure and semi-structure and unstructured components aim at transforming data into useful information.

Understandability is capability of presenting information concisely and clearly. This is achieved through well-organized information reports (Beest et al, 2009). Understandability can be measured in the financial statements using five items as to make information clearer and transparent (IASB, 2006; Jones & Blanchet, 2000). These five items are firstly, well characterised and well classified information. Secondly, is well disclosed information in income statement, cash flow and balance sheet. Thirdly, glossary used in explaining technical words that are unavoidable in the graphic and tabular formats. Fourthly, is combination of words and statements for clarity. Lastly, for clearer understanding, tabular formats and graphic should be employed. Lattabi (2018) stated that big data analysis enhances financial reporting quality resulting in value creation aimed at economic development, stimulating growth, streamlining decision- making, growing productivity and product quality. Aldridge (2019) established that big data analytics aids improving financial report. Researcher therefore considers big data analytics improves comprehensibility of accounting information. Younis (2020. 2) views big data analytics result in refining understandability and content of financial reports

Comparability in accounting information is a characteristic which recognizes similarities or differences between alternative economic phenomena (IASB, 2008). It involves comparing and choosing between alternatives (Achim & Chis, 2014). Al-Dmour et al. (2018) argued financial statements preparation may be similar in some situations which present same result or some cases may defer and present different result. Comparability can be defines as ability to relate an item to consistent accounting procedures and policies of another organisation. Younis (2020,2) argues that big data analytics improve comparability of firm's or sectors, for more than one financial year and among related sectors in other to accommodate financial information through data analysis. Big data analytic is a blessing to all sectors as it improves working efficiencies, evaluate risks and ascertain advantages and weaknesses (Faye, 2016). Big data analytics leads to improvement comparability financial reports.

Verifiability is the harmony between what information represents and what it ought to represent (Ejuvwiekoko & Solomon, 2017). It also indicates that measurement has no bias and errors free (Achim & Chis2014). Verification is an assurance to stakeholders that information truly represents what it ought to represent. Big data enhance the variability of data thereby improving its information quality.

Qualitative characteristic can be measured in three ways: firstly, by operationalising predictive values of earnings by predicting future earnings from past earnings (Schipper & Vincent, 2003). Secondly, predictive values, are measured using annual financial reports depending on disclose information as it relation to companies' risks and opportunities, either financial or non-financial, in predicting future earnings (Jonas & Blanchet, 2000). Thirdly,

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company's fair value measurement, prior study such as Schipper and Vincent (2003) used historical cost and fair value in dealing with projecting of financial value. Achim and Chis (2014) and Beest et al., (2009) are of the opinion that information have the capacity to make a difference, only if it possesses confirmatory, predicative or both values. Predicative value is firms' ability to forecast cash flow using historical or past earnings (Schipper & Vincent, 2003).

IASB (2008) argued that information had predictive value if the value possessed the input that could predicate future expectations by the capital provider. Information has confirmatory value if its expectation conforms to present value based on prior evaluation (Beest et al., 2009). Achim and Chis (2014) and 4Beest et al., (2009) are of the opinion that information have the capacity to make a difference, if it possesses confirmatory, predicative or both values. Predicative value is firms' ability to forecast cash flow using historical or past earnings (Schipper & Vincent, 2003). IASB (2008) argued that information had predictive value if the value possessed the input that could predicate future expectations by the capital provider. Information has confirmatory value if its expectation conforms to present value based on prior evaluation (Beest et al., 2009).

Rezaee, et al. (2018) used financial component of big data (disclosed profits), which were gotten from organized data merged with nonfinancial and unstructured components which include social media, images, social and environmental aimed at analysing and changing data into information with feedback value, timeliness and predictive value. Researchers used time series in analysing data collected between the periods of 1982-1994 thus, predicting the net income for 1995 to 1997. The researchers opine that big data analytics result in improving accounting information relevance.

Data Analysis Implications for Financial Reporting Quality

Younis (2020) argues that accountants must develop skills for data collection, storage, modification, management creation, analysis, reporting, and security. The accountant should be acquainted novel technology used in processing data. Examples of such technologies are cloud computing, artificial intelligence, social media, cybercrime, digital services. The modern use technologies in preparing the company's financial statements thus enhance financial report quality. Donelson, et al. (2017) argued that firms could achieve higher performance if firms' embrace new technological development. Big data techniques enable financial information accessible in real-time, rather than via traditional reports. Other features of real-time handling comprise of varying structures which formally have been collected, processed in various data formats and separately analysed (Gandomi, & Haider, 2015). Big Data have increasing significances for financial reporting as data become accessible from audio, video, text etc. Big data analysis improves accounting quality and its relevance, thus enhancing transparency. Big data analytic allows financial report available in real-time. Younis (2020.2) shows that big data analytics improves accounting information; also it affects financial reports quality positively.

Financial reporting involves large growing data available in different variety and veracity. Technological change is currently rising rapidly, it makes it possible to capture and communicate

ISSN: 2811-1710 (Paper), ISSN: 2811-1729 (Online) Vol 6, No 2, Pgs 50 - 66: 2026

information digitally, on an exceptional scale immediately. Thus, lead to growing emphasis on data, whether unstructured, unstructured or semi-structured. Complete and influential digital information systems are progressively capable of handling, analysing, communicating and giving field back to data-related changes. In respond to the above developments in financial reporting practice and methodology, extant literatures have presented some initial assessment of big data and accounting relevance (Gray & Alles, 2015). Younis (2020.2) noted that big data analytics have affected business environment positively by improving the prediction of profits and risks, growth opportunities, sales, financial fraud, early detecting of weaknesses and strengths and evaluating financial statements. The possible impact of big data on financial reporting quality has been highlighted; however, most of these comments have largely been anecdotal. The debates on how big data analysis could affect reporting quality giving that the research is very much at its nascent stages.

Kaya and Akbulut (2018) stated that accounting information systems have expanded its scope with help of big data analysis. Their studies, they used interview method focusing on accounting professional and academia from different institutes determined and analysed probable effects of big data analytics on financial reporting. Their result shows that there is relation between big data analysis and financial accounting (Kaya & Akbulut, 2018). Based on their finding they concluded that there are interactions between big data analysis and financial accounting quality leading to significant results in their businesses.

Cao, et al. (2015) argued that data analytic provides opportunities for accountants to circumnavigate data at quicker proportion and generate patterns and trends which give more microscopic visualization of risks connected with audited entity, helping in defining level of materiality and improving reporting quality. Brown-Liburd, et al., (2015) opined data analysis give accountants opportunity of resolving issues, such as information overload, identify relevant information etc.

Younis (2020a) argue that big data analytic improves understanding of accounting information content in the yearly financial reports, providing detailed economic unit data, thus increasing credibility of accounting information (Younis, 2020). Though, Krahel and Titera (2015) suggest that shortcomings of uncertainties in judgments can be addressed through incorporating big data analytics formally into accounting standards.

Brown-Liburd, et al. (2015) examined behavioural effects of big data judgements on financial reporting. Issues discussed include overload and relevance of information, ambiguity and pattern recognition. They concluded that with the coming of analytical techniques to replace the traditional accounting techniques have added more value to financial reporting process. Moffitt and Vasarhelyi (2013); Yoon, et al. (2015) argued that big data deal with balancing sources of substantiation for functional audit, noting big data analytic should be appraised according to audit evidence standards and frameworks of reliability, relevance and sufficiency.

Moorthy, et al. (2015) points out that previously traditional methods were used for data analysis used in preparation of financial reports, however, these methods have been replaced by data-driven mathematical models. This gives exact basis for making decision and improves

ISSN: 2811-1710 (Paper), ISSN: 2811-1729 (Online) Vol 6, No 2, Pgs 50 - 66: 2026

financial reporting relevance. Gray and Alles (2015) noting predicative nature, projecting future sales, estimating cash flow, determining raw materials, financial situation and long-term trends. Better forecasting result competitive advantage while accurate data analysis.

Younis (2020a) carried out qualitative study based on interviewing accounting scholars and professionals on big data impact on roles of accountants and accounting profession in future. Their findings shows big data analytic provides relevant, valuable information that aids financial reporting quality, reducing information asymmetry (Younis, 2020a).Many their decisions on pervious orientated and highly aggregated data. Thus, data, when incorporated into financial reporting, will increasingly necessitate management make well informed decision.

Financial reporting quality and Challenges of Data

data analysis faces several challenges include high costs of employing experienced professionals, lack of personnel specialized, velocity of flow affecting financial reporting quality, rationalization of decision- making, processing and storing big data, difficulty in transferring and difficulty in presenting analyses (Younis, 2021). Big data analysis is challenging, time-demanding and requires lot of computational infrastructure for processing data. Other challenges include the anticipated impact of analysis on financial reports, data inconsistency that is caused by huge data, different sources inevitably creating data conflicts (Zhang, et al., 2015). Big Data systems are a variety of various systems which are either partial or full duplications of data. “Overlap” or “gap” or “derivative” data generates problems to data consistency (Zhang et al., 2015). Zhang et al. (2015) denotes three problems in consistencies which are namely: data formats (modification in data structure), data synchronization into organization and data contradiction (that occurs when there are diverse sources).

Second, issue data integrity (Gandomi & Haider, 2015; Ishwarappa & Anuradha, 2015), incompleteness of data resulting from partial or incorrect entry data or records with missing fields or loss of data integrity. In addition, changed may occur to data accidentally due to techniques used in big data environment or on purpose by employees. However, due to complexity of big data environment it is really difficult to reveal data alteration or incompleteness and their causes, which creates several issues in continuous monitoring procedure such as rejection of reliable data (Zhang et al., 2015). Third issue is data identification; it arises from unstructured data. The fourth issue is massive data aggregation which requires corresponding computing power. Additionally, occurrence of large variances may create excessive amount of “red flags” in audit or may decrease proper audit (Gandomi & Haider, 2015). Fifth issue is data confidentiality which is about sensitive, non-public data (Zhang et al., 2015). Big data is a sensitive matter; it requires an enabling environment that will make it possible for data leakage to be identified quickly and addressed data relevant. Hazen, et al. (2014) emphasis the primary challenge in using big data, stating it include the verification of the correctness, reasonableness, completeness, immediacy and data format used. Furthermore, is the issue of difficulty in the usage of big data in financial resulting from lack of qualified personnel (Davenport, 2014). The shortage of expert is a contributing factor why many organisations lack professionals who can reliably explain to management the prospects big data analysis. The slow

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acceptance of big data analysis might not be unconnected with the inability of mangers to comprehend the workings big data technologies. In addition, information overloading has been identified as challenge by Eppler and Mengis, (2004). Information overload generally arises from the combination or limited information processing capacities of mechanism technologies, given that data are available in real-time.

Bhimani and Willcocks (2014) posit that big data might affect firms' cost structures thus, making it impossible for the traditional accounting practices to stand the rigor of the analysis. The evidence from the assumption of traditional accounting practice of activity-based costing which is production-volumes driven. However, business models based on data which are drawing from big data using new technologies dependent on different cost drivers or structures. Therefore, there is need to review applicability of traditional financial reporting techniques (e.g. target costing, activity-based costing, and product lifecycle costing) and modern trend.

Wimmes, et al., (2015) points out that big data might not be sole determinate of financial reporting quality, noting that larger quantities of data may not necessarily lead to better quality. The risk might involve relevant or correct information retrieved from existing data. Quattrone (2016) noted that big data currently poses challenges for accountants and management.

Conclusion

Financial reporting quality is the exactness with which financial information are conveys from firm's operations, it determines the usefulness of information provided. Recently, traditional financial reporting template is paving way for the analytical reporting. Technological era of big data is paving way for new methods of improving financial reporting quality that enhances the world and the business decision-making process. The effective functionality of data comes with consequential insights for improved financial reporting quality. Thus, big data incorporate into financial reporting future real-time or oriented data leading to well informed decisions by stakeholders. It is of importance to note that big data usage leads to positive impact on financial reporting, adding more value to its report, and also making the accountant more effective stewardship. However, academic has lamented the slow into financial reporting.

Though possible implication of big data in relation to financial reporting quality might have been highlighted, most of these comments have largely been anecdotal and the debates on the effect of big data on reporting quality is still evolving though research, it is very much at its nascent stages. More so, there are numerous questions for further research which include investigating various financial accounting practices which might change in this era of big data. How big data analysis might be adapted to novel accounting models? Which practices might be most suitable or appropriate in processing and communicating data generated? Furthermore, there is need to imbibe big data analysis in the curriculum of accounting education at higher institutions. Workshops, training and re-training courses should be established for professionals, academies and researchers on the subject matter. This research is an invitation to further scientific and applied research in big data and its impact on accounting profession.

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