

The Level of Adoption of Web-Based Business Reporting in Selected Manufacturing Firms in Nigeria

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ABSTRACT

The study examined the level of adoption of web-based reporting practices among selected listed manufacturing firms in Nigeria. The population for the study consist of all 90 manufacturing firms listed on the Nigerian Stock Exchange (NSE). Forty five (45) firms were purposively selected. Structured questionnaire was the instrument used in sourcing primary data. The data was analyzed using Principal Component Analysis (PCA). The results showed that the listed manufacturing firms in Nigeria are exploring the possibility of using or adopting fully web-based reporting. The exploration variables has the highest Eigen values of 4.4297784 and 2.0077 among the extracted components. The study however, recommended that law should be enacted to compel companies to adopt web based reporting and that companies should be encouraged to employ Extensible Business Reporting Language (XBRL) in reporting.

Keywords: Web Based Business Reporting; level of Adoption; Exploration Variables, XBRL and Manufacturing

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1. INTRODUCTION

Technology is in no doubt taking over every facets of human endeavors and it is changing business models, business processes and nature of work or jobs. As businesses become more complex so also the reporting requirements. This therefore, requires the managers to contend with the choice of medium of corporate reporting that will be consistent with the achievement of the overall objectives of their businesses in the area of efficiency and effectiveness of the information provided. This is imperative, because, provision of adequate and required information to the stakeholders is considered as the only means of mitigating agency problems in organizations. Studies have shown that globalization, increased in economic and market competition and regulatory pressures are forcing companies to accumulate and publish information regarding financial performance, social and environmental issues, corporate governance, and marketing as well as other information with more frequency, detail and a variety of formats.

Information technology was then seen as a viable platform for corporate reporting as the traditional method of reporting otherwise called paper-based reporting lacks the capability to deal adequately with these dynamisms. Web or internet has become a viable tool for corporate reporting globally but are more practiced in the advanced countries. The absence of strong standards poses considerable challenges for the practice of web based corporate reporting in the developing countries in spite of the prevailing notion of the benefits associated with web based reporting.

It is however arguable that, web based reporting is more desired in the emerging and developing countries now than ever before. The need to attract investors especially foreign direct investment never changed and this is only possible when adequate and required information is provided instantaneously to global audience. Website provides a major platform for firms to communicate to the global audience instantaneously. Web-based reporting in quoted manufacturing firms in Nigeria has been empirically examined by some researchers. Salaudeen, IKHU-Omoregbe, Alayemi and Adeniyi (2016) inquired into the perceptions of major stakeholders towards toward web-based business reporting in selected manufacturing firms in Nigeria. Agboola and Salawu (2012) work on the determinants of internet financial reporting in Nigeria, while Salawu(2009), conducts a study on financial reporting on the internet by quoted companies in Nigeria. However, there is dearth of empirical studies on the level of adoption of web-based reporting in Nigeria. The focus of this study is to examine the current practice of disseminating information through the internet or website instead of the hard copy medium in Nigeria.

2. LITERATURE REVIEW

2.1 The Concept of Web-Based Reporting.

The construct of web-based reporting has been defined or described by various scholars in the field. IASC (1999) define “Web-based business reporting” as “the public reporting of operating and financial data by a business enterprise via the World Wide Web or related Internet-based communications medium”. Salaudeen et al. (2016) also described Web-Based Reporting as involved taking advantage of technology in disseminating business information to stakeholders benefiting from its numerous advantages such as speed, cost effectiveness, and wider coverage. Jones and Xiao (2004) on the other hand described web as a technology with the power to revolutionize external reporting and is becoming increasingly important for financial reporting. Abdelsalam , Bryant and Street (2007), also argued that the internet provides a unique form of corporate voluntary disclosure that enables companies to provide information instantaneously to global audience.

According to Ikenmann and Lenz (2000), the use of the new information technologies has an enormous impact on the standards of availability and diffusion of information, introducing determinant advantages as readiness, low effort, and low cost in communication. Firms that are engaged in Internet corporate reporting attempt to make use of their corporate websites not only to market their products to ordinary consumers or organizational customers (in the case of business-to-business), but also to market the firms themselves, that is, to raise the awareness and interests of shareholders and investors in the firms (Ashbaugh et al. 1999)

2.1.1 Extensible Business Reporting Language (XBRL)

The recent major step in the web based business reporting field was the introduction of Extensible Business Reporting Language (XBRL). A common recognition of the need for a standardized reporting format with the attendant results of a streamlined processes and enormous cost saving actually facilitated the development of XBRL. Software AG (2010), describes XBRL as a data description language that enables the exchange of understandable, uniform business information and that it is based on XML and permits the automatic exchange and reliable extraction of financial information across all software formats and technologies including the internet. While HTML, Microsoft Excel documents, text files, and Adobe Acrobat files are useful for editing, these formats offer no advantage over paper photocopies when it comes to sharing data between applications and users on different computing platforms.

2.2 Theoretical Framework

The study anchored on upper echelon theory , LoTi framework and Diffusion of Innovation theory in examining the level of technology implementation by listed manufacturing firms in Nigeria.

2.2.1 The Upper Echelon Theory

The upper echelon theory was first used by Hambrick and Mason (1984) to explain the belief that the characteristics of senior management, or the upper echelon of an organization, can influence the decisions made and practices adopted by an organization. They argued that managers' characteristics (e.g., demographic) influence the decisions that they make and therefore the actions adopted by the organizations that they lead. They suggest that this occurs because the demographic characteristics are associated with the many cognitive bases, values, and perceptions that influence the decision making of managers. Relying on this theory, the characteristics of the upper echelon is belief to influence the decision they make and therefore the extent to which internet is employed in corporate reporting.

2.2.2 Levels of Technology Implementation (LoTi) Framework

Examining the level of technology implementation has been a key interest since the early days of information technology. Interaction between humans and computers is affected by quite a number of human factors and its characteristics to which studies have come up with theories and models to investigate factors that influence humans to use computer and its applications (Whitley, 1997). **Levels of Technology Implementation (LoTi) Framework** by Moersch (1995) is one of the prominent models for studying the level of technology implementation. Ever since its inception, the model has been assessed using different applications, and it has become a de-facto for measuring the level of technology implementation. The framework was originally employed to provide a fair approximation of teacher behaviours in relation to technology implementation. Moersch (1995) used self-efficacy theory to advance the framework. The self-efficacy theory suggests that individuals with a low level of self efficacy will often choose a level of innovation that they believe they can handle, which may or may not be the best or most effective option.

This study relied on self-efficacy theory as put forth by Moersch (1995) to examined the level of adoption of web based reporting. The study proposed that the level of adoption of innovation (i.e. web-based reporting) is a function of self-efficacy or technical competence of management. Individual managers and others responsible for corporate reporting will often choose a level of innovation they believe they can handle. Therefore, managers with low level of self efficacy will choose a lower level of innovation and vice versa.

2.2.3 Diffusion of Innovation Theory

The theory as originally used by Rogers (2003), puts that an innovation progresses through different communication channels over time among the members of a social system. Individuals are observed as having different degrees of willingness to adopt innovations and the portion of the population adopting an innovation is approximately normally distributed over time. In summary, an individual's decision about an innovation is not an instantaneous act. Rather, it is a process that occurs over time and consists of a sequence of actions.

The theory proposes that, there are five determinants of the rate of adopting an innovation as follows.

- a. Relative advantage: the degree to which an innovation is perceived to be better than its precursor.
- b. Compatibility: the degree to which an innovation is perceived to be consistent with the existing values, needs and past experiences of potential adopters.
- c. Trialability: the degree to which an innovation may be experimented with before adoption.
- d. Observability: the degree to which the results of an innovation are visible to others.
- e. Complexity: the degree to which an innovation is perceived to be difficult to use.

Determinants (a) to (d) above are generally positively correlated with the rate of adoption, while determinant (e) is generally negatively correlated with the rate of adoption.

2.3 Empirical Review

Ashbaugh et al. (1999) performed a survey of 290 listed firms in the U.S. Their survey showed that firms engaging in Internet financial reporting generally have reputations for excellent corporate reporting practices. In addition, whilst 70% of the firms engaged in Internet financial reporting, there was substantial variation in the quality of their Internet financial reporting practices. This study, however, has extended the research focus from Internet financial reporting to Internet corporate reporting and, hence, considered a broader perspective compared to previous work. In addition, Wong and Poon (2008) discussed in detail the related control issues that arise when a firm attempts to use its corporate Website to fulfill the requirement of Regulation Fair Disclosure. This initiative was specifically introduced by the U.S. Securities and Exchange Commission to prevent selective information dissemination or actions that might benefit one investor over another. Mehrtens et al. (2001) constructed a model of Internet adoption by small and medium enterprises based on evidence from 10 firms. Their study concluded that three factors significantly affect Internet adoption by these firms: perceived benefits, organizational readiness and external pressure.

3. RESEARCH METHODOLOGY

The thrust of this study is to examine the level of adoption web in corporate reporting in Nigeria. The target population comprised all 90 listed manufacturing firms in Nigeria. Structured questionnaire were the instruments used in data gathering. A sample of 45 firms were purposively selected. The accessible population consists of the preparers of financial statement and the information technology experts in the sampled manufacturing firms. The preparers of financial statement and information technology experts were selected because they have an in-depth knowledge and information with respect to their firms usage of information technology in information dissemination. The questionnaire was constructed using validated scale in the field. Specifically, Level of Technology Implementation (LoTI) Framework by Moersch (1995) was adopted in designing the questionnaire. Principal Component Analysis (PCA) was the method of analysis used.

3.1 Data Analysis

The data were analysed using Principal Component Analysis (PCA). Cronbach's Alpha test was conducted to test the internal level consistency and reliability. There is no specific benchmark value for the alpha coefficient, but a higher value indicating a higher degree of reliability is expected (Gravette and Forzani 2003). In this study, a reliability coefficient of 0.65 was used as a benchmark for acceptability. The Cronbach's Alpha(α) reliability test scores is 0.8027 as presented in the table 1 below. This implies that the internal consistency level of the research instrument for the study is of acceptable level.

Table:1 Cronbach Alpha Test

Level of adoption and practice of web reporting	
Average interitem correlation	0.1400
Number of items in the scale	25
Scale reliability coefficient	0.8027

3.2 Sampling Adequacy of Variables and appropriateness of use of Factor Analysis

To determine the appropriateness of the use of Principal Factor Analysis (PCA), Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity (BTS) were employed. According to Field (2005), PCA requires that the KMO measures of sampling adequacy be greater than 0.50 for each variable as well as the set of variable. Principal Component Analysis also required that the probability associated with Bartlett's Test of Sphericity be less than the level of significance Field (2005). The overall KMO measure of sampling adequacy as shown in table 2 below for the set of variables included in the analysis was 0.737 which is considered satisfactory.

The Bartlett's Test also showed a P-Value of (0.000) which is less than the level of significance of 0.05. This implies that the use of factor analysis is appropriate and the sampling is adequate.

Table: 2 KMO & Bartlett's Test

Kaiser-Meyer-Olkin (KMO) Measures of sampling Adequacy	0.737
Bartlett's Test of Sphericity Approx Chi-square	1419.243
Degree of freedom (diff)	300
P-Value (Sig)	0.000

4. RESULTS AND DISCUSSIONS

Based on the results of Horn's Parallel Analysis and in recognition of Kaiser's criterion, Five components were retained because they have an adjusted eigenvalue > 1 as presented in table 3. In addition to the analysis of eigenvalue, an inspection of the Scree Plot of eigenvalues also gave a useful insight to the relative importance of each factor or item.

The five (5) principal components are:

- (i) Exploration: I seek major modification of present innovation to achieve increased impact in web reporting (with adjusted eigenvalue 4.4297784);
- (ii) Exploration: web is employed either as extension activity or enrichment exercise to business reporting (with adjusted eigenvalue 2.0077285)
- (iii) Non-Use: I have little or no knowledge of web-based reporting (adjusted eigenvalue 1.57);
- (iv) Non-Use: I am doing nothing to involve in web based reporting(1.2966497); and
- (v) Awareness: I am aware of what technology can do for my company in the area of reporting.

The results as presented suggested that manufacturing companies in Nigeria are at the exploration level/stage in web-based reporting. This is because exploration has the highest adjusted eigenvalues of 4.4297 and 2.0077 among the extracted components. By implication, manufacturing firms are exploring the possibility of infusion or total adoption of web based reporting. They are currently seeking modifications of present innovation to achieve increased impact in web reporting. Consequently, web is employed either as extension activity or enrichment exercise to hard copy business reporting model.

Table 3: Results of Horn's Parallel Analysis for Principal Components.

Component	Adjusted Eigenvalue	Unadjusted Eigenvalue	Estimated Bias
1	4.4297784	5.2557141	.82593572
2	2.0077285	2.7290731	.72134459
3	1.5741085	2.1223771	.54826856
4	1.2966497	1.7301438	.43349409
5	1.1112094	1.4593518	.34814239
6	.96526471	1.275442	.31017733
7	.94827479	1.1502392	.20196438

Criterion: retain adjusted components > 1

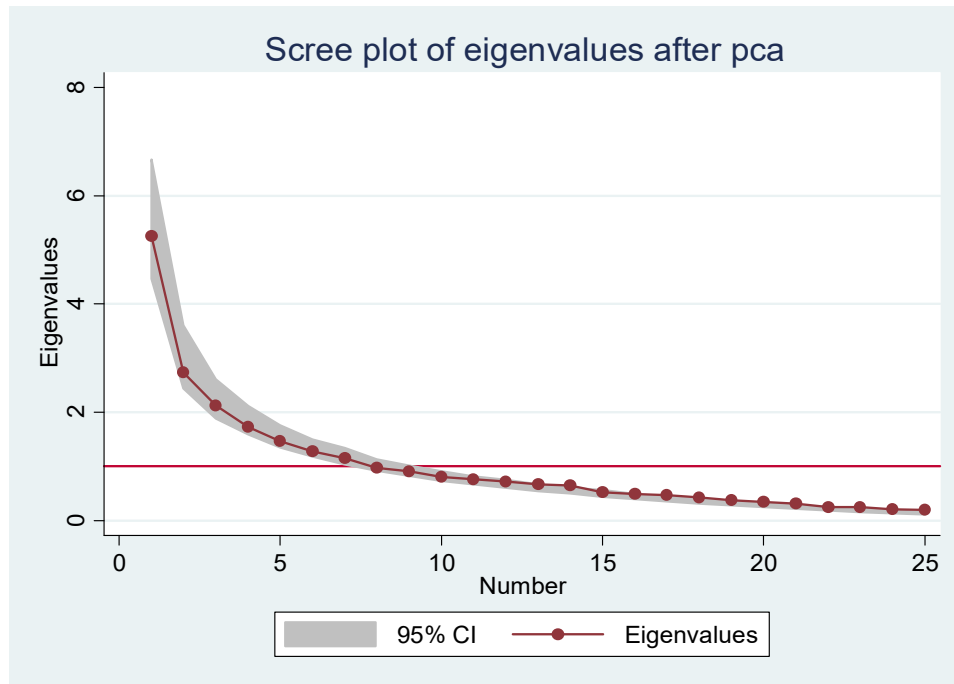


Fig. 1: Screen Plot of Eigenvalues after PCA

5. IMPLICATIONS FOR PRACTICE

The findings of this study provides some implications for the stakeholders of listed manufacturing firms. Since investors need timely and adequate information instantaneously for investment decision making, it however becomes imperative for managers to seek for a means of satisfying the information need of the investors and other stakeholders. Web based reporting is the economical means of achieving this. Also, the need to reduce agency problem arising from information asymmetry never changes, using web in corporate reporting will help to reduce the agency problem and increases stakeholders confidence in the firm. In addition, adopting web in reporting is cheaper and more efficient that the traditional hardcopy method. Managers should take advantage of web based reporting to enhance their performance.

6. CONCLUSIONS

From the analysis of the data collected and its interpretations, the study concluded that, listed manufacturing firms are yet to fully infuse web in their corporate reporting. The firms still adopt hard copy reporting model while using web as extension activity or enrichment exercise. The technical knowledge or level of efficacy of either the managers or other concerned stakeholders, the characteristic of the upper echelon and the absence of standard are the factors for the current level of adoption.

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