

## **DATA QUALITY AND ORGANIZATIONAL SUSTAINABILITY IN A DYNAMIC GLOBALIZED ECONOMY**

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### **ABSTRACT**

The collection, representation, and effective use of organizational data are important to a firm because these activities facilitates the increasingly important analysis needed for business operations and business analytics. Poor data quality can be a major cause for damages or losses of organizational processes and sustainability. The many tasks that individuals perform within an organization are linked and normally require access to shared data. However, in such a connected setting, the differences among individuals in terms of their preferences for data attributes such as timeliness, accuracy, and others, can cause data quality problems which may potentially and negatively influence organizational sustainability. Data quality is a major issue in today's world. Many organizations have remained uncompetitive due to the nature of the data contained within their databases. Some organizations are failing as a result of inaccurate, modified, or incorrect data that is contained with organizational records. Still others are losing customers and clients, and yet others are the subject of malicious lawsuits based upon inaccurate decisions and subsequent actions derived from inexact, modified, or missing data. This paper has elaborately discussed the concept of data quality and its influence on organizational sustainability with its proxies as institutional, financial and moral sustainability. Based on the findings obtained from the review of literature, the authors concluded that data quality significantly influence organizational sustainability and recommended that Nigeria organizations should regularly insist on data quality management and innovation in other to evolve successful decisions that can improve their business sustainability.

**Key Words:** Data Quality, Institutional, Financial, and Moral Organizational Sustainability

### **INTRODUCTION**

Today, due to the digital age, data have become omnipresent in private, commercial political and scientific environments. Computing underwent drastic transformation within the past 40 years: until the 1980s, centralized data centers gathered data and were business-orientated, and by 2000, data centers expanded their data management capabilities, and individual users increasingly had access to a private computer and the World Wide Web (WWW) (Reinsel, Gantz, & Rydning, 2017). Since 2000 and with the increasing spread of the internet, data centers have expanded their capacities to cloud computing, resulting in considerably increased amounts of data collected and available (Reinsel, Gantz, & Rydning, 2017).

Data quality refers to as the degree to which the data of interest satisfies the requirements, is free of flaws, and is suited for the intended purpose. Data Quality is usually measured utilizing several criteria, which may differ in terms of assigned importance, depending on, e.g., the data at hand, stakeholders, or the intended use.

Databases represent powerful capabilities that are designed to track a host of different organizational records, which often include information regarding employees, transactions, finance, inventory, client history, supplier inventory, customer bases, and even internet interactions. Databases have become such an important aspect of organizational activity that without them, many organizations would cease to exist, and the veracity of others (including governments) would be greatly impacted. Why then, does so little attention appear to be given to ensuring the quality of data that is stored in a database? It is important for organizations to monitor the well-being of its workers, and take steps to improve their data quality and integrity (Wahed *et al.*, 2013).

Poor data quality could have a devastating impact on the social and economic well-being of nations if not properly checked. (Diener & Seligman, 2020). The need for organizations to improve data quality with adequate strategies, approaches, techniques, and tools to ensure the reliability of data collection is very important. Several organizations within and outside Nigeria are rendering better products and services with the introduction of information technology (IT), total quality management and data quality (Wahed *et al.*, 2013).

It is important for Nigerian organization to have reliable and quality data for business growth and accurate decision-making. Technological advancement has created a higher demand for IT managers to improve strategies to ensure reliability in data collection (Wang & Strong, 2015). These demands and pressures have placed a renewed focus on quality improvement for long term survival of organizations. The use of unreliable and unrealistic data in most developing countries has resulted in the problem of inaccurate distribution of resources for national development. Decisions made with the use of unreliable data could result to serious setbacks in the economic growth of a nation and could most time, lead to poor organizational resilience (Chukwu *et al.*, 2014).

Access to accurate, reliable, consistent, and timely data is crucial for decision making and resource allocation (Grabowski *et al.*, 2016). High quality and reliable data is the key to growing an economy, making quality decisions, reducing poverty, and increasing shared prosperity. Way's (2015) report on the United Nations Millennium Development Goals showed that 61% of Sub-Saharan African countries lacked adequate data to monitor poverty trends and efficient business management. Some African countries like Nigeria, Cameroun and Ghana who are aware of the power of data for decision making and organizational resilience still lack accurate data. Lynch *et al* (2020), opined that these countries encounter challenges along the way, including barriers to data quality in terms of accuracy, completeness, consistency, and relevancy.

Against this backdrop, this paper is designed to theoretically explore the influence of data quality on organizational sustainability. A conceptual framework showing the major variables of the study is depicted in figure 1 below.

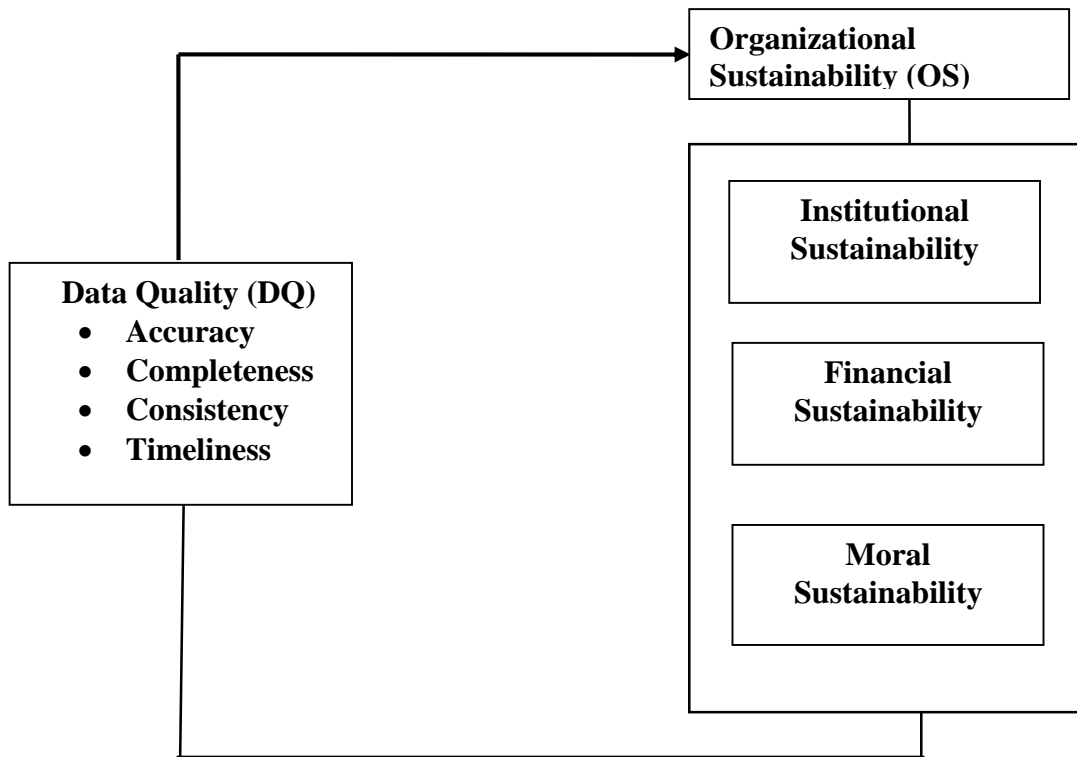


Figure 1. Conceptual framework of the influence of Data Quality on Organizational Sustainability

Source: Joseph, B.C. (2022). *Organizational Sustainability: The three aspects that matters*. Academy of Educational Development Washinton DC

### NATURE OF DATA QUALITY

The word data is the plural form of the Latin noun datum (verbatim “something given”) (Lexico English Dictionary, 2022). In general, data is “information, especially facts or numbers, collected to be examined and considered and used to help decision-making, or information in an electronic form that can be stored and used by a computer” (Cambridge Dictionary, 2022). Data is defined as “factual information (such as measurements and statistics) used as a basis for reasoning, discussion of calculation.” The meaning of the word has expanded through technology to be more encompassing and is now inclusive of anything that can be stored in digital form, on a computer. Conversely, the word quality has multiple origins, among others, from the Latin noun qualitas (verbatim characteristic, nature). According to International Organization for Standardization. (2015). quality is the “degree to which a set of inherent characteristics of an object fulfills requirements.” Nevertheless, the requirements remain undefined at this point. Therefore, in our context, quality broadly refers to the extent of the goodness of a thing (for instance, our data).

Notably, data quality is, in essence, understood as the degree to which the data of interest satisfies the requirements, is free of flaws, and is suited for the intended purpose. Data

Quality is usually measured utilizing several criteria, which may differ in terms of assigned importance, depending on, e.g., the data at hand, stakeholders, or the intended use.

With the explosion of the amount of data being captured within organizations, stored in data warehouses, and mined for competitive use, maintaining the quality of the data supporting business decisions continues to be important, but very difficult. High-quality corporate data has become a prerequisite for world-wide business process harmonization, global spend analysis, integrated service management, and compliance with regulatory and legal requirements. Indeed, poor data quality can be a major cause for damages and losses on organizational processes. Furthermore, data management incurs various associated costs with its acquisition, storage, security and maintenance at appropriate quality levels. At the same time, modern business trends are increasingly focusing on data mining and business intelligence as tools for competition due to declining costs of acquisition and storage and sophisticated data analysis techniques.

Although data quality is traditionally considered in terms of information systems, it is also an organizational issue (Michener, 2015). Within information systems, data quality has been regarded as multi-dimensional including, for example, dimensions of data quality: accuracy, completeness, consistency, and timeliness (Wang & Strong ,2016, Kahn, *etal* 2012). Information systems efforts are often aimed at measuring, quantifying and developing guidelines for measurements on these four dimensions. The primary issue with this approach is that data quality is treated as an ‘end’ goal in itself, rather than as a ‘means’ to achieving organizational objectives. The importance of the organizational perspective has been recognized for a long time. McCausland, (2021) defines data quality as the measure of agreement between the data views presented by an information system and that same data in the real world. Michener,(2015). argues that the quality of data should be accurate enough, timely enough, and consistent enough for the organization to survive and make reasonable decisions (McCausland, 2021)

### **CONCEPT OF ORGANIZATIONAL SUSTAINABILITY**

Decisions, which Top-managers have to take, are very important since they primarily affect the long-term future of the entire organization. To carry out their jobs effectively; they base their decisions on accurate, timely, reliable, information system, relevant to the variables needed to make the decision. Manager’s decision making ability can lead to the company’s success or failure and this is heavily dependent on the quality of data available to the organization. According to Lugli and Bertacchini (2020), in modern organizations, organizational sustenance and longtime survivalist strategies are increasingly managed with the availability of relevant and quality data. systems of rules to reduce the risks in business management.

Organizational sustenance is a function of efficient data generation, quality and management and available information to support their choices, that is, information of a qualitative and quantitative nature (Smith, 2015). Smith further posits that the largest amount of data, in real-time, can help decision-makers to make the best choices, hence enhancing organizational sustenance. Therefore, to make an effective decision, the decision-maker must recognize and assess the problems, process all essential information, select the best strategy and finally make a decision (Akdere, 2011). However, one of the important assumptions in the decision-making process is the existence of quality and timely financial information, so the information system data quality represents an important tool both for information quality and in the decision-making process (Soudani, 2015. Patel, 2015).

The decision-making process should include procedures that ensure the achievement of corporate objectives effectively and efficiently and contribute positively to organization performance. Literature suggests that Decision-Making Success and organization performance depend on several factors, which supports the contingency theory. According to contingency theory, a company's success "depends on the fit between organizational context and structure" (Cadez, Guilding, 2018). For this applied theoretical lens, there is no universal method for a company to succeed because each company will depend on and conform to its various economic, social, and physical environments. Decision-making is subject to contingencies that vary according to the business environment in which the company operates (Akdere, 2011). Thus, the deposit money banks and other business organization are always dependent on numerous internal and external factors that will be fundamental to a good organization's performance. According to contingency theory, organizational effectiveness depends on a fit between the type of technology, environmental volatility, the organization size and structure, and its information system (Islam, 2012).

### **DATA QUALITY AND ORGANIZATIONAL SUSTAINABILITY**

Data quality characterizes the whole business process rather than just the data found in corporate databases. Each step in the process, from data capture to processing for decision support, has an impact on the final quality of the data. This creates interdependencies in the organization where the net value that an individual or department receives from data quality depends upon the choices of others. The result is a source of data quality management problems in an organization. The quality of data available to an organization determines the level of business success that will be achieved. This is one of the reasons why data quality generation is an integral part of an organization. Data serves as a guide for meaningful decision making for all decision-makers. Data is the track upon which business decisions ought to move. For a firm to compete favourably in any industry, it must recognize the importance of data gathering and data analysis. These will no doubt help to improve the productivity and effectiveness of the business (Houhamdi & Athamena, 2018).

All organizations rely on different decisions to drive their operations, and their performance is dependent on the effectiveness of their choices in regards to the quality of data generated. It is for this reason that large firms strive to achieve enhanced data quality and integrity. Effective decision-making demands precise and accurate strategies that would produce maximum success at all times; and the quality and outcome of the decision success depends heavily on the quality of generated data (Ammeh, 2013). Macharia *et al* (2015) examined the effects of data quality on logistics firm's performance in Nairobi Kenya to ascertain its significant impact on their operations in order to guarantee their profitability and growth. The target population was logistics firms within Nairobi County. Data were collected from 10 firms in the logistics industry suppliers in Nairobi. The data were analyzed using Regression Analysis with the aid of SPSS and the results of the analysis showed a high significant relationship between data quality and Logistics firms' performance.

Similarly, Meshach, Emelia and Samuel (2019) carried out a study assessing the effects of data integrity (DI) on decision making effectiveness using Unilever Ghana Limited as case study. Frequency distribution was used to analyze the data which revealed that there was a positive relationship between data quality and organizational sustainability in unilever Ghana Limited. Based on the forgoing discussions and from the review of relevant and empirical literature, it

appears that there is an influence of data quality on organizational sustainability and on the strength of the above assertion, the authors hypothesize as thus:

**H<sub>A1</sub>:** There is a significant influence of data quality on organizational sustainability

### CONCLUSION

Integrity is the most potentially volatile part of the success of any database. A well-designed and maintained database (by the users, programmers, and management) can ensure key domain, and referential integrity. Accessibility and network security tools are very important aspects of data management activities. However, an understanding of viruses, malware, and other issues that threaten the integrity and security of databases, on the part of the users, may be a primary means of ensuring data integrity. The ability to plan and perform proactive manoeuvres is paramount and essential for success of today's businesses. Making all users aware of and skilled at implementing such manoeuvres will be a challenge for every organization. Effective decision-making demands precise and accurate strategies that would produce the desired results.

This paper has sumptuously discussed the concept of data quality and its influence on organizational sustainability with its proxies as institutional, financial and moral sustainability. Based on the findings obtained from the review of literature, the authors concluded that data quality significantly influence organizational sustainability and recommended that Nigeria organizations should regularly insist on data quality management and innovation in other to evolve successful decisions that can improve their business sustainability.

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