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RESEARCH ARTICLE

DIGITALIZATION OF ACCOUNTING THROUGH INFORMATION TECHNOLOGY, BIG DATA AND ARTIFICIAL INTELLIGENCE

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ABSTRACT

The study concentrates on the Digitalization accounting system through Information Technology, Big Data and Artificial Intelligence. The study examines the relationship between accounting system and Information technology, Big Data and Artificial Intelligence. The data has collected to achieve the objectives through the questionnaire. To achieve the objectives of the study, the data collected from the questionnaire are presented and analyzed using descriptive statistics. Correlation matrix is applied to determine the relationship between variables and least square regression to test the hypotheses using SPSS. From the analysis it is revealed that there is a positive insignificant relationship between accounting system and Information technology. There is no significant relationship between accounting system and Big data and Artificial Intelligence. Information technology should improve the accounting system. The Big data and Artificial Intelligence should reduce the operating cost.

INTRODUCTION

Digital transformation of accounting is one of the major aspects to witness the changes throughout the globe. Digital accounting refers to the introduction of aspects with technology. Digitalization has a major role in changing the accounting system with an innovative processes. Accounting is one of the industries that will have evergreen growth worldwide. Digital technologies includes Information Technology, Big Data, and Artificial Intelligence. The study focuses on "Digitalization of Accounting Information on Business". The present study is to examine the relationship between Accounting System and Information Technologies; and to investigate the effect of Big Data on Accounting System, and lastly, to examine the influence of Artificial Intelligence on processing Accounting Information. To achieve the objectives of the study, the data collected from the questionnaire are presented and analyzed using descriptive statistics. Correlation matrix is applied to determine the relationship between variables and least square regression to test the hypotheses using SPSS.

Objectives of the study

The main objective of the study is to examine the effect of digitalization of accounting information on business.

- To assess the significant relationship between Information Technology and Accounting Systems in business.
- To determine the effect of Big Data on accounting system in business.
- To examine the impact of Artificial Intelligence in processing the accounting information.

Hypotheses: Based on the objectives the following hypotheses are formulated

H01: There is no significant relationship between accounting information and Information Technology in the business.

H02: There is no significant relationship between accounting information and Big Data in the business.

H03: There is no significant relationship between accounting information and Artificial Intelligence in the business.

Significance of the study: In the present study, objectives and findings will have a practical relevance. First, it will provide a deeper understanding of the effect of the digitalization of financial information on the business. And take appropriate steps to improve its effect.

Secondly, the findings of the study will help the business to make amendments to the e-environment in the business. It will help the top management to reflect more on the purpose and benefits of digitalization of accounting information with business performance. Finally, the findings of this research will add the knowledge in the field of digitalization of accounting in business.

Operational Definition of Terms

Performance: It is how effective someone or something is doing a good job. It is the task or operation how successfully it is performed.

Organizational Performance: Organization performance is used in this study the outcome of the activities in the organization effectively.

Information Technology: refer to the usage of computers, storage of information, networking and other physical devices to processes the data.

Digitalization: Conversion of information from physical format to digital one.

Accounting System: It is the format in which the business organization records and reports all financial information.

Software: Software is the program used to process the data.

Review of Literature

Accounting System: Accounting System is a format in which company records and reports the financial information. Accounting system explains the techniques, standards and strategies followed by a company to record and report the business transactions and other financial activities which took place for a specific period (Taiwo, 2016). System consists of individual or set of machines related to achieve the objectives. Therefore, according to Taiwo (2016) accounting system is the art of keeping and managing the financial information in the organization. Accounting system is referred as “an organized set of both computerized and manual accounting procedures, methods and controls set up to perform the functions of gathering, recording, classifying, analyzing, summarizing, interpreting and presenting timely and accurate financial information for business decision making” (Business Dictionary). Anonymous (2015) identified accounting systems under three categories based on the size of the organization, nature of the business, management style and extent of digitalization of an organization. Accounting system also includes the manual system of accounting, legacy system and computerized system. Computerized system is an integrated information technology system. Both hardware and software will be used for accounting process. Computerized system associates with high cost (Taiwo, 2016).

Digitalization: Digitalization and Digitization are commonly used by scholars and other professional and practitioners. Unruh and Kiron (2017) cited in Duong and Fledsberg (2019) there is no consensus meaning of the term by adding “Digital Transformation”. According to Unruh and Kiron (2017) digitalization is the process of converting information into a digital format. Digitalization concerns the innovation of business processes and models that feat digital opportunities. While digitalization gives exploitation of digital opportunities (Rauter, Müller, Vorraber & Schirgi., 2018), digitization communicate analog data into digital sets (Gbadegeshin, 2019; Unruh & Kiron, 2017). However, the study focuses on the effect of digitalization of accounting information on business. Brgyen (2016) explains the strategic gap between digitalized and non-digitalized business organizations. The non-digitalized organizations should formulate and implement innovative strategies and should be digitalized. Kane et al. (2015) cited in Bygen (2016) explained that digitalized companies train their employees how to use digital methods and procedures effectively with the skills and ideas. It helps the stakeholders in time saving process of searching the financial information.

Digital system helps in communicating the companies’ information in digital format and helps the stakeholders. It also helps to trace and visible through the real-time data collected (Kane et al. 2015). The organizations should create end-to-end strategies to develop the models and strategies.

Information Technology: it is the transfer of data stream from development stage to usage stage with the help of PC’s and information communication technology. Information Technology is a set of tools, processes and methodologies employed to collect, process and disseminating information (Businessdictionary.com). Information Technology includes coding, communicating, processing, storage and retrieval, system analysis and control. According to Taiwo (2016) information technology is a wide term all alone with a scope of different definitions. It gives the clarification on the utilization of electronic gadgets and technology to collect data. It also involves in process of computing. Information Technology (IT) and Information Communication Technology (ICT) have large scope like incorporation of telecommunications and integrated communications.

Artificial Intelligence: Artificial Intelligence (AI) main objective of the business has been anticipated to overtaken by Artificial Intelligence due to its cost and time saving and operational effectiveness (Chukwudi, Echefu, Boniface & Chukwuani, 2018). Artificial Intelligence is purely a man-made and non-natural entity. It is a branch of computer science deals in reproduction of human level of intelligence, knowledge, self-awareness and conscience in computer programs (Businessdictionary.com). Artificial Intelligence can be defined as “either a suite of programs or individual program that can replicate certain facets of human behavior and engagement in some situations” (Smith, 2018: 242). According to Smith (2018), many most of the accounting tasks has become more automated with the integration of Artificial Intelligence. It helps the accountants to spend less time compared to conventional accounting work. On a contrary, Chukwudi et al (2018) accountants’ role and data analytics takeover by machines and most of the accountants will be losing their jobs.

Big Data: Digitalization resulted with a new accounting concept as Big Data. Big Data affects in several ways of accounting which influence the organizations how to conduct their business and preparation of financial statements and their audit. According to Apache Hadoop “Big data is a dataset which could not be captured, managed, and processed by general computers within an acceptable scope”. It is very difficult to define precisely, it is not defined by a set of technologies, and on the contrary, it is a category of techniques and technologies. Liu and Vassarhlyi (2014) opined that big data have a significant effect on the decision making quality process, with an improvement in measuring and comprehensive of data, and enhanced understanding of information.

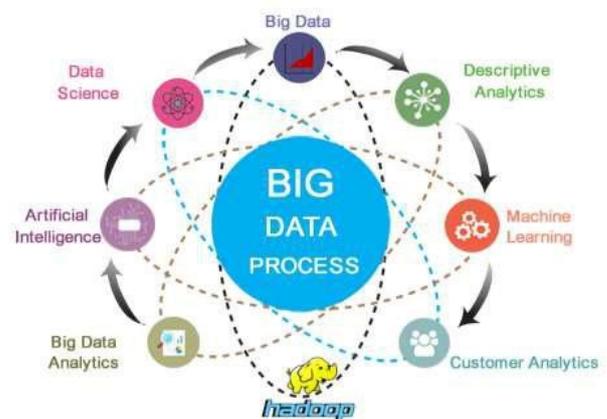


Figure 1.

According to Farhaoui (2018), the modern use of the concept “big data” described the use of predictive and behavior analytics, or probably other higher methods data analysis.

Conceptual Framework: The figure no 1, represents the relationship between the variables, Information Technology, Big Data, Artificial Intelligence. According to the frame work the accounting system is a dependent variable and Information Technology, Big Data, Artificial Intelligence are independent variables.

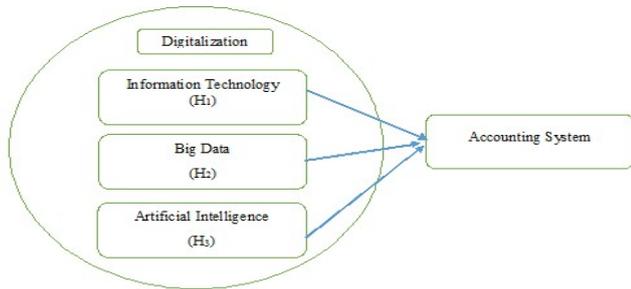


Figure 2.

Research Methodology

Research Design: The study is purely based on primary source and also covered the literature from secondary source. It is to know the state of current affairs in the field of accounting with the implementation of technology.

Sample size: The sample size of the study was 48, comprises of University Degree holders, Professionals, Students, Diploma Certificate holders.

Source of the Data collection: The data was collected from primary source and secondary source

Primary source: Structured Likert Scale questionnaire has been framed to collect the primary data.

Secondary Source: the secondary data was collected from books, publications, journals, and internet.

Presentation of the Data: The data collected were presented in the frequency distribution based on Gender, Age, and Educational Background. The total of 48 responded to the questionnaire based on likert scale.

Table 1. Profile based on Gender

Gender	Respondents	Percentage (%)
Male	14	29
Female	34	71
Total	48	100

Source: Primary

The table no 1, shows the profile based on Gender. The total number of respondents are 48. Majority of the respondents are females. The total of number of 34 females representing 71%. And male respondents are 14, with a percentage of 29%.

Table 2. Profile based on Age Group

Age Group	Respondents	Percentage(%)
20-25 years	18	38
26-30 years	4	8
above 30 years	26	54
Total	48	100

Source: Primary

From the above Table no 2, the respondents are based on age group. Majority of the respondents are from the age group of above 30 years representing 54%, 18 respondents are in the age group of 20-25 years with a percentage of 38%. And the least falls under 26-30 years age group with 4 respondents comprising of 8%.

Table 3. Profile based on Education Level

Education Level	Respondents	Percentage (%)
University Degree	21	44
Professional	14	29
Student	10	21
Diploma Certificate	3	6
Total	48	100

Source: Primary

Table No 3, shows the profile of the respondents based on educational qualifications. Majority of the respondents are the university degree holders comprising of 21 respondents with 44 %. 14 respondents are professionals with a percentage of 29%. 10 respondents are students with a percentage of 21%. The last and least are from Diploma certificate holders with 3 respondents and their percentage is 6%.

The table no 4, represents the respondents perception towards Accounting System. Most of the respondents agrees the statements that there is a flexibility in the accounting system. 21 respondents agree the statement that the system is flexible with a percentage of 44. Strongly agreed are 19 respondents with 40%, Neutral are 7 respondents with 15%, Disagree and Strongly Disagree are 1 with a 2%. The total of 29 respondents agree the statement that the system gives a quick response with a percentage of 60. Strongly agreed are 11 respondents with 23%, Neutral are 6 respondents with 13%, Disagree and Strongly Disagree are 2 with a 4%. The total of 27 respondents agree the statement that the system is reliable with a percentage of 56. Strongly agreed are 13 respondents with 27%, Neutral are 5 respondents with 10%, Disagree and Strongly Disagree are 3 with a 6%. Most of the respondents agrees the three statements that the accounting system is flexible, it is fast and gives quick response, and the outputs are reliable.

The table no 5, represents the respondents perception towards Information Technology. Most of the respondents agrees the statements that information technology facilities the Communication, improvement in Decision Making Process, and to reduce the Operating Cost. The total of 26 respondents strongly agree the statement that information technology facilities the communication with a percentage of 54. Total of 15 respondents agreed the statement with 31%, Neutral are 6 respondents with 13%, and Disagree and Strongly Disagree are 1 with a 2%. The total of 24 respondents agree the statement that the information technology improves the Decision Making Process with a percentage of 50%. Strongly agreed are 17 respondents with 35%, Neutral are 5 respondents with 10%, Disagree and Strongly Disagree are 2 with a 4%. The total of 24 respondents agree the statement that the information technology will reduce the Operating Cost with a percentage of 50. Strongly agreed are 13 respondents with 27%, Neutral are 9 respondents with 19%, Disagree and Strongly Disagree are 2 with a 4%. Most of the respondents agrees the three statements that the Information Technology facilities the Communication, improvement in Decision Making Process, and to reduce the Operating Cost. The table no 6, represents the respondents perception towards Big Data. Most of the respondents agrees the statements that Big Data Analyze Quick and Accurate, Big Data is Expensive, Big Data enhances the Relevance & Quality. The total of 16 respondents strongly agree the statement that Big Data analysis is quick and accurate with a percentage of 33. Total of 23 respondents agreed the statement with 48%, Neutral are 7 respondents with 15%, and Disagree and Strongly Disagree are 2 with a 4%. The total of 23 respondents agree the statement that the Big Data is Expensive with a percentage of 48%. Strongly agreed are 14 respondents with 29%, Neutral are 10 respondents with 21%, Disagree and Strongly Disagree are 1 with a 2%. The total of 25 respondents agree the statement that the information technology will reduce the Operating Cost with a percentage of 52. Strongly agreed are 18 respondents with 38%, Neutral are 3 respondents with 6%, Disagree and Strongly Disagree are 2 with a 4%. Most of the respondents agrees the three statements that the Big Data analyzethe data quickly and Accurate, Big Data is Expensive, Big Data enhances the Relevance & Quality.

Table 4. Accounting System- Perception of Respondents

<i>Perception of the Respondents with respect to Accounting System.</i>					
<i>Perception Statement</i>	SA = Strongly Agree	A = Agree	N = Neutral	D = Disagree, SD = Strongly	Total
Accounting System					
<i>(a)Flexibility</i>					
<i>Respondents</i>	19	21	7	1	48
<i>Percentage (%)</i>	40	44	15	2	100
<i>(b)Quick Response</i>					
<i>Respondents</i>	11	29	6	2	48
<i>Percentage (%)</i>	23	60	13	4	100
<i>(c)Outputs are Reliable</i>					
<i>Respondents</i>	13	27	5	3	48
<i>Percentage (%)</i>	27	56	10	6	100

Source: Primary

Table 5. Information Technology- Perception of Respondents

<i>Perception of the Respondents with respect to Information Technology</i>					
<i>Perception Statement</i>	SA = Strongly Agree	A = Agree	N = Neutral	D = Disagree, SD = Strongly	Total
Information Technology (IT)					
<i>(a)Communication</i>					
<i>Respondents</i>	26	15	6	1	48
<i>Percentage (%)</i>	54	31	13	2	100
<i>(b)Decision Making</i>					
<i>Respondents</i>	17	24	5	2	48
<i>Percentage (%)</i>	35	50	10	4	100
<i>(c)Operating Cost</i>					
<i>Respondents</i>	13	24	9	2	48
<i>Percentage (%)</i>	27	50	19	4	100

Source: Primary

Table 6. Big Data- Perception of Respondents

<i>Perception of the Respondents with respect to Big Data</i>					
<i>Perception Statement</i>	SA = Strongly Agree	A = Agree	N = Neutral	D = Disagree, SD = Strongly	Total
Big Data					
<i>(a)Quick and Accurate</i>					
<i>Respondents</i>	16	23	7	2	48
<i>Percentage (%)</i>	33	48	15	4	100
<i>(b)Expensive</i>					
<i>Respondents</i>	14	23	10	1	48
<i>Percentage (%)</i>	29	48	21	2	100
<i>(c)Relevance & Quality</i>					
<i>Respondents</i>	18	25	3	2	48
<i>Percentage (%)</i>	38	52	6	4	100

Source: Primary

Table 7. Artificial Intelligence- Perception of Respondents

<i>Perception of the Respondents with respect to Artificial Intelligence</i>					
<i>Perception Statement</i>	SA = Strongly Agree	A = Agree	N = Neutral	D = Disagree, SD = Strongly	Total
Artificial Intelligence					
<i>(a)Repetitive tasks performed by Robots</i>					
<i>Respondents</i>	12	24	8	4	48
<i>Percentage (%)</i>	25	50	17	8	100
<i>(b)Evolving digitalization</i>					
<i>Respondents</i>	13	28	5	2	48
<i>Percentage (%)</i>	27	58	10	4	100
<i>(c)Loss of jobs.</i>					
<i>Respondents</i>	17	20	7	4	48
<i>Percentage (%)</i>	35	42	15	8	100

Source: Primary

The table no 7, represents the respondents perception towards Artificial Intelligence. Most of the respondents agrees the statements that Artificial Intelligence with respect to Repetitive tasks performed by Robots in Artificial Intelligence, Evolving digitalization, Loss of jobs. The total of 12 respondents strongly agree the statement that there will be a repetitive tasks performed by Robots in Artificial Intelligence with a percentage of 25. Total of 24 respondents agreed the statement with a percentage of 50%, Neutral are 8 respondents with 17%, and Disagree and Strongly Disagree are 4 with an 8%. The total of 28 respondents agree the statement that the evolving digitalization under Artificial Intelligence 58%. Strongly agreed are 13 respondents with 27%, Neutral are 5 respondents with 10%, Disagree and Strongly Disagree are 2 with a 4%.

The total of 20 respondents agree the statement that there will be loss of jobs under Artificial Intelligence with a percentage of 42. Strongly agreed are 17 respondents with 35%, Neutral are 7 respondents with 15%, Disagree and Strongly Disagree are 4 with an 8%. Most of the respondents agrees the three statements that the Artificial Intelligence with respect to Repetitive tasks performed by Robots in Artificial Intelligence, Evolving digitalization, Loss of jobs.

Findings

Most of the respondents have a positive response on Information Technology, Big Data and Artificial Intelligence. From the analysis and the previous literature, the summary of findings are revealed.

Positive relationship between Information Technology and Accounting System and there is an insignificant relationship among Information Technology and Accounting System. Big Data is insignificant on accounting system in an organization.

- Insignificant impact of Artificial Intelligence in the processing of accounting information of an organization.

CONCLUSION

Digitalization has stepped to solve the problems faced by accounting system and to improve the efficiency of the business. From the analysis, Information Technology have a positive but insignificant relationship on accounting system of organization. Big Data and Artificial Intelligence has insignificant effect on the accounting system according to the latest technology with low cost. It can be concluded that digitalization of accounting information have an insignificant impact on accounting system but can be positively contribute to the development of the accounting system according to the latest technology. Big Data is an expensive, the usage level can be reduced to cut down the cost.

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