

STUDENT MEDICAL CERTIFICATE VALIDATION USING OPTICAL CHARACTER RECOGNITION

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ABSTRACT

Abstract—This paper proposed the idea of enhancing model in creating an integration of the model related to Big Data engineering and other cloud computing variables that would generate relative adaption of technology acceptance model (TAM) and technology-organization environment (TOE) which has been verified through the survey collection of data from UAE by using factor analysis and binary logistic regression for data analysis, this study used a statistical method for the analysis such as a binary logistic regression to define the correlation for the data analysis technique because it imposed strong concept to tie Big data engineering and an artificial intelligence that has a specialty with respect to machine learning.

Keywords: Big Data, Cloud Computing, Technology Acceptance Model, Machine Learning

INTRODUCTION

The reality of Cloud computing and Big Data engineering adapted the possible to dislocate businesses and access towards other productions through analysis, artificial intelligence through machine learning to carry out a great amount of competitive

advantage for effective business operations ¹. Thus, it has been

observed that scholar-practitioners noted that Big Data engineering considered to be the driver of cloud computing for the evolvement of academic research objectives that are needed to be accepted or rejected. In order to test^{2, 3, 4}, stated that it has been initiated that acceptance of cloud computing has increased the usefulness within the cloud-powered business services which enhanced related offering such as Big Data engineering and artificial intelligence. The enhancing model has created the integration of the model related to Big Data engineering and other cloud computing variables that generated relative adaption of technology acceptance model (TAM) and technology-organization environment (TOE) which verified through the survey collection of data from UAE by using factor analysis and binary logistic regression for data analysis, this study used a statistical method for the analysis such as a binary logistic regression to define the correlation for the data analysis technique because it imposed strong concept to tie Big data engineering and an artificial intelligence that has a specialty with respect to machine learning.

LITERATURE WORK

Across two decades, it has been observed that the technology industry has gone through various evolvement of exchange which offer technology industry to have tremendous ideas in innovation and development via cloud computing, social media, mobile devices, IoT devices, big data, artificial intelligence, machine learning, deep learning algorithms. To understand the diversity of big data for the adoption of cloud computing, it expanded the effects of big data technology through cloud computing aspects in organizations and communities. Basically, it is required to verify technological progress and related changes observed in the current business framework. ⁴stated that the business organization must work on big data consumption to create innovative solutions at a different organizational level. ¹observed that there are only four studies in the previous year which demonstrated the expertise of IT professionals for the adoption of cloud computing. The recommendations of additional research have based upon perspectives of IT professionals through cloud computing adoption. With the emergence of technologies, the professionals researched, worked, designed and then implemented accordingly to store further information in the field of IT application. Further, it is necessary to recognize other properties of IT technology which worked for the effectivity of adoption regarding the technology acceptance model (TAM)⁵. Theory regarding the diffusion of innovation (DOI) and the technology organization environment framework (TOE)⁵. Additionally, it has been observed that further models of research are necessary for the adoption of a single technology model which highlight the complexity of the theory through multiple technologies that were involved. The demonstration of cloud computing service has provided a relative focus on servers and analysis of storage utilization⁶. ⁶emphasis that necessary elements related to cloud computing have followed three major responses such as new innovative products, hurdles, and

motivators for offering different services. The variables of different responses dependent upon different effectivity levels such as it is costly, demanded the need for training and alliance for security purposes ⁶. The concept of these variables is rather comparable for defining cost and security effectiveness through perceived used which is used in the current model for the evaluation of the technology advancement. However, three variables were presented in the motivator's concept in the model that defined rapid provisioning along with the reduction in their overhead substrates and diversity within their service accumulation. All these variables are important for the usefulness of cloud computing adoption analysis theories. The integration of cloud computing products and services has been examined through Big data technology which offered innovative and qualitative service offerings. ⁶suggested that Big Data technology has integration on cloud computing products and services to defined comparable variables that demanded the usefulness and adoption of relative theories from TAM. However, TAM and TOE variables considered as providing adoption within Liu's and other researchers' cloud computing to relate the theoretical structure of the given variable. The study comprised of six independent and one dependent variables for the analysis of cloud computing. Six independent variables were the intention to use, perceived usefulness, and ease of use, cost-effectiveness and security effectiveness along with the need for Big Data technology^{7,8}. Whereas dependent variable demonstrated the use of cloud computing that has been adopted from the given research method ⁹.

MOTIVATION OF RESEARCH

³suggested that there were serious variations within the technological site particularly in the Big Data analytics. The accumulation of Big data analysis has been made through insights of social data, relative videos along with tweets related to more complex situations where the data analysis created through an intelligent system like in-vehicle infotainment, small sensors, and smart meters. The integration of all these aspects highlighted that these systems are human-generated data analysis. Smart system standards rely on generating large volumes with the fastest and most complex large data flow models ³. The shared cloud infrastructure distribute data through intelligent systems and the Internet of Things (IoT)^{10,11}. It has been noted that the cloud not only becomes a big data processing center but also imposed different data analysis sources to distribute big data to its platform. Later, in today's environment, the use of cloud computing with standard technology theories and its framework deemed inappropriate ³. Furthermore, a new study was conducted to determine the adoption of cloud computing within the perspective of IT professionals and managers in order to achieve the goal and transformation. The big data denoted as a cloud computing model based on an article written by ². The literature called 'Big Data Adoption, which relies on clouds in big data and cloud clouds', serves as the anchor of this study. The study was driven by the study of claims made by Liu and others in developing the cloud computing adoption model and testing the diverse model for IT professionals or

managers who have identified a significant impact on large data technology for cloud computing adoption.

PROBLEM STATEMENT

Cloud computing is a newly emerging technology that has been adopted in many industries to facilitate resource sharing such as software, hardware, and applications. Many stakeholders can take advantage of the cloud, including developers, network engineers and end-users¹²⁻¹⁴. Many studies have tried to determine the impact of the adoption of cloud computing by business organizations. This is because the use of technology will improve the organizational performance of the same organization and others. A variety of findings were devised, and many theoretical adoptions were used to explain adoption. Thus, a new study is needed to identify factors driving the adoption of cloud computing from the perspective of IT professionals or managers. The literature review discovered that ease of use, factors of usefulness, complexity in security and compatibilities that have been used widely to measure cloud computing adoption which is needed for IT professionals and could be integrated with TAM, DOI, and TOE¹. Till now, few studies have been addressed for the claims made by²⁻⁴ that Big Data engineering drove adoption for cloud computing which increased perceived usefulness. Consequently, new variables need to be identified. TAM and TOE model has been widely used in several studies⁸ but both models are powerless towards cloud computing and the findings of these studies still inconclusive and depended on theory while only few studies addressed the problem in regard to the cloud computing should evolved from low-level technology to high-level business solutions. A new adoption model for cloud computing must be created.

RESEARCH QUESTIONS

To explore the research problem, this study focuses on one major research question, which includes four sub-research questions. The main research question in this study is 'to what extent, if any, is the adoption of cloud computing predicted by perceived ease of use, perceived utility, security effectiveness, cost-effectiveness, intent to use big data technology, and the need for Big Technology Data? '

The research sub questions are:

1. Are there important factors affecting the adoption of cloud computing as seen by IT service providers in the UAE?
- II. What is the relationship between big data engineering and the usefulness of big data use and cloud computing?
- III. How do big data engineering and the usefulness of big data effects from cloud computing adoption?
- IV. How does an improved model describe the factors that affect the adoption of cloud computing?

RESEARCH HYPOTHESIS

H01: The adoption of cloud computing is unpredictable through perceived ease of use, perceived utility, security efficiency, cost-effectiveness, intent to use big data engineering, and the need for big data engineering.

HA1: The adoption of cloud computing is predictable through perceived ease of use, perceived utility, security efficiency, cost-effectiveness, intent to use big data engineering, and the need for big data engineering.

There are also six additional sub hypotheses for this study:

H02: The adoption of cloud computing is easily predictable for perceived use.

HA2: The adoption of cloud computing is easily predictable for perceived use.

H03: The adoption of cloud computing is unpredictable through perceived interest.

HA3: The adoption of cloud computing is predictable through perceived interest.

H04: The adoption of cloud computing is unpredictable by the intention of using big data technology.

HA4: The adoption of cloud computing is predictable by the intention of using big data technology.

H05: The adoption of cloud computing is unpredictable through the need for big data technology.

HA5: The adoption of cloud computing is predictable through the need for big data technology.

H06: The adoption of cloud computing is unpredictable through the effectiveness of security.

HA6: The adoption of cloud computing is predictable through the effectiveness of security.

H07: The adoption of cloud computing is unpredictable through cost-effectiveness.

HA7: The adoption of cloud computing is predictable through cost-effectiveness.

RESEARCH OBJECTIVES

The overall motivation of this study is to study the various factors that affect the acceptance of cloud computing devices. The following research objectives are as follows:

- I. Determine various factors that motivate the approvals of cloud computing from the perspective of IT professionals or managers.
- II. Determination of Big Data Engineering and usefulness of big data impact on cloud computing adoption.
- III. develop a new model for enhancement of cloud computing adoption with integrated different variables such as TAM, TOE and Big Data engineering variables.
- IV. Evaluate the new model by using different statistical tools.

RESEARCH STRATEGY AND DESIGN

The main component of ²study featured that Big Data innovation goes as a driver for cloud computing selection level. Though, the subsequent component contained associations to find a way to build cloud computing adoption. The suspicion made by the analyst featured two Big Data innovations related factors which utilized in the new cloud computing adoption model. The goal to use in Big Data innovation is viewed as an adjusted adaptation of ⁸ which showed the expectation to utilize cloud computing factors. The second factor for huge information innovation has contained and adjusted from ¹⁷ study that sought after the first estimation of the variable through cloud computing needs. Notwithstanding, the scientist considered ⁸ as a marvel of apparent value that goes as a variable that should incorporate inside the new cloud selection level due to its importance for the present investigation. The cost of viability variable is the piece of the present investigation which embraced through Ross' examination. The scientist included the security adequacy variable which was received from Ross' investigation that shown the present examination because ²considered this variable as the basis in each cloud computing choice. In this manner, it has been found that Liu's preparation considered as an obstacle for cloud computing adoption which clients were not naturally identified with cloud computing. The comparable reaction for the variable has characterized the usability of the reception of ⁸ study. This study followed a non-experimental quantitative design and a coherent research design to assess the relationship between perceived ease of use, perceived utility, security efficiency, cost-effectiveness, intent to use big data technology, and the need for data technology Large, adopting cloud computing in organizations in the UAE¹⁸. The use of the quantitative methodology facilitated the testing of the hypothesis and the possibility of disseminating the results to the targeted population ¹⁹. Experimental and semi-experimental study designs included the aggregation of participants, either by random placement or commissioned by the researcher ²⁰. The examination pursued as a non-experimental structure in the light of the fact that scientist did not gather the members. The interrelated methodology encouraged a synchronous evaluation of connections between intrigued factors ²¹. As a major aspect of the investigation, the scientist utilized interrelated examination, (for example, parallel calculated relapse examination) to survey the effect of six free factors on the probability of embracing distributed computing. The scientist enrolled an example of members utilizing an online poll gathered from the UAE. IT authorities or IT supervisor's dependent on the

selection of distributed computing and the six free and variable factors of the ward. The researcher recruited a sample of participants using an online questionnaire collected from UAE. IT specialists or IT managers based on the adoption of cloud computing and the six independent and variable variables of the dependent. The researcher conducted a bilateral logistical regression to verify the overall predictive ability of the model and the predictive relationship between independent variables: perceived ease of use, perceived benefit, security effectiveness, cost-effectiveness, intent to use large data technology, and need To Big Data Technology, The Variable Affiliate to adopt cloud computing. The researcher calculated the composite scores of subpoints that included each separate variable. The composite result for each independent variable was included in the logistic regression analysis. The child variable was the adoption of cloud computing, which was run as a yes or no response. Binary logistic regression is the appropriate analysis that should be done when the researcher intends to evaluate the relationship between a binary-branched standard variable and class or persistent prediction variables ^{22,23}.

RESEARCH SCOPE

The researcher assumed that the respondents were current IT specialists or managers who would respond to survey and entry criteria. In this study, organizations, companies, and organizations were dedicated to a similar approach to cloud computing, and these terms were used interchangeably without distinguishing between key characteristics that might limit their ability to adopt cloud computing. In this study, I assumed that the term IT managers and managers have similar meanings, because different organizations have different titles for IT decision makers. This research applied to five large companies with UAE (United Arab Emirates) as the case study that being used in this paper. The process of data collection will be explained in detail throughout this paper.

LIMITATIONS

There were few limitations to this study. The notable weakness was although this study targeted IT professionals or managers and questions regarding their organizations, it was hard to differentiate whether participants' opinions were their own, or they represented organization's viewpoint. Another limitation was that participants' understanding, perceptions, and assumptions of some part of the technology and features, especially toward security, may have changed. Apparent usefulness was an extensive variable in TAM, which has different meanings for different individuals, especially when it comes to cloud computing. Therefore, for some survey participants, perceived usefulness might mean the ability to consume cloud-powered business-enabling service offerings as described by ², which might simply mean the ability to access files through Internet-powered devices without using the desktop applications.

RESEARCH CONTRIBUTION

The systematic period of AI, IoT, Big Data and cloud alongside other cloud computing gadgets viewed as an increasingly basic to examine the determined techniques for Big Data innovation ², regardless of whether straightforwardly or in a roundabout way. Regardless of cloud computing advances that have been received in numerous ventures or advances have exhibited stage that assembles development and relative development. It is essential for business administrators to comprehend factors that determine the cloud computing industry selection¹⁵. Different specialists' companies have executed their reaction on cloud computing and Big Data innovation answers for business associations which expected to comprehend what makes their clients driven for the reception of cloud computing arrangements. In this way, it has been guaranteed by ¹⁶that Big Data innovation has driven through keen IoT gadgets to deliver a lot of complex information gathering for cloud computing framework. In any case, it was required for the check of a new model that derived information from UAE. IT experts or administrators have been included straightforwardly in arranging and executing cloud computing to produce Big Data advances in their association. The new model has given hypothetical childhood of enormous information and cloud innings which is important to research prescient supposition as for cloud computing for the joining of innovation-related factors This exploration has added new information concerning cloud computing adoption that engaged with Big Data innovation, and IT experts or chiefs.

CONCLUSION

The module of this exploration provided new conceivable outcomes for the reception innovation that engaged with the joining of various advancements with selected speculations. Previously, it was hard to investigate the reaction of Big Data innovation. Big Data innovation has driven cloud computing selection to an alternate degree of learning and picking up a preferred position for better results. In addition, this study also conducted binary logistic regression to assess the contribution of perceived ease of use, perceived usefulness, security effectiveness, cost-effectiveness, intention to use Big Data technology, and the need for Big Data technology to the prediction of cloud computing adoption.

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