CLOUD COMPUTING ADOPTION FRAMEWORK FOR KENYAN RESEARCH INSTITUTIONS

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DECLARATION

This thesis is my original work and has not been presented for award in any other University

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Approval

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DEDICATION

To Mr & Mrs Nyachiro, for enabling me to understand the value of education I give special thanks and this work is for you.

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ABSTRACT

Cloud computing is viewed as a game-changer in the way information technology is provided since it allows computer resources like storage, processing capacity, network infrastructure, and applications to be offered as a service via the internet and serves as a potential alternative to traditional Enterprise resource Planning (ERP) systems. Most Kenyan research institutions are deficient in attributes such as efficiency and productivity, flexibility, information security and automatic software updates, remote access of information and cost reduction among others. Moreover, the Research Institutions are not sure on where to start in cloud adoption given the many questions on the existing status on cloud-based services. The research employed a survey design. A search of literature was carried out to analyze current adoption frameworks and establish the gap. The study employed purposive sampling with a sample size of twenty respondents. The data was analyzed using factor analysis method to establish the variables that loaded together on a particular factor. Homogeneity of Variance test was done using Bartlett's Test of Sphericity and Factor Rotation utilized to minimize the number of variables that have high loadings on each factor to simplify the interpretation of the factors/construct. The contribution of each construct was weighted and those with lower scores omitted. The constructs had sub-constructs that are also weighted, and the insignificant ones omitted. The Findings were that Vendor readiness had the highest score off .2941 while Internal Context, External Context and Technological contexts were found to have the same weight of .1961 hence combined into one. The construct with the least impact of .1177 was found to be organizational operations. An Adoption Framework for Cloud Computing (ASCC) was developed for Research Institutions in Kenya. The findings were beneficial to not only research institutions in Kenya but in the region as well.

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LIST OF ACRONYMS AND ABBREVIATIONS

ASCC - Adoption Framework for Cloud Computing

AWS - Amazon Web Services Cloud Adoption

B2B - Business to Business

BPAA - Business Process As a Service

CC - Clouds Computing

CEOs - Chief Executive Officers

CAF - Cloud Adoption Framework

DOI - Diffusion of Innovation Model

DFS - Distributed File System

EC2 - Elastic Computing Cloud

EC - External Context

EDI - Electronic Data Interchange

HRA - Human Resource Accountant

HRMD - Human Resource Management Director

IAAS - Infrastructure as Services

IC - Internal Context

IDT - Innovation Diffusion Theory

KARLO - Kenya Agricultural Livestock and Research Institute

KEMRI - Kenya Medical Research Institute

KMFRI - Kenya Marine and Fisheries Research Institute

KMO - Kaiser Meyer Olkin

KMS - Knowledge Management Systems

LAN - Local Area Network

NIST - National Institution of Standards and Technology

OC - Organizational Context

OUM - Oracle unified Method

PAAS - Platforms as Services

POC - Proofs on Concepts

SAAS - Software As a Services

SRT - Senior Research Technician

TO - Technological Context

TOE - Technology Organization and Environment

TPB - Theories for Planned Behaviors

UTAUT - Unified Theories for Acceptance and Use for Technology

VMM - Virtual Machine Monitor

VR - Vendor Readiness

VMs - Virtual Machines