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Contents

Application of artificial intelligence in e-governance: a comparative study of supervised machine learning and ensemble learning algorithms on crime prediction

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ABSTRACT

In the developing world, the daily activities of humans' social, political and economic life make it vital and easy to encounter the phenomenon of crime. Crime is an unnecessary evil in society and for any economic, social and political activities to run smoothly, criminal offenses must be completely eliminated from society. Advancement in information and communications technology enables law enforcement agencies to collect a huge amount of crime data, and the data collected by these organizaions have been doubling every two years. It has been found out that only 17% of the collected crime data is used in their operations today and several studies have noted that Law Enforcement Agencies are data rich but information poor. Machine learning, a subfield of artificial intelligence, has been used by government agencies in developed countries in different operations like face recognition, computer forensics, image and video analysis to identify criminals and crime predictions. It is therefore time for developing countries to leverage such technologies in order to reduce crimes. Therefore, this study proposes the application of supervised machine learning techniques in the prediction of crimes basing on the past crime data. During this study, we used open-source crime data from the UCI Machine learning repository to train and validate our algorithms. The performance of supervised machine learning and ensemble learning algorithms was done using crime data. The supervised machine learning algorithms used include K-Nearest Neighbour (KNN), decision tree classifier (CART), Naïve Bayes (NB) and Support vector machine (SVM). The ensemble learning algorithms used include AdaBoost (AD), Gradient Boosting Classifier (GBM), Random Forest (RF) and Extra Trees (ET). We used an accuracy metric to measure the performance of the algorithms. Python 3 was used in all the experiments using windows 10 laptop with 8GB RAM and 2.0GHZ processor.

The performance of the supervised machine learning algorithms using the original datasets includes 60.33%, 56.24%, 57.01% and 59.06% for KNN, CART, NB, and SVM respectively. The performance of ensemble learning algorithms using the original datasets includes 58.58%, 59.81%, 55.23% and 55.74% for AD, GBM, RF and ET respectively. Experimental results revealed that KNN generally performed better when compared to the rest of the algorithms. we then developed a crime prediction model based on KNN and its prediction accuracy was 66% on our test dataset.

The use of Artificial Intelligence has the potential to ameliorate several existing structural inefficiencies in the discharge of governmental functions. Machine learning, a subfield of artificial intelligence, has been used by government agencies in developed countries in crime analysis and predictions. It is therefore time for developing countries to leverage such technologies in order to reduce crimes.

Background

Governance, broadly understood as the "*action or manner of governing a state*" thrives on the ability of the government to ensure efficient, effective, transparent and responsive administration. In the developing world, the daily activities of humans' social, political and economic life makes it vital and easy to encounter the phenomenon of crime. It has been estimated that over 90% of the data that exists in the world today has been created over the last two years alone and crime data is not exceptional as it also comes in many formats (e.g., videos, images, audios, satellite data, and sensor data). Intelligently analyzed data can assist decision makers to make actionable data driven decisions and therefore it is a valuable resource in the era of big data. It can lead to new insights and, in commercial settings, to competitive advantages.

Law enforcement has always relied on intelligence information enhanced by analysis to combat all crime and identify threats; however, the information is often narrowly focused and inconsistently updated or shared. The rise of digital technologies has made possible more powerful methods for collecting, analyzing and sharing information and has fostered the development of Intelligence-Led Policing. Global business data is becoming an essential component for Law Enforcement and Intelligence Agencies which increasingly rely on Intelligence-Led Policing (ILP) strategies. Commercial business data can help law enforcement uncover money laundering schemes, financial fraud, illegal business fronts, and a variety of other criminal activities. Global business data assists law enforcement in proactively assessing and monitoring threats and exposing businesses and executives that are involved in nefarious activity (Dun and Bradstreet, 2012). According to (OSAC Report, 2017), crimes in Uganda can occur anywhere at any time. The report shows that there was an increase of crime activity in the central region of Kampala and the northern region specifically Gulu and lira. These included both serious and moderate crimes and there was moderate cybercrime.

The high volume of crime datasets and also the complexity of relationships between these kinds of data have made criminology an appropriate field for applying data mining techniques. Identifying crime characteristics is the first step for developing further analysis (Ahishakiye, Omulo, Taremwa, *et al.*, 2017). The use of Artificial Intelligence has the potential to ameliorate several existing structural inefficiencies in the discharge of governmental functions (Basu *et al.*, 2018). In fact, scientists are spending time studying crime and criminal behaviors in order to understand the characteristics of crime and to discover crime patterns. In particular, issues arise as to how to choose accurate techniques for analyzing data due to the inconsistency and inadequacy of these kinds of data. These issues motivate scientists to conduct research on these kinds of data to enhance crime data analysis. Dealing with crime data is very challenging as the size of crime data grows very fast, so it can cause storage and analysis problems. There is a strong body of evidence to support the theory that crime is predictable (in the statistical sense) mainly because criminals tend to operate in their comfort zone. That is, they tend to commit the type of crimes that they have committed successfully in the past, generally close to the same time and location. Although this is not universally true, it occurs with sufficient frequency to make these methods work reasonably well (Ahishakiye, Omulo, Taremwa, *et al.*, 2017). Therefore, the major objective of this study was to perform a comparative study of classification algorithms and ensemble methods in crime prediction. Experimental results helped us to determine which algorithm that works better, and we developed, trained and validated a crime prediction model based on KNN.

Related Work

The study by (Ahishakiye, Omulo, Taremwa, *et al.*, 2017) did a study on crime prediction using decision tree (J48) algorithm. They used dataset from UCI machine learning repository website. The title of the dataset is '*Crime and Communities*'. The experimental results revealed that J48 algorithm predicted the unknown category of crime data to the accuracy of 94.25287%.

The study by (Kim *et al.*, 2019) did a study on crime analysis using machine learning techniques. The study used Vancouver crime datasets. Experimental results revealed that K-nearestneighbour and boosted decision tree algorithms had an accuracy between 39% to 44%.

The study by (Ahishakiye, Omulo, Wario, *et al.*, 2017) did a performance study of machine learning algorithms on crime prediction. The dataset used was secondary data from UCI machine learning repository website. Experimental results revealed that the accuracy of J48, Naïve bayes, Multilayer perceptron and Support Vector Machine (SMO) is approximately 100%, 89.7989%, 100% and 92.6724% respectively on test data.

The study by (Wu *et al.*, 2020) did a study on crime prediction using data mining and machine learning techniques. The study revealed that the classification effect of Random Trees is better than that of Neural Networks and Bayesian Networks. However, the performance accuracy of individual algorithms was not reported.

The study by (Toppireddy *et al.*, 2018) did a study on crime prediction and monitoring based on spatial analysis. In their work, various visualizing techniques and machine learning algorithms are adopted for predicting the crime distribution over an area. machine learning algorithms were used to extract the knowledge out of these large datasets and discover the hidden relationships among the data. However, the performance accuracy of individual algorithms was not reported.

The study by (Rumi *et al.*, 2018) did a study on crime prediction using dynamic features. The study revealed that dynamic information was very sparse compared to the relatively static information. To address this issue, the study developed a matrix factorization based approach to estimate the missing dynamic features across the city. Experimental results revealed that the crime prediction performance can be significantly improved with the inclusion of dynamic features across different types of crime events.

The study by (Grover *et al.*, 2007) did a review of crime prediction techniques. The study revealed three techniques namely: statistical methods, these mainly relate to the journey to crime, age of offending and offending behaviour; techniques using geographical information systems that identify crime hot spots, repeat victimisation, crime attractors and crime generators; a miscellaneous group which includes machine learning techniques to identify patterns in criminal behaviour and studies involving reoffending. The majority of current techniques involve the prediction of either a single offender's criminality or a single crime type's next offence. For further details, refer to (Ahishakiye, Omulo, Taremwa, *et al.*, 2017) (Kim *et al.*, 2019)- (Grover *et al.*, 2007).

Methods

Data sources

The dataset used in this study was obtained from the UCI Machine Learning repository and the description of the dataset was well explained on the platform. Python 3.7 notebook was used for all the implementations on 64-bit windows 10, 2GHZ processor computer.

Data Preparation

During this study, we used 492 samples with 8 variables. some variables that were deemed irrelevant in crime prediction were removed. The dataset had some missing values which were imputed using the most frequent value (mode) of that particular column. After this step, the correlation was also done on the dataset to determine which variables were related to our outcome or target variable.

Performance Metric Used

Classification Accuracy was used during this study and it is the most common evaluation metric for classification problems. To calculate Classification accuracy, we divide the number of correct predictions by the total number of instances. It is therefore reported as a ratio that can be converted into a percentage by multiplying the value by 100. In order for accuracy to hold any substantial value, the dataset must contain an equal number of instances belonging to each class. If the dataset is unbalanced, accuracy will be affected (Brownlee, 2016).

$$Accuracy = \frac{Correct\ Predictions}{Total\ Instances}$$

Algorithms Selection

Basing on our dataset, we selected classification algorithms and ensemble methods. Classification algorithms were selected because most of the variables in our dataset were categorical in nature and therefore the selected algorithms would work well, while ensemble methods were selected since they consolidate a few machine learning techniques into one model so as to diminish variance, bias, or improve performance. Also, ensemble methods are not sensitive to data distributions and therefore work well even when data is not standardized. The following section discusses Ensemble methods and classification algorithms that were used during this study.

Ensemble Methods

Ensemble methods use a combination of techniques that allows multiple machine learning models, called base learners, sometimes called weak learners, to merge their predictions and output a single, optimal prediction, given their respective inputs and outputs (see algorithm 1). Ensembles attempt to solve two issues, specifically, bias and variance, as well as the relationship between them. Ensemble methods are divided into two major classes or taxonomies: generative and non-generative methods. Non-generative methods are focused on combining the predictions of a set of pre-trained models. Generative methods, on the other hand, are able to generate and affect the base learners that they use. They can either tune their learning algorithm or the dataset used to train them, in order to ensure diversity and high model performance. During this study, we focused on generative methods namely Bagging and Boosting algorithms, and we discussed them in detail.

Algorithm1: General Pseudo-code for Ensemble Methods (Adapted from (*Ensemble Methods*, n.d.)**)**

Given *M* as the original training data, *p* as the number of base classifiers, and *N* as the test data.

for i=1 to p *do*

       Create a training set M_i from *M*.

       Build a base classifier K_i from *M*.

end for

for each test record n ∈ *N* *do*

       $K_*(n) = Vote(K_1(n), K_2(n),..., K_p(n))$

end for

Bagging Methods

Bagging (or Bootstrap Aggregation) uses various examples from the training dataset (with replacement) and training a model for each example. The final output prediction is found by taking the mean across the predictions of all of the sub-models (Breiman, 2001). Bagging uses bootstrap sampling to reduce variance just as the progress of the accuracy (Zhang & Ma, 2012). The usage of the bagging methods improves the classification results at whatever point the base classifiers are unstable, this being the vital inspiration why the bagging approach works splendidly for classification (Zhang & Ma, 2012). For more details, refer to (Zhang & Ma, 2012). Two Bagging algorithms were used during this study, namely; Random Forests (Gislason et al., 2006)(Scornet, 2010) (we used the python library sklearn's implementation of a random forest) and Extra Trees (Geurts et al., 2006) (we used the python library sklearn's implementation of Extra Trees).

Boosting Algorithms

The first boosting technique was proposed by Schapire in (Schapire, 1990), where the key result is that the weak and strong learnability are equivalent, in the sense that strong learning can be performed by combining weak learners. "Boosting" is a general technique for improving the performance of any learning algorithm. In principle, boosting can be utilized to on a very basic level lessen the error of any "weak" learning algorithm that reliably produces classifiers that need simply be fairly better than random guessing (Freund & Schapire, 1996). For more details, refer to (Freund & Schapire, 1996). Two Boosting algorithms were used during this study, namely; AdaBoost (Schapire, n.d.) (We used the python library sklearn's implementation of AdaBoost) and Stochastic Gradient Boosting (Friedman, 1999) (We used the python library sklearn's implementation of Gradient Boosting classifier).

Classification Algorithms

Classification techniques have been seen as a key bit of machine learning, with a tremendous proportion of applications published over the most recent couple of years (Pérez-Ortiz et al., 2016) (Kotsiantis et al., 2007). The target of classification algorithms is to isolate the classes of the problem by using the training data. In the event that the output variable has two possible values, the problem is referred to as binary classification. Then again, if there are multiple classes, the problem is named multiclass or multinomial classification.

K-Nearest Neighbor (KNN)

The study by Alkhatib et al. of 2013 as cited by (Vainionpää & Davidsson, 2014) revealed that the KNN algorithm is viewed as a lazy learning algorithm, with a low computational cost and it is easy to execute. KNN is a case of nonparametric models on the grounds that the viable number of parameters is unbounded, for example it develops with the number of examples. This methodology is known as instance-based learning or memory-based learning. Prediction with KNN is computed as follows (Alkhatib *et al.*, 2013).

I.   Determine the quantity of closest neighbors, k.
II. Compute the separation between the training samples and the query record.
III. Sort all training records as per the distance values.
IV. Use a dominant part vote in favor of the class labels of k nearest neighbors, and allot it as a prediction value of the query record.

We used the python library sklearn's implementation of KNN (KNeighborsClassifier).

Support Vector Machine (SVM)

SVM is one of the best binary classifiers (Pérez-Ortiz *et al.*, 2016) (Madge, 2015) (Min & Lee, 2005) that limits their choice such that most points in one class fall on one side of the boundary while most points in the other category fall on the opposite side of the boundary. During this study, RBF kernel was used. The main advantage of RBF Kernel is that it can deal with different input sets. Furthermore, it classifies test examples dependent on the example's Euclidean distance to the training points, and weights closer training points all the more intensely. This implies classification depends intensely on the most similar training examples and exploits patterns in the data (Madge, 2015). We used the python library sklearn's implementation of SVM (SVC).

Naïve Bayes Classifiers

Naive-Bayes classifier assumes class conditional independence. Given the test data Bayesian classifier predicts the likelihood of data having a place with a specific class, to foresee likelihood it utilizes the idea of Bayes' theorem. Bayesian classifiers additionally fill in as a theoretical legitimization for different classifiers that don't unequivocally utilize Bayes' theorem. For instance, under explicit suppositions, it very well may be shown that numerous neural networks and curve-fitting algorithms output the maximum posterior hypothesis, as does the naive Bayesian classifier (Predicting Direction of Movement of Stock Price and Stock Market Index, 2012) (Huang & Liu, 2019) (Ren et al., 2009). We used the python library sklearn's implementation of Naïve Bayes (GaussianNB).

Classification and Regression Trees (CART)

CART algorithm can be utilized to build both Classification and Regression Decision Trees (Zacharis, 2018). For the most part, for any classification or regression problem, CART algorithm has three significant undertakings: (i) how to divide the data at each step, (ii) when to stop dividing the data, and (iii) how to forecast the value of y for each x in a partition. During this study, we dealt with a classification problem (binary classification-whether one has cancer or not) and therefore, we used a decision tree classifier for CART. We used the python library sklearn's implementation of CART for classification (DecisionTreeClassifier).

Experimental Results

During this study, our dataset was divided into two parts: the training set and the test set. The proportion of the training set was 80% while 20% was for testing. Also, the 10-fold cross-validation was used. The algorithms were evaluated using the accuracy metric. Accuracy is defined as the number of correct predictions made as a ratio of all predictions made (Brownlee, 2016). This metric was used because it gives a quick idea of how good a given model is, and it also works well on binary classification problems.

Performance of the Classification Algorithms

In this section, we represent the performance of our classification algorithms in crime prediction. The percentage accuracy is obtained by multiplying the mean and standard deviation scores by 100. Table 1 below shows the individual performance of each of the classification algorithms. from the table1, we note that K-Nearest Neighbor (KNN) outperformed other classification algorithms in crime prediction with accuracy of 60.33%.

Table 1: Performance of the Classification Algorithms.

	Classification Accuracy	
Algorithm	**Mean**	**Standard Deviation**
K-Nearest Neighbor (KNN)	60.33%	0.112616
Classification and Regression Trees (CART)	56.24%	0.077752
Naïve Bayes Classifier (NB)	57.01%	0.076089
Support Vector Machine (SVM)	59.06%	0.092983

Comparison of performance of the Classification Algorithms used

In this section, we compared the performance of K-Nearest Neighbor (KNN), Classification and Regression Trees (CART), Naïve Bayes Classifier (NB) and Support Vector Machine (SVM) using box and whisker plot. Box and whisker plots present and effective way to compare the accuracy of more than one machine learning algorithms. The yellowish line shows the mean accuracy score.

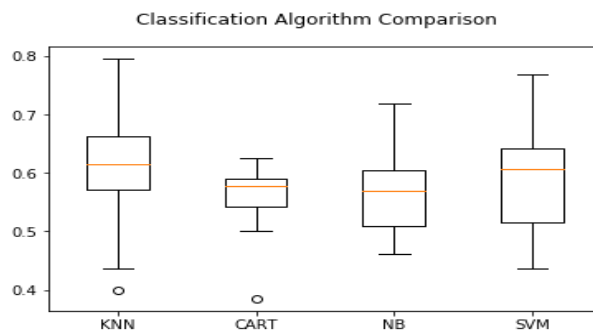Figure 1: Box and Whisker Plots Comparing Classification Algorithm Performance.

Performance of the Ensemble Methods

In this section, we present the performance of ensemble methods using classification accuracy. Also, the percentage accuracy is gotten by multiplying each score by 100. From Table 2 below, boosting algorithms outperformed bagging algorithms, with Stochastic Gradient Boosting having a higher accuracy of 59.81%.

Table 2: Performance of the Ensemble Methods

Algorithm	Classification Accuracy	
	Mean	**Standard Deviation**
Random Forests (RF)	55.23%	0.090160
Extra Trees (ET)	55.74%	0.058384
AdaBoost (AD)	58.58%	0.092292
Stochastic Gradient Boosting (GBM)	59.81%	0.059553

Comparison of performance of the Ensemble Methods used

In this section, we compared the performance of Random Forests (RF), Extra Trees (ET), AdaBoost (AD), and Stochastic Gradient Boosting (GBM) using box and whisker plot. The yellowish line shows the mean accuracy score. It can be noted that Stochastic Gradient Boosting had higher accuracy when compared to the rest of the algorithms.
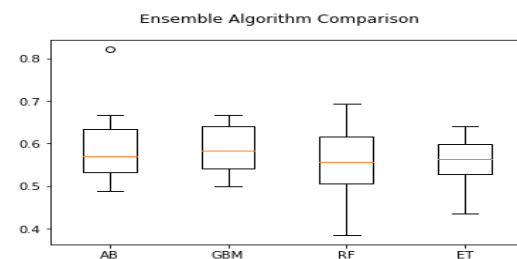

Figure 2: Box and Whisker Plots Comparing Ensemble Methods Performance.

Final Prediction Model

Based on the performance of our algorithms in Tables 1 and 2, we trained and tested our final model using KNN because it had a better performance when compared to the rest of the algorithms. The model was trained using the entire training dataset and the test dataset was used to confirm our findings. The performance of our final model had an accuracy of 66%.

Discussions and Conclusion

In this study, we used supervised machine learning algorithms and ensemble methods in crime prediction. Experimental results revealed that K-Nearest Neighbor (KNN), a classification algorithm outperformed Classification and Regression Trees (CART), Naïve Bayes Classifier (NB), Support Vector Machine (SVM), Random Forests (RF), Extra Trees (ET), AdaBoost (AD) and Support Vector Machine (SVM). We finally built and trained our final KNN prediction model and it had a performance accuracy of 66% on our test data. The use of Artificial Intelligence has the potential to ameliorate several existing structural inefficiencies in the discharge of governmental functions. Machine learning, a subfield of artificial intelligence, has been used by government agencies in developed countries in different operations like face recognition, computer forensics, image and video analysis to identify criminals and crime predictions. It is therefore time for developing countries to leverage such technologies in order to reduce crimes.

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The effects of tax administration on revenue collection in Uganda: the role of self-assessment system

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ABSTRACT

This research examines the impact of tax administration, with a focus on the self-assessment system (SAS), on revenue collection in Uganda. Utilizing data collected from 350 commercial enterprises through questionnaires, the study employs AMOS PLS-SEM for data analysis. The findings reveal that the SAS significantly enhances revenue collection by empowering taxpayers to self-report and calculate their tax liabilities, contingent upon adequate tax knowledge and awareness. The study also identifies government spending and tax collection methods as positive moderators in the relationship between SAS and revenue collection, highlighting the importance of government efficiency and transparency in fostering tax compliance. Despite the positive impact of compliance audits on revenue performance, the effectiveness of tax audits varies across different contexts, necessitating tailored approaches. The research concludes that a comprehensive strategy integrating tax education, transparent government spending, and strategic compliance audits is essential for optimizing revenue collection and supporting sustainable economic development in Uganda. Future research should explore the long-term effects of these interventions and consider the role of digitalization and socio-cultural factors in shaping tax compliance behavior.

Keywords: Tax, Tax Administration, Revenue Collection, Self-Assessment Systems

Introduction

Tax administration plays a crucial role in revenue collection in Uganda. Studies show that effective tax registration, assessment, and collection procedures have a positive impact on revenue performance (Atuhairwe et al., 2020). Research on tax administration in Uganda highlights the importance of effective systems and interventions for improving revenue collection. Studies have shown that tax administrative interventions, such as taxpayer register expansion and electronic filing systems, can positively impact business tax compliance and revenue (Jouste *et al.*, 2021). While automation has been found to improve revenue collection effectiveness, its impact on efficiency is mixed (Isaac & Lilian, 2010). The Uganda Revenue Authority (URA) has implemented various reforms, including the adoption of a semi-autonomous structure, to improve tax administration (Therkildsen, 2004). Consequently, targeting high net worth individuals has been suggested to boost revenue collection (Kangave *et al.*, 2016). The self-assessment system (SAS) and tax collection have significant effects on tax revenue, particularly for Value Added Tax (VAT) (Ladewi *et al.*, 2022).

Tax compliance is a cornerstone of a functional and sustainable tax system, particularly in developing economies like Uganda (Wadesango *et al.*, 2018). Governments depend on taxpayers' voluntary adherence to tax regulations to finance public services and promote economic stability. However, despite the implementation of various tax administration strategies, including self-assessment systems, achieving high levels of tax compliance in Uganda remains a significant challenge (Blaufus *et al.*, 2022). This issue is especially pronounced among corporate entities, which frequently engage in tax evasion or avoidance, thereby undermining revenue collection efforts (Adu & Amponsah, 2020).

This paper examines tax compliance in developing countries, particularly Uganda, focusing on small and medium enterprises (SMEs). Several studies highlight the importance of understanding taxpayers' perceptions and behaviors in improving compliance (Kiconco *et al.*, 2019). Factors influencing tax compliance include tax fairness, social norms, and government effectiveness (Wadesango *et al.*, 2018; Tusubira, 2023. The self-assessment system (SAS) is identified as a key component in tax administration, but its effectiveness is influenced by various economic and psychological factors (Wadesango et al., 2018). Challenges in Uganda's tax system include corruption, poor governance, and structural weaknesses (Bachmann *et al.*, 2022). To improve compliance, researchers suggest implementing anti-corruption measures, streamlining the tax system, and providing tax education to SMEs (Bachmann *et al.*, 2022). Additionally, considering the social-psychological aspects of taxpayers in policy-making is recommended to enhance compliance (Kiconco et al., 2019).

This research examines the role of government spending and tax collection methods in the link between self-assessment systems and revenue collection. The self-assessment system is designed to empower taxpayers by allowing them to report their income and calculate their tax liabilities, thereby fostering a sense of responsibility and compliance. However, the effectiveness of this system is heavily influenced by the methods employed by tax authorities in collecting taxes and the manner in which government spending is perceived by taxpayers.

Literature review and hypothesis development

Economic Deterrence Theory
Recent research on tax compliance and enforcement highlights the limitations of traditional deterrence theory and emphasizes the importance of tax morale - internal motivations and social norms that influence compliance (Kouroub & Oubdi, 2022). Studies have explored various factors affecting tax compliance, including penalties, education, expertise, and tax rates (Mnjeja *et al.*, 2023). Researchers suggest that tax authorities can improve compliance through education, fair procedures, and effective communication (Slemrod, 2019). However, the relationship between enforcement and welfare is complex, with some studies indicating that increased enforcement may only be beneficial when costs are very low (Liu-Evans & Mitra, 2023). These findings underscore the need for a more comprehensive approach to tax compliance and enforcement.

Tax compliance is a complex issue influenced by various factors beyond simple economic deterrence. While traditional models focus on detection and punishment (Raskolnikov, 2020), recent research highlights the importance of tax morale - internal motivations and social norms that drive voluntary compliance (Kornhauser, 2022). Factors such as attitudes, subjective norms, fairness, tax knowledge, trust, and moral

intensity significantly impact compliance behavior (Ali *et al.*, 2018). The Theory of Planned Behavior and Fairness Theory are frequently applied in this field (Kuppusamy et al., 2020). Studies suggest that penalties, education level, and expertise positively influence compliance, while inconvenience, costs, and high tax rates negatively affect it (Mnjeja *et al.*, 2023). To improve compliance, tax authorities should consider adopting a tax morale approach, implementing educational programs, and designing fair procedures (Kornhauser, 2022). Additionally, addressing the informal sector's taxation in developing countries presents both challenges and opportunities for revenue mobilization and governance gains (Lagos Rodríguez, 2022).

Tax compliance is influenced by various factors beyond the traditional deterrence model of audits and penalties (Kornhauser, 2022; Chandrashekhar, 2020). Tax morale, including personal values and social norms, plays a significant role in voluntary compliance (Kornhauser, 2022). Factors such as fairness, trust in authorities, and the complexity of the tax system affect compliance decisions (Chandrashekhar, 2020). Prospect theory has been applied to explain tax compliance behavior, considering risk perceptions in decision-making (Muehlbacher, 2021). Recent research has employed randomized controlled trials and empirical studies to assess the impact of enforcement instruments like audits and information reporting (Slemrod, 2018). In low-income countries, tax agents may support compliance by helping navigate complex systems (Occhiali & Kalyango, 2021). Laboratory experiments have also contributed to understanding tax compliance behavior, with factors like non-student subjects, loaded framing, and progressive tax regimes positively impacting compliance (Malézieux, 2018).

Technology Acceptance Model

Tax compliance research has evolved from traditional economic models to incorporate psychological and social factors (Cahyonowati *et al.*, 2022). Recent studies have identified various determinants of tax compliance, including tax knowledge, fairness perceptions, penalties, and social norms (Dung *et al.*, 2023). The Technology Acceptance Model has been applied to understand tax compliance behavior, particularly in the context of self-assessment systems (Wadesango *et al.*, 2018). Researchers have proposed frameworks integrating economic, psychological, and social factors to better predict compliance ((Dung et al., 2023; Vardavas *et al.*, 2019). Some studies suggest adapting compliance models to specific cultural contexts, such as incorporating national ideological values (Darmayasa *et al.*, 2024). The complexity of tax compliance has led to the development of interdisciplinary approaches, including agent-based modeling and systematic literature reviews, to comprehensively understand and address compliance issues (Vardavas *et al.*, 2019).

Tax knowledge plays a crucial role in influencing tax compliance behavior, particularly among small and medium enterprises (SMEs) in developing countries (Dung *et al.*, 2023; Wadesango *et al.*, 2018). While tax knowledge alone may not be sufficient to ensure compliance, it is an essential factor alongside other variables such as fairness perceptions, awareness of penalties, and attitudes towards taxation (Pertiwi *et al.*, 2020; Deyganto, 2018). The impact of tax knowledge on compliance can be enhanced through education initiatives and improved communication from tax authorities (Wadesango *et al.*, 2018). As taxation systems become increasingly digitized, digital knowledge is emerging as a critical component of tax compliance in developing countries (Mohammed *et al.*, 2022). Public acceptance of tax policies, including environmental taxes, is influenced by factors such as policy effectiveness, trust in

government, and perceived fairness (Muhammad et al., 2021). These findings highlight the importance of comprehensive tax education and transparent policy implementation to promote voluntary compliance. This reviews from various scholars resulted into the following hypothesis.

Hypothesis

H_{01}: Self-assessment system does not have a statistically significant effect on revenue collection

Self-Assessment System

The self-assessment system (SAS) in tax collection has been widely implemented, but its effectiveness varies across contexts. While some studies found SAS to have a positive impact on tax revenue (Ladewi *et al.*, 2022), others reported negative or insignificant effects (Kurnia & Azzahra, 2024). Factors influencing SAS effectiveness include taxpayer knowledge, compliance, and government support (Salindeho, 2021; Mwesigye & Kijjambu, 2024)). Implementation challenges persist, such as lack of tax knowledge and infrequent tax awareness campaigns (Salindeho, 2021). Some research indicates a strong relationship between SAS and taxpayer compliance (Susena *et al.*, 2018). However, the system's success may depend on various factors, including low tax base and tax collection efforts (Kurnia & Azzahra, 2024). Overall, while SAS aims to improve tax collection efficiency, its impact on tax revenue and compliance remains context-dependent, highlighting the need for continued evaluation and improvement of the system (Mardiana *et al.*, 2024).

Challenges of self-assessment system

The self-assessment system (SAS) in tax collection faces several challenges across various countries. Low tax compliance is a major issue, often stemming from lack of tax knowledge, complex regulations, and insufficient public awareness ((Fitdra & Inayati, 2022); (Liyana, 2019). Implementation difficulties arise from taxpayers' lack of experience, motivation, and honesty (Liyana, 2019). The system can lead to higher compliance costs for taxpayers, although it may reduce collection costs for authorities (Abiyoso & Muamarah, 2020). To address these challenges, governments need to improve tax education, simplify regulations, and enhance transparency (Liyana, 2019). Additionally, tax authorities should focus on organizational improvements, human resource development, and leveraging information technology (Liyana, 2019). Despite these challenges, SAS can potentially increase tax revenue when properly implemented (Ladewi *et al.*, 2022)

Methodology

This study employed a quantitative approach to examine the role self-assessment systems in tax administration and revenue collection in Uganda, with specific focus on commercial enterprises in the Greater Mbarara region. A cross-sectional survey design was used to collect data at a single point in time, allowing for an examination of the current state of self-assessment systems and their impact on revenue collection.

The study focused on a target population of 8,560 active taxpayers in the Greater Mbarara region, as recorded in the Uganda Revenue Authority tax register. This population spanned across eight districts and municipalities, including Mbarara City, Rwampara, Isingiro, Ibanda, Kiruhura, and Kazo. The target population was distributed across various industries: wholesale trade (2,396), hotel and hospitality (220),

rentals and properties (189), private educational institutions (102), retail trade (330), local manufacturing (471), and fuel stations (141). Using stratified random sampling, a sample of 350 respondents was selected from these industry groups. The selection criterion ensured that each industry group made a significant contribution to tax remittance, amounting to at least 100 million Uganda shillings annually, thus focusing the study on economically impactful taxpayers within the region.

A structured questionnaire was the primary instrument for data collection. The questionnaire items were adopted from previous relevant studies and measured on a five-point Likert scale ranging from 1 (Highly Agree) to 5 (Highly Disagree). The questionnaire was pilot-tested on 32 taxpayers to ensure clarity and construct reliability before the main data collection , as recommended by (Hajjar, 2018). The Cronbach's alpha values of the constructs were all above 0.70, which was indicative of a good level of reliability according to (Kiliç, 2016).

380 questionnaires were distributed to potential respondents between January - March 2024. Hard copy survey questionnaires were supplied to different firms, accompanied by a cover letter explaining the study's purpose. Out of 360 distributed questionnaires, 350 usable responses were obtained, achieving a response rate of 97.2%.

Figure 1: Conceptual Framework.
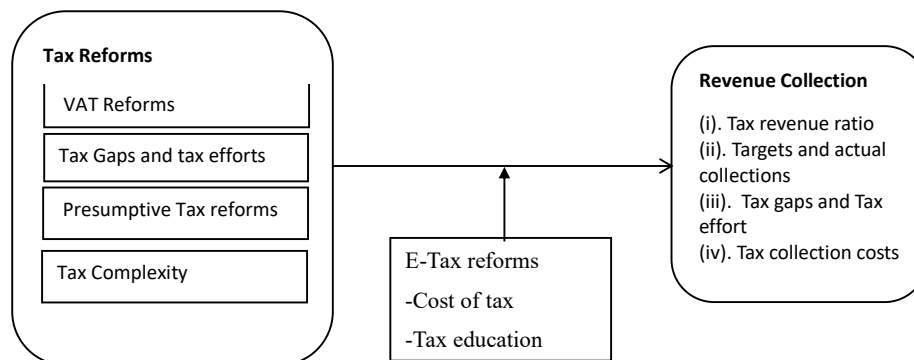
Source: Adapted from OECD, 2021.

Data Analysis

In the context of the study on the effects of tax administration and the role of self-assessment systems on revenue collection in Uganda, the Partial Least Squares (PLS) analytical method was utilized to test the hypotheses and analyze the research framework. PLS is particularly adept at handling complex models with numerous items, variables, and interconnections, allowing for the simultaneous exploration of multiple relationships (Ringle *et al*., 2012 ; Lutfi *et al*., 2023). This approach is well-suited for the intricate dynamics of tax administration, where factors such as self-assessment systems, government expenditure, and tax collection strategies interact.

PLS is also advantageous for smaller sample sizes, as it does not require data to follow a normal distribution, making it useful when other methods might be inadequate (Hair *et al.*, 2019). The PLS-SEM method involves a two-step process, consisting of the measurement model (outer model) and the structural model (inner model). The outer model evaluates the constructs' reliability and validity, ensuring that the measurement tools accurately reflect the intended variables. The inner model, on the other hand, assesses the significance of the proposed hypotheses, offering insights into the relationships between self-assessment systems and revenue collection performance, as well as the mediating roles of government spending and tax collection methods precisely reflect the targeted variables. Concurrently, the inner model assesses the importance of the proposed hypotheses, offering understanding into the connections between self-assessment and revenue collection. Table 1 below provides information on gender, age, employment status, legal status, business type, industry of operation, registered tax kinds, and yearly turnover.

Table 1: Demographic characteristics of respondents.

Variable	Category	Frequency (f) (n=350)	Percent (%)
Gender	Male	229	65
	Female	121	35
Employment	Self employed	285	81
	Employed	65	19
Age of Business (Years)	1-5	15	4
	6-10	109	31
	11-15	96	28
	>15	130	37
Legal status	Sole proprietor	220	63
	Partnership	94	27
	Private Limited Company	36	10
Type of Business	Wholesale Trade	273	78
	Hotel and Hospitality	15	4
	Rental and properties	26	7.4
	Private educational inst.	10	2.9
	Retail Trade	12	3.5
	Local manufacturing	10	2.9
	Fuel Stations	4	1.3
Tax Heads	CIT	265	75.7
	CIT and VAT	66	18.8
	CIT, VAT and LED	19	5.5
	Voluntary registration	277	79
	Forceful registration	73	20
Mode of registration	100-200	50	14.2
	201-300	49	14
	301-400	114	32.6
	401-500	23	6.6
	>501	114	32.6

Source: Field data, 2023

The results indicate that the majority of respondents were male (65%) and predominantly self-employed (81%). The businesses surveyed varied in age, with 37% operating for over 15 years, and 31% between 6-10 years. Most businesses were sole proprietorships (63%), followed by partnerships (27%) and private limited companies (10%). The predominant type of business was wholesale trade, accounting for 78% of respondents, with smaller representations from hotel and hospitality (4%), rentals and properties (7.4%), and other sectors. In terms of tax registration, a significant portion of respondents were registered for Corporation Income Tax (CIT) only (75.7%), while others were registered for both CIT and VAT (18.8%), or CIT, VAT, and Local Excise Duty (LED) (5.5%). The majority of businesses registered voluntarily (79%), with a smaller percentage registering forcefully (20%). The mode of registration varied, with the largest groups having an annual turnover between 200-300 million and over 400 million Uganda shillings, each representing 32.6% of the sample.

Table 2: Descriptive statistics on Self-assessment system

Item	N(%)				
	Highly agree	**Agree**	**Neutral**	**Disagree**	**Highly disagree**
I am aware of the statutory due dates for filing tax returns.	22(6.3)	29(8.3)	27(7.7)	48(13.7)	221(63.1)
Measures taken by URA for failure to file tax returns and payment of tax on time are harsh.	114(32.6)	148(42.3)	30(8.6)	32(9.1)	22(6.3)
Chances of being detected for non-filing and payment of tax are high.	221(63.1)	58(16.6)	20(5.7)	30(8.6)	17(4.9)
I am aware of the consequences of non-compliance.	25(7.1)	89(25.4)	49(14.0)	98(28.0)	87(24.9)
URA has efficient monitoring mechanisms for tax compliance	14(4.0)	54(15.4)	204(58.3)	37(10.6)	37(10.6)
URA conducts compliance audits regularly.	43(12.3)	220(62.9)	30(8.6)	26(7.4)	25(7.1)
Compliance tax audits help taxpayers to comply with their tax obligations	27(7.7)	223(63.7)	37(10.6)	34(9.7)	27(7.7)
Compliance tax audits help to reduce tax gaps and expand tax base	18(5.1)	231(66.0)	37(10.6)	29(8.3)	33(9.4)
Self-assessment system helps taxpayers to comply with their tax obligations.	61(17.4)	224(64.0)	25(7.1)	23(6.6)	13(3.7)
Self-assessment system improves revenue collection targets at URA	30(8.6)	68(19.4)	28(8.0)	187(53.4)	33(9.4)
URA regularly conducts tax education and awareness programs	26(7.4)	37(10.6)	45(12.9)	48(13.7)	189(54.0)

Source: Field data, 2023

The descriptive statistics from Table 2 above on the self-assessment system reveal several insights into taxpayer perceptions and the effectiveness of the Uganda Revenue Authority's (URA) initiatives. A significant majority of respondents (63.1%) are not aware of the statutory due dates for filing tax returns, indicating a substantial gap in taxpayer education. Conversely, a large portion (74.9%) perceives the measures taken by URA for non-compliance as harsh, which may influence compliance behavior. The perception of high detection chances for non-filing is prevalent among 63.1% of respondents, suggesting that the fear of detection may act as a deterrent to non-compliance.

Awareness of the consequences of non-compliance is mixed, with 32.5% agreeing they are aware, while a notable 52.9% disagree or highly disagree, highlighting the need for better communication. The efficiency of URA's monitoring mechanisms is questioned, with 58.3% remaining neutral, indicating uncertainty or lack of visibility into these processes. Regular compliance audits are acknowledged by 75.2% of respondents as a positive influence on compliance, highlighting their role in reducing tax gaps and expanding the tax base.

The self-assessment system is viewed favorably by 81.4% of respondents for helping taxpayers comply with obligations, yet only 28% believe it improves revenue collection targets, suggesting room for improvement in its perceived effectiveness. Lastly, URA's tax education and awareness programs are seen as insufficient, with 67.7% disagreeing that they are conducted regularly, underscoring the need for enhanced educational efforts to improve compliance and understanding among taxpayers.

Exploratory Factor Analysis (EFA) of the Self-Assessment System (SAS) in tax administration.

The study examined the Self-Assessment System (SAS) in tax administration using ten elements across three key aspects: compliance audits (CAUD), tax enforcement procedures (TENF), and monitoring and evaluation (MOEV). An Exploratory Factor Analysis (EFA) was conducted to determine critical dimensions for measuring each SAS item separately. The analysis revealed two significant factors with eigenvalues over 1, which together explained 47.3% of the variance. This finding was supported by the Cartel's scree plot, which demonstrated a clear break after the third factor as indicated in Figure 2.

Table 3: SAS Eigenvalues of Self-Assessment System.

Component	Eigenvalues	Proportion var	Cumulative
1	4.011	0.327	0.327
2	1.721	0.146	0.473

The extraction method was principal component

To evaluate the factor structure of SAS and its ten components, Principal Component Analysis (PCA) with Varimax rotation was employed. The results indicated that nine out of the ten initial items could be extracted into two distinct factors. One item, "I am aware of the statutory due dates for filing tax returns," was dropped due to low factor loading (< 0.4). The Kaiser-Meyer-Olkin (KMO) value exceeded 0.75, indicating that the data were meritorious and suitable for factor analysis. Furthermore, Bartlett's test of sphericity yielded significant results ($p < 0.001$), confirming that the manifest variables in the survey data were dependent and intercorrelated.
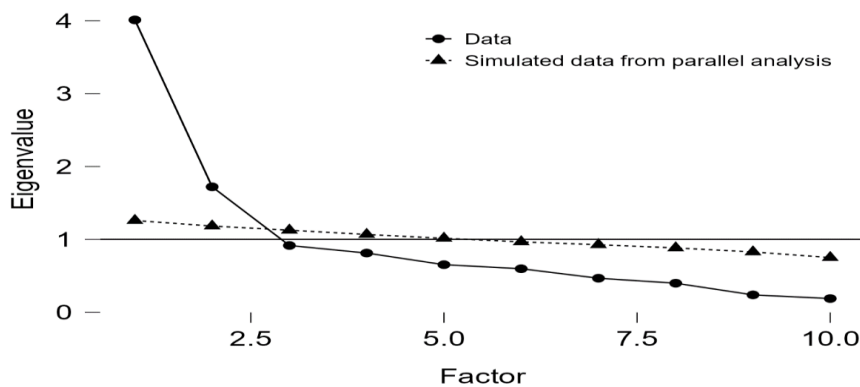
Figure 2: SAS scree plot for the significant eigenvalues

The factor structure that emerged from the analysis comprised two main components. Factor 1 included items related to compliance audits and enforcement (MFFPH, DETEH, EMMTC, UCCAT, CTAUCT, CAUGTB, SASTC), while Factor 2 encompassed items associated with self-assessment outcomes and consequences (SASRCT, ACONC). All retained items demonstrated factor loadings greater than 0.4, supporting the construct validity of the scales (Nikhil *et al.*, 2010).

Table 4: SAS Rotated Component Matrix

Item	Component	
	1	2
MFFPH	0.748	
DETEH	0.689	
EMMTC	0.530	
UCCAT	0.644	
CTAUCT	0.726	
CAUGTB	0.730	
SASTC	0.621	
SASRCT		0.758
ACONC		0.699

Note. Applied rotation method is varimax
MFFPH: Measures taken for non-compliance, CAUGBT=Compliance audits, DETEH=Detection for non-compliance, CTAUCT=Compliance tax audits enhance compliance, SASTC=Self-assessment system, SASRCT=Self-assessment improves revenue, SDUED=Statutory due dates, UCCAT=Regular compliance audits, EMMTC=Monitoring and evaluation, ACONC=Consequences for non-compliance

The Exploratory Factor Analysis (EFA) of the Self-Assessment System (SAS) yielded robust results, supporting the construct validity and reliability of the measurement scales. All retained items demonstrated factor loadings exceeding 0.4, indicating their appropriateness for component analysis. The analysis revealed two distinct factors: Compliance Audits (CAUD) and Monitoring and Evaluation (MOEV). The Kaiser-Meyer-Olkin (KMO) values for both factors (0.791 for CAUD and 0.500 for MOEV) exceeded the threshold of 0.5, confirming sampling adequacy. Bartlett's test of sphericity was significant (p < 0.001 for CAUD, p = 0.012 for MOEV), indicating sufficient inter-item correlations for factor analysis. Internal consistency, assessed via Cronbach's alpha, surpassed the recommended 0.6 threshold

for both factors (α = 0.856 for CAUD, α = 0.625 for MOEV). The Average Variance Extracted (AVE) values (0.476 for CAUD, 0.515 for MOEV) approached or exceeded the 0.5 benchmark, supporting convergent validity. These findings collectively validate the two-factor structure of the SAS, providing a robust framework for assessing tax administration practices.

Structural Equation Modeling

Part two of the study of the research's quantitative components is covered in this section. Multiple variables were shown to have structural correlations through the application of SEM. The SEM implementation procedure is discussed in detail. The study followed Sharif *et al.*'s (2024) advice and conducted SEM analysis using a two-step technique.

Table 5: Regression coefficients for the estimated model.

Outcome	Predictor	Estimate	Std. Error	z-value	p	95% Confidence Interval		Standardized	
						Lower	Upper	All	LV
ECOF	SAS	0.218	0.011	19.539	< .001	0.196	0.240	0.349	0.349
RCP	SAS	0.311	0.034	9.039	< .001	0.243	0.378	0.342	0.342

The analysis reveals that the Self-Assessment System (SAS) has a statistically significant and positive effect on both Economic Factors (ECOF) and Revenue Collection Performance (RCP). Specifically, SAS demonstrates a positive relationship with ECOF (β = 0.218, p < .001), indicating that a one-unit increase in SAS is associated with a 0.218 unit increase in ECOF, holding other variables constant. This relationship is highly significant, as evidenced by the large z-value (19.539) and the narrow confidence interval (0.196 to 0.240).

Similarly, SAS exhibits a positive and significant effect on RCP (β = 0.311, p < .001). This suggests that a one-unit increase in SAS corresponds to a 0.311 unit increase in RCP, ceteris paribus. The relationship is robust, with a z-value of 9.039 and a 95% confidence interval ranging from 0.243 to 0.378.

The standardized coefficients further support the importance of SAS, showing a moderate effect size on both ECOF (0.349) and RCP (0.342). These findings underscore the crucial role of the Self-Assessment System in enhancing economic factors and improving revenue collection performance within the context of tax administration.
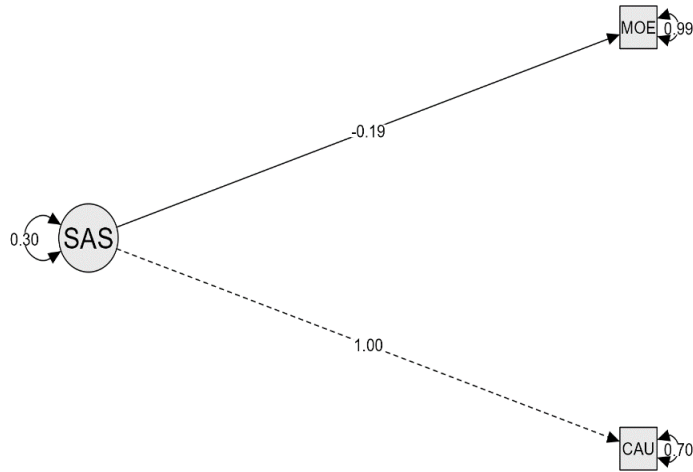
Figure 3: Estimated Congeneric Measurement Model for SAS.

A one-factor congeneric measurement model with goodness of fit statistics (GOF) was used to measure the two constructed observed items in the self-assessment system (SAS). The latent component of the self-assessment system was assessed by CAUD and MOEV in Figure 4c, which presents a model that is satisfactorily fitted. With a Chi-Square value of 6.9–5, the fitted model is less than the recommended value range of (<2.0) or a suitable <3.0. Bollen-Stine P value (0.993) was significantly higher than 0.05 (Table 4). According to Zheng and Bentler (2024), a non-significant result for the Chi-Square test suggests a well-fitting model. Furthermore, the RMSEA value of 0.000 was below the acceptable <0.08 Appendix III or the suggested threshold value of 0.05.

Table 6: Model fit for SAS construct.

				Baseline test		
	AIC	BIC	n	χ^2	df	p
Model 1	1948.848	1964.246	347	6.897×10^{-5}	1	0.993

Self-assessment system and revenue collection performance
Examining how Uganda's revenue collection performance is affected by the self-assessment method as a gauge of tax administration was the third goal of this study. "There exists no statistically significant effect of self-assessment system on revenue collection performance," according to null hypothesis H_{03}. A favorable and statistically significant route from the self-assessment system (SAS) to revenue collection performance (RCP) was shown by the data in Table 4-22 (β =0.311, Z-value = 9.039, p <0.001). As a result, the research chose to reject the null hypothesis and accept the alternative.

Testing of Hypotheses

The test used to validate the path coefficient is one of the most crucial ones; the significance of the route coefficients is ascertained using the critical ratios (CR), T-tests, and z-tests. The findings are consistent with the suggested correlations between the variables, as shown by significant route coefficients (Kline, 2023; West *et al.*, 2023).

Table 7: Direct Structural Model Hypotheses Test Results

Null Hypothesis	Hypothesis relationship	Estimate	Standard Error	Critical Ratio/ t-value	P-value
H01	SAS →RCP	0.311	0.034	9.039	<0.001

The results of the direct structural model hypotheses test, as presented in Table 4-29, provide insights into the relationships between various constructs and revenue collection performance (RCP). The null hypotheses H_{01} was tested to determine the significance of this relationship.

For H_{01}, which posits that the self-assessment system does not have a statistically significant effect on revenue collection, the results indicate a significant positive effect. The estimate is 0.311 with a standard error of 0.034, and the critical ratio is 9.039. The p-value is less than 0.001, leading to the rejection of the null hypothesis and suggesting that the self-assessment system significantly influences revenue collection.

Discussion

The discussion chapter of this research paper on the effects of tax administration on revenue collection in Uganda, particularly focusing on the self-assessment system (SAS), reveals several critical insights that align with existing literature while also highlighting unique findings pertinent to the Ugandan context. The research underscores the significant role of the self-assessment system in enhancing tax compliance and revenue collection. This aligns with previous studies that emphasize the importance of taxpayer education and awareness in fostering compliance (Wadesango *et al.*, 2018; Musimenta, 2020). The findings indicate that while the SAS is designed to empower taxpayers by allowing them to report their income and calculate their tax liabilities, its effectiveness is contingent upon the level of tax knowledge and awareness among taxpayers. This is consistent with the literature suggesting that a lack of tax knowledge can hinder compliance (Fitdra & Inayati, 2022; Liyana, 2019).

Moreover, the study highlights that government spending and tax collection methods positively moderate the relationship between SAS and revenue collection. This finding resonates with Barone and Mocetti (2011), who argue that taxpayers are more likely to comply when they perceive that their contributions are being utilized effectively for public good. The perception of government efficiency and transparency is crucial, as it directly influences tax morale and compliance behavior (Hidayati *et al.*, 2023).

The research also identifies challenges faced by the SAS, such as complex regulations and insufficient public awareness campaigns, which echo the sentiments expressed in the literature regarding the barriers to effective tax compliance in developing countries (Wadesango *et al.*, 2018; Musimenta, 2020). The study's recommendation for enhanced tax education and awareness initiatives is supported by findings from Akims and Akims (2023), who advocate for sustained public tax awareness programs to improve compliance.

Furthermore, the analysis of compliance audits reveals their positive impact on revenue collection, corroborating findings from Ogunwole *et al.* (2020) and Mudakemwa *et al.* (2022), which suggest that effective tax audits can significantly enhance revenue performance. However, the mixed results regarding

the effectiveness of tax audits in some contexts highlight the need for tailored approaches that consider local conditions and taxpayer perceptions (Indrawan, 2021).

In conclusion, this research contributes to the existing body of knowledge by providing empirical evidence on the interplay between self-assessment systems, government spending, and tax collection methods in Uganda. It emphasizes the necessity for a comprehensive approach that includes improving taxpayer education, enhancing government transparency, and implementing effective compliance audits to bolster revenue collection. Future research should explore the long-term effects of these interventions on tax compliance and revenue generation, particularly in the context of evolving economic conditions and taxpayer behaviors.

Implication

The implications of this research on the effects of tax administration and the self-assessment system (SAS) in Uganda are multifaceted, offering valuable insights for policymakers and tax authorities. The study highlights the critical role of the SAS in enhancing tax compliance and revenue collection, suggesting that effective implementation of this system can significantly improve the fiscal capacity of developing countries like Uganda. This aligns with the literature that emphasizes the importance of taxpayer education and awareness in fostering compliance (Wadesango *et al.*, 2018; Musimenta, 2020). By empowering taxpayers to self-report and calculate their tax liabilities, the SAS can reduce administrative burdens and increase voluntary compliance, provided that taxpayers are adequately informed and educated about their obligations. This underscores the need for comprehensive tax education programs that can bridge the knowledge gap and enhance compliance, as supported by Akims and Akims (2023). Furthermore, the research underscores the importance of government spending and tax collection methods as moderating factors in the relationship between SAS and revenue collection. This finding suggests that taxpayers' perceptions of government efficiency and transparency can significantly influence their compliance behavior, as noted by Barone and Mocetti (2011). Therefore, improving the transparency and accountability of government spending could enhance tax morale and compliance, leading to increased revenue collection. The study also highlights the positive impact of compliance audits on revenue performance, corroborating findings from Ogunwole et al. (2020) and Mudakemwa et al. (2022). However, the mixed results regarding the effectiveness of tax audits in different contexts suggest that tailored approaches are necessary to address local conditions and taxpayer perceptions (Indrawan, 2021). These insights imply that a holistic approach, integrating effective tax education, transparent government spending, and strategic compliance audits, is essential for optimizing revenue collection and supporting a sustainable economic that strikes a balance between economic growth, resource efficiency, social equity and financial stability in Uganda.

Conclusions

This research provided a comprehensive analysis of the effects of tax administration, particularly the self-assessment system (SAS), on revenue collection in Uganda. The findings underscore the pivotal role of SAS in enhancing tax compliance and revenue generation, aligning with existing literature that highlights the importance of taxpayer education and awareness (Wadesango *et al.*, 2018; Musimenta, 2020). The study reveals that while SAS empowers taxpayers to self-report and calculate their tax liabilities, its

success is heavily dependent on the level of tax knowledge and awareness among taxpayers. Additionally, the research identifies government spending and tax collection methods as significant moderators in the relationship between SAS and revenue collection, emphasizing the need for transparent and efficient government operations to boost tax morale and compliance (Barone & Mocetti, 2011).

Limitations

Despite its contributions, the study had several limitations that should be acknowledged. Firstly, the research is geographically limited to the Greater Mbarara region of Uganda, which may not fully represent the diverse economic and tax compliance behaviors across the entire country. This regional focus could limit the generalizability of the findings to other areas with different economic conditions and taxpayer demographics. Secondly, the study relies on self-reported data from commercial enterprises, which may be subject to biases such as social desirability or inaccurate reporting. Additionally, the cross-sectional design of the study captures data at a single point in time, which may not account for changes in tax compliance behavior over time or in response to evolving tax policies and economic conditions.

Further research areas / gaps

Future research should aim to address these limitations by expanding the geographical scope to include a more diverse range of regions within Uganda, thereby enhancing the generalizability of the findings. Longitudinal studies could provide deeper insights into the dynamics of tax compliance behavior over time and the long-term effects of SAS and other tax administration interventions. Furthermore, future studies could explore the impact of digitalization and technological advancements in tax administration, as these factors are increasingly relevant in modernizing tax systems and improving compliance. Investigating the role of socio-cultural factors and taxpayer perceptions in shaping compliance behavior could also provide valuable insights for designing more effective tax policies and education programs tailored to the unique context of Uganda and similar developing economies.

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Assessing the effectiveness of tools used for lecturer and course evaluation in institutions of higher learning: a case study from Ugandan universities

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ABSTRACT

Blended learning, a pedagogical method integrating face-to-face and online instructions methodologies, has been identified as a strategic educational approach since its inception in the late 1990s. Moreover, its adoption especially in developing countries such as Uganda was widely recognized during the COVID-19 pandemic's acceleration of digital learning adoption. However, this adoption has paused many challenges in evaluating learning content, teaching methodologies, and their impact on student progress. This study therefore, explores the critical role of quality assurance in higher education, focusing on the assessment of lecturer performance and course content. Apparently, paper-based mode of evaluation is the commonly used method in Ugandan universities, posing issues of privacy, delayed analytics, and ever-increasing operational costs. To address these challenges, this research proposes the development of an automated assessment system, informed by a benchmarking study across four universities. By adopting insights from existing evaluation practices, the proposed system aims to enhance the efficiency, accuracy, and students' privacy during lecturer and course assessment. The implementation of this automated system at Kabale University promises to streamline evaluation process, ultimately enhancing teaching quality and academic outcomes.

Keywords: Blended learning, Evaluation of higher education, Quality assurance in higher education, Web based Instruction

Introduction

The term blended learning was coined in the late 1990s. Overtime, both researcher and practitioners have defined differently. However, there are two blended learning definitions widely cited in literature. These were suggested by Bonk and Graham (2012) and Garrison and Kanuka (2004). According to Bonk and Graham blended learning combines face-to-face instruction with computer-mediated instruction (Dziuban et al., 2018; Hrastinski, 2019). On the other hand (Garrison & Kanuka, 2004) defines blended learning as the thoughtful integration of classroom face-to-face learning experiences with online learning experience. Thus, from the two definitions, there is general covenant about the key components that constitute blended learning and these are face-to-face and online instruction learning.

The outbreak of COVID-19 in 2019 paved way for blended learning to gain momentum especially in developing countries where the education system had not given it more attention (Africa, 2021). However, this adoption came along with limitations such as evaluation criteria to assess the quality of learning content, teaching approaches and its impact towards learner's academic progress (Mushtaha *et al.*, 2022). Good practices of online learning looks at three aspects i.e. the learning objective(s), delivery approach, and the assessment to ascertain whether the learning objectives are achieved (Leary, 2018; Sun & Chen, 2016). To achieve this, the institution's quality assurance must establish evaluation techniques and tools to use to ensure meaningful evaluation results (Javed & Alenezi, 2023).

The term quality assurance is a system of activities jointly focused on maintaining the quality level of education and, where necessary, improving it (Ossiannilsson, 2019). In education system, quality assurance looks at the learning outcome of a course or program, the educational program and learning paths and examination (Anderson & Dron, 2011). In institutions of higher learning, quality assurance regarding academics is supported by the quality assurance department who collect feedback from students that evaluate courses and lecturers attended to them (Alzafari & Ursin, 2019). In this case, students are tasked with evaluating the lecturer's method of course delivery, identifying aspects to uphold and areas for enhancement. This feedback serves as the foundation for the quality assurance department's reports on university performance. These reports, processed by the quality assurance department, are then disseminated to the lecturer for self-assessment and to administrators for informed decision-making.

Currently, in Uganda, the predominant approach to lecturer and course evaluation in higher education institutions involves a paper-based method (Adam *et al.*, 2016). Here, the quality assurance department distributes evaluation forms to students for completion and return (Adam *et al.*, 2016). Although these methods have been used, they have a number of challenges including; Lack of privacy i.e. these methods do not hide a student's identity hence a student may not express their feeling due to fear to disclose their identity since it may result into miss understandings between the student and the lecture being evaluated (Goodman *et al.*, 2015). Inability to perform analytics in real time, the paper-based method lacks automated data analysis hence, the quality assurance department incur expenses to hire expertise with the data analysis to interpret and create analytics reports. This increases the operation costs by the department (Heath e*t al.*, 2007; Stowell *et al.*, 2012).

Recurrent costs on stationary for printing evaluation forms, and requires much staffing with expertise to handle data collection, analysis and interpretation hence leaving the analytics burden to the quality assurance team thus, reducing the productivity and accuracy in decisions undertaken (Khairil & Mokshein, 2018; Stowell *et al.*, 2012). To address these challenges, this research proposed a system for automating the process of lecturer and course assessment in higher institutions of learning. To accomplish this, we benchmarked against four universities –Mbarara University of Science and Technology, Kyambogo University, University of Kisubi, and Uganda Martyrs University—to analyze their existing systems for lecturer and course assessment. This investigation helped identify best practices and current limitations. Insights gained from this analysis were crucial in designing and developing the proposed system. The newly developed system will subsequently be implemented at Kabale University to enhance the process of conducting lecturer and course assessments, thereby improving teaching outcomes.

Related literature

Blended learning

Blended learning, which is an integration of digital media with traditional classroom methods (Cronje, 2020), has increasing become a significant education strategy in higher education (Cronje, 2020). This mode of learning necessitates physical presence of both the teacher and learners, with some element of student control over time, place and pace. As education technologies continue to evolve, institutions of higher learning including those in developing countries, progressively adopting blended mode of learning. This mode of learning goes beyond improving teaching methods to enriching the learning outcomes through the integration of best aspects of face-to-face and online education. As a result, several emerging trends have evolved including;

Increased use of learning management systems (LMS): Over the world, institutions of higher learning have continuously adopted LMS such as Moodle, Canvas and Blackboard to facilitate both in-class and aspects of courses. These systems aid in sharing of learning materials, issuing and collection assignments, administrations of tests, quizzes and examinations.

Adaptive learning technologies: These technologies use computerized algorithms to offer personalized learning experiences by analyzing student behavior and optimize the learning path accordingly. Thus, learning has taken a real-time path to individual student demands hence improving learning outcomes. Thus, making education inclusive to even students with disabilities.

Flipped classrooms: Blended mode of learning upsets traditional learning environment by delivering learning content, often online, outside classroom i.e. formally traditional class activities such as those previously considered homework, into the classroom making learning more interactive and fostering hands-on learning experience.

Integration of Augmented and Virtual Reality: Augmented and virtual reality are increasing being adopted in learning to create immersive learning experience especially in subjects where real-world simulation is vital such as engineering, science and medicine. The realism of virtual reality has made learning more affordable and possible especially where expensive equipment and apparatus are mandatory for physical classroom.

In higher education, especially in developed countries, the increasing adoption of blended learning has been geared by the need to make learning more affordable, flexible, and accessible. However, the situation is mixed developing countries due limitations like poor technology infrastructure, which makes blended learning inaccessible in parts of the community, inadequate digital literacy, and unreliable Internet infrastructure. Much there obstacles to effective adoption of blended learning in developing countries, the future is promising with noticeable strategies like infrastructure development, policy frameworks, content localization, collaborations and community engagement.

Staff and course evaluation

Staff and course evaluation in higher learning is crucial aspect of administration in an academic institution and quality assurance (Mensah, 2022). These evaluation and primarily designed to assess the effectiveness of teaching methods, course content, teaching facilities and services (Sunder M, 2016). The

main objective is to foster a culture of continuous improvement, ensuring the institution meets students' demands and align with the international standards (Mensah, 2022).

Globally, the attitude towards staff and course evaluation among education stakeholders is generally positive; as these assessments are perceived as essential for enhancing educational quality and student satisfaction (Spooren *et al.*, 2013). However, the perception and reception of this evaluation vary significantly between regions and even between institutions with in the same country. In Africa, particularly Uganda, the idea of carrying out periodic evaluation is gaining momentum across universities, although with mixed feeling and attitudes by both staff and students (Spooren *et al.*, 2013).

For some institution at faculty level, staff and course evaluation can sometimes be perceived as a threat, more especially when the results are linked directly to promotions, tenure decisions, or even salary adjustments (Rollett *et al.*, 2021). As a result, there is a concern among staff on negative evaluation, which may not fully reflect their teaching effectiveness due to biases or imperfect evaluation process since it could affect their career and professional growth (Heffernan, 2022). On the other hand, students perceive evaluation as a platform to raise their experiences and influence course delivery, which they see as a direct benefit to their learning environment (Spooren *et al.*, 2013).

Although there are varying perception and reception between staff and students, there are many benefits of staff and course evaluation systems. For institutions, they provide feedback for improving teaching strategies, course structure and content, and learning outcomes. Besides, evaluation can also aid in curriculum development, helping align course with both local and international standards. More so the evaluation drive a student centered learning environment by actively considering students feedback in course adjustments (Berk, 2013).

Despite the above-mentioned benefits, there still several challenges hindering the implementation and adoption of evaluation systems. In African, particularly Uganda challenges like resource constraints hinders the development, adoption and maintenance of evaluation systems (Tarus *et al.*, 2015). Factors like lack of a supportive culture for continuous improvement, limited access to technology, and insufficient training for staff on utilization of these systems can weaken effectiveness of evaluations (Fathema *et al.*, 2015).

Besides, cultural attitude towards evaluation has also affected adoption of evaluation systems, for example in Uganda, some institutions there exist a hierarchical and respect-based culture that hinders students from openly evaluate their teachers, which can lead to false feedback (Oketch Tristan McCowan Rebecca Schendel With Mukdarut Bangpan *et al.*, 2014). Therefore, anonymity and sensitization of students about the importance of confidentiality during evaluation is vital towards obtaining accurate and genuine feedback.

The opportunities for improving staff and course evaluation management systems lies in technology advancement, improving the infrastructure and mindset change among staff and students. Adoption of digital evaluation tools will streamline the evaluation process, making it more efficient, reliable and less prone to bias (Stanny & Arruda, 2017).

In conclusion, whereas staff and course evaluation are essential aspects of improving quality and accountability in institutions of higher learning, institution-based challenges and opportunities must be given a priority in order to achieve desired outcomes. Sensitization of staff and students about the benefits of online evaluation, technology support and emphasizing transparent evaluation systems can lead to significant improvements and institution reputation.

Methodology

This section describes how the research was carried out. It provides an overview of the research design, the population where the study was carried out, sampling procedure, data collection tools, pre-testing of the instruments, data collection procedures, analysis and ethical considerations.

Study design

In this study descriptive survey design (Aafaq *et al.*, 2019) was adopted and used to collect both qualitative and quantitative data from study participants. Descriptive survey design was preferred since it allowed collection of data from a large pool of subjects which represents a broader picture of the situation hence allowing generation of results (Muhoza *et al.*, 2022).

Population of the study

The study population was staff from the quality assurance department, teaching staff and students from four selected universities including; Mbarara University of Science and Technology, Uganda Martyrs University – Nkozi, Kyambogo University and University of Kisubi. Purposive sampling (Lewis, 2015) was used to select 8 staff from quality assurance, whereas a systematic random sampling technique was employed to randomly select 32 teaching staff members and 60 students. The distribution of participant per institution was 2 staff members from quality assurance department, 8 teaching staff members and 15 students. The selection of these categories of participant based on the idea of giving stakeholders an equal opportunity for being involved in the research.

Research instruments

Three different questionnaires, one for students, one for quality assurance staff and another one for teaching staff members designed and used to collect data form the three categories of participants. The questionnaire contained both close-ended and open ended questions. To ensure easy access to participants, the questions were distributed in to different versions; hard copies for participants who were physically available and electronic copy for participants who were not physically available. The questionnaires included items about the procedures and practices of conducting quality assurance, systems used, and perception towards adoption of electronic systems. Before put to use, the questionnaires were pre-tested by study experts to ensure face validity and reliability of the instruments (Richard P. Bagozzi, 2017). Additionally, participants from the staff category were contacted to review the questions before they were put to use. This was to ensure a high degree of validity. Statistical package for Social Science (SPSS) software was applied to estimate the instrument's reliability based on scale items. The reliability coefficient was estimated at r = 0.73 (Richard P. Bagozzi, 2017).

Data analysis

Data collected from the participants were coded, clustered and summarized. The resulting data was fed into statistical software (SPSS 25.0.0.0) for further organized and summarized in such a way that enabled visualization of relationships between participants' perception on staff and course evaluation, performance of quality assurance in the selected academic institution.

Ethical considerations

Before proceeding with data collection, the researchers obtained clearance from Kabale University research ethics committee (KAB-REC) and Uganda National Council of Science and Technology (UNCST). Also, participants were briefed about the objectives of the study and their role as participants and were asked to sign a consent form approving their voluntary participation. They also ensured necessary efforts to adhere to the principles of voluntary participation and harmlessness throughout the study period.

Findings and discussion

Participant characteristics

A total of 8, 32 and 60 participants were selected from quality assurance departments, teaching staff and student categories respectively. Their characteristics are summaries in Table 1. In brief, the population consists predominantly of young adults with between 18 –25 (43%), with a significant male majority at 63.5%. There is significant variation of education levels, however, two-thirds (66%) either have a bachelors or still pursuing their degree/diploma. The remaining one-third possess higher qualifications (Masters and PhD).

Table 1: Demographic characteristics of participants.

Characteristic	Study population (n = 100)
Female gender, n (%)	37(36.5)
Male gender, n (%)	63(63.5)
Education level, n (%)	
PhD	11(11)
Masters	23(23)
≤ Bachelors	66(66)
Age bracket, n (%)	
18 – 25	43(43)
26 – 33	39(39)
40 – 45	11(11)
>45	07(7)

Evaluation frequency and methods used

The researchers aimed to assess the effectiveness of lecturer and course evaluations, as well as the methods used to conduct these evaluations. They sought to determine how the evaluation methods influenced the frequency of evaluation during an academic year. Figure 1 visualizes participant response about evaluation frequency. From result, 88.33% reported lecturer and course evaluation is carried out once in an academic year, where 50% do it in the first semester, 8.33% in second semester. Whereas 25% reported that evaluation is not restricted to a specific semester. On the other hand, only 16.67% participants said that the evaluation is done every semester, twice in an academic.

The predominant approach for collecting evaluation feedback is paper-based (printed evaluation forms), closely followed customized comprised system. Whereas other online tool like Google forms are less popular and other methods are barely mentioned. Printed evaluation forms are preferred since are easily accessible and ease to use. However, reliance of printed forms pauses serious limitations such as delayed processing time, high costs associated with printing, binding, distribution and collection of students' feedback.
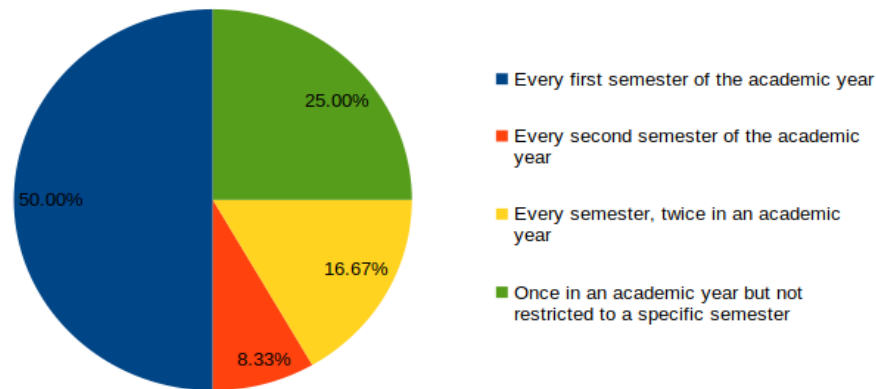

Figure 1: Participant response on frequency of evaluation in an academic year

The increasing popularity of printed evaluation forms reflected either a demographic that is more comfortable with traditional methods or limited accessibility to technology infrastructure and digital literacy among the participants. Figure 2 illustrates participants response on the types of evaluation methods used.
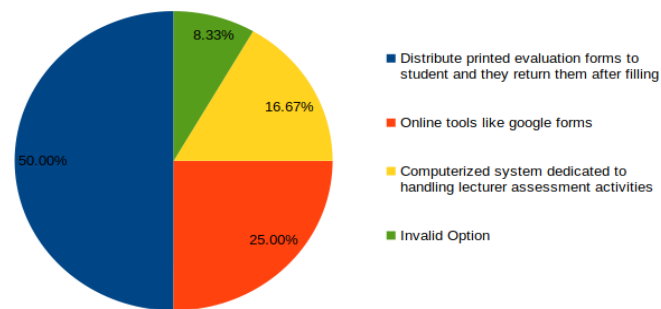

Figure 2: Participant response on the types of evaluation methods used

Sharing evaluation feedback

Much as feedback vital for every stakeholder including students, majority of participants revealed that, in some institution feedback is only shared with faculty deans and heads of department who convene faculty/department meetings and discuss evaluation feedback and suggest way forwards to address the issues raised by students. On a rare case, in some institution, the quality assurance department provide lecturer with direct access to real-time student feedback submission to enable proactive monitoring. Feedback to students is always given at an abstract level in form of decision taken to address the raised. The common types of reports generated including individual lecturer performance, statistical data reports to support comprehensive assessment and enhancement of educational practices.

Accelerating student participation

Although respondents revealed that there limited turn-up of student involvement in lecturer and course evaluation, combined efforts are underway to improve participation through enough procedures. Firstly, it revealed that majority of the respondents acknowledge the zeal by students to appreciate the benefits of raising their concerns about the quality of teaching content, and delivery methods through these evaluations thus, the culture of willingness to participate is rapidly increasing. Secondly, some institutions have enforced this process by integrating the evaluation system with student academic information management system, making it compulsory for every student to submit evaluation feedback before accessing essential services like examination card. Additionally, some institutions are carrying out routine sessions and workshops to familiarize students with evaluation tools and processing, aiming at increasing awareness hence increasing student engagement in evaluation activities.

Students participation in previous evaluation

According to data provided, there is a small proportion of students particularly 5% who have never participated in lecturer and course evaluation. This figure, much as is a small percentage, it raises concerns about student engagement and awareness of the importance of lecturer evaluation. Majority of the students (37%), revealed that they have participate between 1 and 2 times. Moving to a more frequent participation, 32% of the students have participated in the evaluation process between three and five times and the most encouraging statistics arise from the 27% of the cohort who participated in the evaluation process for more than five times since their enrollments at the university.

Access to evaluation feedback

Participants' response on whether they receive evaluation feedback at the end of the evaluation process are presented in Figure 3. From the results, it evident that only half of the respondents (51%) are receiving feedback, this implies that the existing systems and mechanisms are effective for a majority but not for a significant majority. The fact that almost half of the respondents (46) do not get feedback from the quality assurance at the end the evaluation process implies that there is a substantial gap in the existing systems which call for an improvement. The invalid response, although it is minimal (2%) reveals that either there was a misinterpretation of the question by the respondents or an issue with how data was collected. Among the challenges that come along with failure to share evaluation feedback with staff and students include; i) decreased motivation and engagement among students and staff – where staff and students are excluded in the communication of evaluation feedback, their engagement and motivation decline. Feedback is very crucial for understanding one's performance and identify areas for improvement, ii) lack of improvement and development, where feedback is not prioritized, staff and students may repeat the same mistake over and again which cripples' development, iii) reduced accountability, one of the core mandates of quality assurance is ensuring accountability and continuous improvement. Failure to disseminate feedback to stakeholders undermines the purpose of quality assurance and iv) erosion of trust and transparence, absence of feedback creates room for perception of lack of transparence and accountability, which can lead to conflicts and lack of cooperation between students, staff and administrators.

In conclusion, the survey highlighted a significant issue within the quality assurance framework in some of the academic institutions with nearly half of the respondents receiving no feedback. Addressing these gaps is very crucial towards improvement learning environment for continuous improvement and learning outcomes.
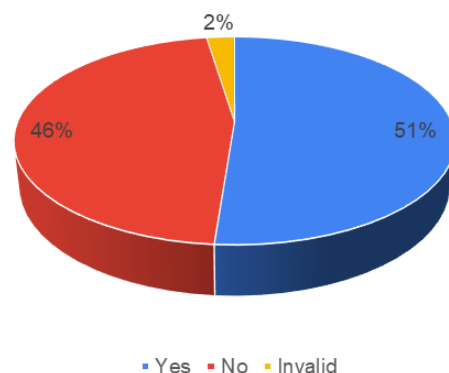
Figure 2: Access to evaluation feedback by both staff and students

Feedback communication methods

Communication channels are crucial for determining the penetration rate, security, and reach of information to the target audience. Consequently, we surveyed the 51% of participants who reported having received evaluation feedback to identify the channels used by the quality assurance department for dissemination. According to the responses, 19% received feedback via email, 24% through class coordinators, and 10% through other means such as noticeboards. Notably, 47% of the respondents did not provide an answer to this question.

Potentially, these communication channel have shortcomings which may hinder the communication process. One significant challenge with emails is the potential for information overload. Often staff and students receive large volumes of emails on a daily basis thus, important feedback emails can easily be overlooked. This reduces the likelihood that recipients will engage with the feedback. The effectiveness of relying on class coordinators depends on the individuals' communication skills and dedication. Inconsistent or unclear communication from class representatives can lead to misunderstanding and ineffective dissemination of feedback whereas noticeboards are traditional methods of communications associated with limited accessibility, limited reach and lack of engagement and accessibility. To overcome these limitations, educational institutions should consider integrating multiple communication channels and leveraging technology to ensure timely, clear, and accessible feedback dissemination.

Evaluation of the current tools used for lecturer and course assessment

In this section we present the results of an evaluation conducted on the tools used by students to assess staff performance and course content. A Likert scale method of 5 ratings was utilized, where responses were categorized as Strongly Disagree (SD), Disagree (D), Undecided (U), Agree (A), and Strongly Agree (SA). The parameters assessed included the confidentiality of the tool, timely feedback, remote assessment capability, complexity of use, ease of use, and presence of irregularities. The results are summarized in the Table 2.

Parameters	SD (%)	D (%)	U (%)	A (%)	SA (%)
The tool is confidential and hide my identity	22	27	10	20	21
The tool give timely feedback	17	19	13	34	17
The offer remote assessment capability	15	20	7	27	32
The tool is complicated to use	20	44	12	12	12
The tool is simple and easy to use	7	17	2	39	35
The tool has some irregularities	15	51	17	15	2

The evaluation results indicate mixed perceptions regarding the tools used for assessing staff performance and course content. Key findings include:

- Confidentiality and Identity Protection: Approximately 49% of students disagreed or strongly disagreed that the tool is confidential and hides their identity, indicating a significant concern about anonymity.
- Timely Feedback: A majority of students (51%) agreed or strongly agreed that the tool provides timely feedback, suggesting that this aspect is well-received.
- Remote Assessment Capability: The ability to conduct assessments remotely is viewed positively, with 59% of students agreeing or strongly agreeing that the tool offers this capability.
- Complexity of Use: A substantial proportion of students (64%) found the tool complicated to use, highlighting a critical area for improvement.
- Ease of Use: Conversely, a majority (74%) agreed or strongly agreed that the tool is simple and easy to use, indicating a contradiction in student perceptions regarding the tool's usability.
- Irregularities: Over half of the students (66%) indicated that the tool has some irregularities, suggesting issues with consistency or reliability.

The evaluation of the current tools used by students to assess staff performance and course content reveals several areas of concern and strengths. While the tool is appreciated for its timely feedback and remote assessment capabilities, issues related to confidentiality, complexity, and irregularities need to be addressed. Enhancing user experience by simplifying the tool and ensuring confidentiality can significantly improve student satisfaction and the overall effectiveness of the assessment process.

Conclusion and future work

This study focused on lecturer and course evaluation methods in Uganda while examining the integration of blended learning and quality assurance procedures in higher education institutions. The integration of in-person and virtual learning approaches, known as blended learning, has gained significant traction, particularly in the wake of the COVID-19 pandemic. The results highlighted the key elements of blended learning; online education and in-person interaction as emphasized by Garrison and Kanuka (2004) and Bonk and Graham (2012).

Considering the aspect of quality assurance, the study emphasized how crucial lecturer and course evaluation systems are to continuation and improving academic standards. Although these evaluations have many advantages like improving instruction and bringing courses into compliance with global standards the research also uncovered several drawbacks. These consist of a lack of resources, restricted access to technology, and cultural perspectives on assessment.

Significant drawbacks were discovered with the prevalent paper-based evaluation techniques employed in Ugandan higher education institutions, including delays in processing comments, high operating expenses, and privacy problems. In order to tackle these problems, the research suggested creating an automated approach for evaluating lecturers and courses that is compared to the best practices of four universities.

The study employed descriptive survey approach to collect data from three categories of respondents including teaching staff, students, and quality assurance personnel. According to the report, lecturer and course evaluations are typically done once a year using printed forms, with a low frequency of evaluations overall. There is an obvious discrepancy in the circulation of evaluation feedback; almost half of the respondents did not receive evaluation feedback from the previous evaluation surveys in their respective institutions, which affects motivation and engagement.

The study recommended adoption of digital evaluation tools, improving technology infrastructure, and promoting a continuous improvement culture as ways to improve the current evaluation methods. Establishing efficient communication channels is crucial for the dissemination of feedback in a timely, comprehensible, and easily accessible manner.

In conclusion, while the adoption of blended learning and effective evaluation systems presents numerous benefits for higher education institutions, addressing the identified challenges is crucial for achieving desired outcomes. By leveraging technology and promoting transparent evaluation processes, institutions can enhance teaching quality, student satisfaction, and overall educational standard.

Acknowledgments

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Perspectives of curriculum regulatory authorities on adopting a decolonized curriculum in Uganda: a case of National Curriculum Development Center (NCDC)

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ABSTRACT

The ongoing African renaissance and the decolonization imperatives are inviting Africans to reconsider the role of Africa ways of knowing as a way of decolonizing curriculum. Like other countries in Africa, Uganda needs an education that uses local experiences, realities, values and languages to create a lifelong impact on the masses. The ongoing colonial education was aimed at training low and middle level workers for government and missionary service and therefore the skills and competences promoted by such an education do not match with those required by contemporary demands. This explains why despite the increasing number of universities and tertiary institutions, and having many graduates (at least 400,000 per annum) Kamuhanda J(2022), the productivity of the nation in many sectors is still low. It is not clear if Uganda's education regulatory authorities like NCDC, NCHE, ESA support and therefore consider a move towards a home grown / endogenous / decolonized curriculum. Hence, the study aimed at finding the perspectives of NCDC's technical staff on curriculum transformation with in a decolonized framework. The study used questionnaires and review of NCDC's literature to find views of technical staff (curriculum specialists) at NCDC. Findings showed that the ongoing curriculum transformation at NCDC was aimed at "reducing content overload and contact hours while fostering learners centered pedagogy and promoting a competence based approach while maintaining knowledge acquisition as the core aim for teaching and learning. The transformation ignores local knowledge and methods of enhancing the identified critical thinking skills, creativity, collaboration and others; moreover many Ugandan schools do not have the equipment for practice to enhance such skills. It is contrary to pre-colonial curriculum which used local available means and aimed at instilling positive attitudes and behavior, inculcation of ethical, emotional, relational, practical and technical skills. One can therefore conclude that regulatory authorities in Uganda have not considered decolonization frames at the moment.

Introduction

Quality education is no longer measured by mere gaining of knowledge but by acquisition, contextualization and application of knowledge to one's location. To achieve this, education curriculum must be situated in both local and global realities. In other words, curriculum must be decolonized if it to positively impact the nation economically, socially, culturally and ethically. Curriculum decolonization in such a case would mean that what is taught, who teaches, how it is taught (methodology), for whom it is taught and the goals of teaching (relevance) must be anchored in the relevant indigenous cultural norms but should as well not be disengaged from global realities.

Curriculum regulatory authorities are usually autonomous arms of government responsible for regulating what is taught in a country or a region. In Uganda, NCDC is a body responsible for the designing, piloting, rolling out, and supervision of the implementation of curriculum at Early Childhood Education, Primary, Secondary, and vocational level. Several curriculum reviews and changes have been done by NCDC. The purpose of the most recent review of the lower secondary school curriculum according to the Amended circular NCDC 1/2020 (January, 2020: was: "to reduce content over load, contact hours in the classroom, fostering learner centered pedagogy, competence based approach and criterion referenced assessment" The key features of the new curriculum thus included: strong foundations for learning, life and work; learning with understanding skills in applying knowledge; excellence on-going progress, building foundations in the early, middle, later, years and prioritizing core learning. Whereas these are good drivers for change and features, they are not anchored in endogenous local realities and knowledge and do not aim at real curriculum transformation and are far from changing the quality of Ugandan finalists at each level in terms of what they know in relation to their localities/ society and the applicability of knowledge because curriculum is not situated particularly in Ugandan realities. It is also not clear whether NCDC while making these reviews and changes in the curriculum recognized the importance of decolonized frames, pedagogies and ontologies. The purpose of the study therefore was to find out the perspectives of NCDC's curriculum specialists on adopting a decolonized curriculum in Uganda.

Statement of the problem

Ideally, meaningful design and review of curriculum would be anchored and situated in the pedagogies that portray much of endogenous norms, values, systems and beliefs. Some countries from Africa and elsewhere in the world like South Africa and New Zealand are shifting away from colonial curriculum and are adopting a home grown curriculum. In Uganda, some curriculum reforms have been done by NCDC for example, the thematic curriculum, reducing the number of subjects, adopting a competence based curriculum at lower secondary level and recently the abridged curriculum.

Despite all the changes, Ugandan curriculum is still mainly anchored in European world views and grossly ignores and undermines Uganda's indigenous epistemic roots, norms, values, beliefs, science, ethics, cultures and beliefs. The graduates of the Ugandan curriculum have thus failed to impact the nation in terms of economic, social, ethical, and cultural development because what they study is not rooted in the reality they live. The curriculum appears irrelevant. It is envisaged that adopting a decolonized curriculum would change the impact of education on the nation since it considers other (endogenous) ways of knowing that is tied to local realities. The study therefore sought to find the perspectives of Uganda's curriculum regulatory authorities on adoption of a decolonized curriculum with specific reference to the National Curriculum Development Center (NCDC).

Objectives

The objective of the study was to find out the perspective of the curriculum regulatory authorities on adopting a decolonized curriculum in Uganda.
Two research questions were used to collect data:
i)   How do staffs at NCDC understand curriculum decolonization?
ii)   How do NCDC staffs perceive the benefits of adopting a decolonized curriculum?

Theoretical framework: decolonization theory

The study was underpinned by the decolonization theory. Decolonization theory in the African context situates the freeing of African epistemic systems from the colonial framework that currently defines African education horizons. This theory forms the theoretical framework that underpins this study because it provides a justification for a transformed curriculum that considers varied ways of knowing. Adopting the ideas of the theory can help to examine NCDCs' curriculum technical staff perspectives around the problem area.

Relating to education, proponents of the decolonization theory emanating from all corners dominated by colonial epistemologies like Africa, Canada, New Zealand, Australia and elsewhere are particularly against what they refer to as epistemic colonization (Adebisi, 2016; Le Grange, 2016; Heleta, 2016; Mbembe, 2016, Garuba, 2015; De Carvalho and Florez- Florez, 2014; Smith, 1999; Ngugi, 1981) and cognitive imperialism (Battiste, 2000:192). Cognitive imperialism, according to Battiste (2000:192), "is the imposition of one world view on a people who have an alternative world view with the implication that the imposed world is superior to the alternative world view". On the other hand, Mbembe (2016:36) defines epistemic colonialism as the "endless production of theories that are based on European traditions". Uganda is one of the nations which relegated its indigenous education system (what to teach, who to teach, how to teach and the goals of teaching) to the periphery and have solely adopted a westernized approach in terms of knowledge, methods and evaluation. In this regard, the decolonization struggles are against education exclusivist and the intended disappearance of particular knowledge from the shelves of knowledge in the world. They are thus struggling for the awakening of knowledge perspectives that have been relegated by colonial hegemony through indoctrinating and supporting aboriginals to love and utilize their local knowledge (Dei, 2010; Mignolo, 2010). In view of this, Simpson, (2001:140) argues that,

> we have a right to be at the table using the knowledge inside of ourselves to make decisions that impact our people, our communities, the plants, the animals and our lands. We do not want other people deciding which components of our knowledge are important and which are not. We do not want scientists interpreting our knowledge, when it has been removed from the values and spiritual foundations that give it meaning.

Advocates of the decolonization struggle aim at and envisage the triumphalism of indigenous knowledge over other (Eurocentric) knowledge in countries where epistemic colonialism has occurred. Uganda is expected to follow suit

Literature review

The concept of curriculum decolonization

Decolonizing curriculum or what Adyanga, (2014: 48) calls adopting "a well-grounded indigenous African education system that feeds the body, soul and mind of the learner" with relevant, practical knowledge. It is a complex process that requires the efforts of every able individual in the country. It means the elimination of elements of epistemic and cognitive imperialism from the curriculum; the inclusion of relevant educative cultural views in the curriculum. It involves the removal of neocolonial hegemonies in the minds of the people through adopting the world views, pedagogies and policies preferably those framed by indigenous norms, values, systems, beliefs and customs. It relates so much

to "doing away with pedagogies and curriculum which serves to define or portray Eurocentric realities". (Oviawe, 2013:60).

Curriculum decolonization requires consideration for varied ways of knowing (epistemic freedom). Due consideration must be given to local social, ethical, scientific and cultural knowledge (Adyanga, 2014; Moeke- Pickering (2010). To do it better, curriculum decolonization must begin with decolonizing the mind (Seehawer, (2018).

Other scholars believe that decolonizing education begins in the institutions of learning, particularly in the classroom. According to Lebeloane (2017:1), "the starting point of decolonizing curriculum is in the school and classroom that I regard as the formal education laboratories for equity and justice in a formal society". Oelofsen, 2015's view does not differ from Lebeloane's view except that Oelofsen believes that the purpose of decolonizing institutions first or what she collectively calls "decolonizing the intellectual landscape" (2015: 130) is to ease decolonization of the mind. Oelofsen's idea is important because the task of decolonizing curriculum is complex and requires synergies.

Whereas decolonizing curriculum is a catch term and a necessity for many nations today, it has its associated challenges. The biggest challenge to decolonization is the adoption of market models by players in many sectors; and in this case, the education sector. The market models have obliged academic actors like: the academics, parents, students and policy-makers to act in ways that are competitive, individualistic and entrepreneurial. The neoliberal orientations demonstrated by education stakeholders go very much against the decolonization of education. For instance, they have succeeded in abolishing the teaching and learning of subjects that are intended to educate for the public sphere and for civil society, for example, critical Social Sciences and social ethics because they are not for profit (Giroux, 2002; Lynch, 2006).

Methodology

The main research question that guided the study was: What are the perspectives of curriculum regulatory authorities on the adoption of a decolonized curriculum in Uganda? The study considered curriculum specialists at the National Curriculum Development Center as respondents, therefore a case study design was used. A qualitative approach was used because it relies on the interpretation and perception of the subject being studied. (Cresswel,2014). The constructivism paradigm through the qualitative approach allowed the researcher to construct contextual rich visions from curriculum specialists (Guba and Lincoln, 2005). The sample selection was guided by the fact that the selected sample had to "provide clarity insight and understanding" (Neuman, 2014: p 247) of the issue at hand. Purposive sampling was thus considered to be more appropriate for qualitative studies (Amin, 2005). According to Diaz, (2015:104), "Purposive sampling is characterized by the incorporation of specific criteria met by participants at the moment of selection" In other words, participants must have experience about the phenomenon under examination. Purposive sampling, therefore, aided the choice of the respondents; and thus all curriculum specialists at NCDC were targeted. Views about adoption of a decolonized curriculum were sought from curriculum specialists in Uganda.

A total of fifteen (15) curriculum specialists participated in the study as respondents. 80% of these had served in the capacity of curriculum specialist for a period of over five (5) years and were above 40 years of age. Using a questionnaire and a documentary analysis guide, answers to the research questions were sought. Documentary Analysis allowed me to study public documents (Creswell, 2012) such as reports, website, working papers, course curriculum and policies about curriculum. I read and analyzed such documents to obtain relevant information relating to curriculum development at NCDC. This activity was important because as Shelton, (2004:66) writes, "documents provide a background and explain the attitudes and behavior of the group under scrutiny". NCDC documents therefore provided the background to the study, described the processes and basis for curriculum design.

The interpretivist paradigm guided by the research purpose and the decolonization theory were used as a lens for data analysis.

Presentation of findings

To answer question one, (how NCDC technical staff understood curriculum decolonization), a number of questions on the questionnaire guide were answered. All participants (100%) had heard about the term curriculum decolonization before but they had divergent understanding of the term. 50% of the respondents said that curriculum decolonization meant doing away with western education and returning to the Stone Age ideals of education. One participant said

"I relate curriculum decolonization to political decolonization; therefore, to me it means doing away with European methods, textbooks, topics and studying about Europe and other non-Ugandan knowledge". Others (25%) stated that the concept involved dismissing other (e.g. Eurocentri)c topics from the curriculum while replacing it with localized knowledge. A respondent stated "it is place based education. An education with connection to where it takes place" In a similar tone, 10% noted that curriculum decolonization meant broadening what is taught in line of local knowledge. These didn't believe that decolonizing curriculum required dismissing of some components of the current curriculum; but believed in incorporation of other views. 15% believed it was community education informed by what elders and cultural leaders considered important only.

Asked if in their view curriculum decolonization was important and beneficial to the nation, (research question two) 50% thought it was necessary since it was inclusive. One respondent said, "it brings about local realities into perspective". Another said, "it makes education more relevant since it is cultural based". Others (32%) thought it was not required in this global village. Participants with such views thought that the world has gone away from concentration on mere cultural /tribal/ and regional beliefs; and "we now look at the globe in totality" therefore, decolonizing curriculum won't change anything. Another participant was of the view that curriculum decolonization is "a regressive and dull view of education". Participants with such views thought that whoever supported a decolonized curriculum was an enemy of quality education in Uganda. These also had a feeling that adoption of a competence based curriculum was good enough for education to cause growth and development.

Others (18%) were skeptical about adopting a decolonized curriculum because according to them, it did not rhyme well with the goals of Uganda's education and would also bring about divisive curriculum since it promoted inclusion of local realities into the curriculum. Participants with such views believed

that it would be very hard to adopt a decolonized curriculum and its adoption would disorganize the education system. Participants in this category were not sure if a decolonized curriculum would serve the taste of the consumers of education since it is rooted in pre-colonial knowledge.

Data gathered from the NCDC documents and website shows that the idea of curriculum decolonization is invisible in the programs of NCDC.

Discussion of findings

From the findings, two themes were evident:

Divergent perspectives about curriculum decolonization by curriculum specialists

From the above descriptions of a decolonized curriculum, it is obvious that Uganda's curriculum specialists had diversified perspectives about curriculum decolonization. There was lack of a unified view of a decolonized curriculum and therefore it would require serious interventions such as workshops if NCDC was to consider it. This finding relates well with what earlier researchers like Lebeloane, 2017 and Oelofsen, (2015) concluded. The duo advocated for decolonizing the "intellectual land scape" Oelofsen, (2015:130) if curriculum is to be decolonized. By intellectual landscape, policy makers, curriculum specialists, education regulators, assessment bodies, teachers and academics should have their mindsets decolonized before the actual process of curriculum decolonization. This is again in line with what Seehawer, 2018 noted that decolonization must begin from the mind. In Uganda, it means that curriculum specialists and should decolonize their minds before any other entity.

Misconceptions about curriculum decolonization by the curriculum specialists

Another important aspect to distill from the findings is that majority of the participants (curriculum specialists) had misconceptions about curriculum decolonization and a simple majority had a negative mindset about the issue. Some participants lacked detailed understanding and therefore had negative perceptions of the meaning of curriculum decolonization. The fact that some curriculum specialists consider curriculum decolonization as a backward, Stone Age idea, regressive and a dull view of education; and others related a decolonized curriculum to poor quality and divisive education confirms what earlier scholars concluded that there is epistemic and cognitive imperialism going on in the minds of African intellectuals (Adebisi, 2016; Mbembe, 2016; Smith, 1999). The finding again proves the suggestion of the advocates of the decolonization theory who push for the freeing of African minds from the bondages of euro centrism. This is very appropriate for Uganda's curriculum regulators.

Lack of interest of understanding the true meaning curriculum decolonization

From the responses, it was evident that many curriculum specialists wanted to retain the status quo. They felt that curriculum developers had already adopted the competence based curriculum and therefore not necessary to decolonize curriculum. These were particular influenced by neoliberal demands such as competitiveness, cost sharing, privatization and individualism which is so much against decolonizing curriculum. This view is also held by earlier researchers like Giroux, (2002) and Lynch, (2006).

Invisibility of the ideals of curriculum decolonization at NCDC

Document analysis showed that curriculum decolonization was not a matter on the agenda of NCDC and therefore was far from being thought about. Many documents reviewed have identified other methods like reduction of subjects, making it more learner centered and others but not adoption of other epistemic versions

Conclusion

The study sought to find the perspectives of curriculum regulatory authorities on adopting a decolonized curriculum in Uganda. Using the case of National curriculum Development Center, the researchers conclude that there are mixed perceptions about curriculum decolonization by curriculum specialists in Uganda. They also conclude that there is need for workshops and seminars to enhance understanding of the concept of curriculum decolonization. It was again concluded that Uganda's curriculum cannot be decolonized unless the perceptions of the education actors like curriculum specialists is unified and their mindset changed to support the idea. In other words, adoption of a decolonized curriculum is far from reality in Uganda.

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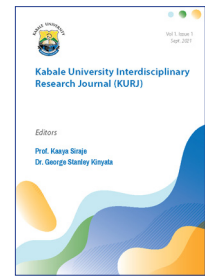
Electronic marketing and service quality of on-line merchandisers: a case study of Jumia Uganda

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ABSTRACT

The study examined electronic marketing and service quality of on-line merchandisers, a case study of Jumia Uganda. The specific objective was to find out the relationship between cart abandonment rate and service quality in Jumia Uganda. The research employed a cross-sectional survey design to investigate the association between electronic marketing efforts and service quality. A mixed-methods research approach, incorporating both quantitative and qualitative methodologies, was deemed highly relevant for this study. In addition, from the 255 target respondents, a definite sample size of 101 was determined using William G. Cochran (1997) formula. The study revealed significant correlations between various factors in the context of Jumia Uganda's electronic marketing. The study revealed that a moderate positive correlation ($r = 0.422^{**}$) was identified between cart abandonment rate and service quality, emphasizing the critical role of service quality in customer retention and reducing cart abandonment. It was recommended that: Jumia should launch remarketing campaigns to re-engage customers who abandoned their carts. Personalized messages and incentives should be used to encourage them to return and finalize their transactions.

Keywords: Electronic Marketing, Service Quality, On-line Merchandisers, Jumia Uganda

Introduction

The evolution of electronic marketing can be traced back to the late 1950s, with the origins of the internet coinciding with the economic competition between the USSR and the US during the Cold War (Jones, 2019). During this period, significant advancements in technology laid the foundation for the electronic marketing strategies existing today. One crucial milestone in the development of electronic marketing was the establishment of the Advanced Research Projects Agency (ARPA) by the United States Department of Defense in 1957 (Brown, 2017). ARPA aimed to enhance military technology and communication systems, which eventually led to the creation of the ARPANET, the precursor to the modern internet. According to Smith and Zook (2018), the Cold War context played a significant role in ARPA's formation, as it aimed to improve military communication and maintain an advantage over the Soviet Union (Johnson, 2016). This focus on communication technology ultimately paved the way for the electronic marketing strategies seen today, as the internet became more widely accessible and commercialized over the years.

Globally, the intersection of electronic marketing and service quality became increasingly significant with the rise of the internet and electronic marketing in the 1990s (Anderson, 2018). As online businesses proliferated worldwide, organizations came to recognize the pivotal role of delivering exceptional service quality in the digital arena. The ability to provide seamless online experiences, promptly address customer concerns, and personalize interactions became crucial elements of electronic marketing strategies aimed at enhancing service quality (Johnson, 2019). Eminent scholars in this field, such as Harrison (2017), Parker (2021), and Mitchell (2016), have contributed significantly to our understanding of the relationship between electronic marketing and service quality. Companies like Amazon, eBay, and Zappos have gained acclaim for their customer-centric approaches (Taylor, 2018). They have established notable benchmarks for service quality in electronic marketing, serving as role models for businesses aspiring to excel in this domain.

In recent decades, Africa has witnessed the convergence of electronic marketing and service quality, driven by technological advancements and expanded internet access (Adams & White, 2015). Countries like South Africa, Nigeria, Kenya, and Egypt have taken the lead in adopting electronic marketing practices, with a strong focus on customer satisfaction, responsiveness, and reliability to gain a competitive edge (Mapunda, 2019; Patel, 2019). This dynamic integration has reshaped the African business landscape and positioned electronic marketing as a pivotal driver of growth and competitiveness in the region.

Regionally, the fusion of electronic marketing and service quality has paralleled the continent's overall trend. Nations such as Kenya, Tanzania, and Uganda have witnessed a remarkable upswing in internet and mobile phone adoption, thereby opening avenues for enterprises to harness electronic marketing for the delivery of top-notch services (Ngugi, 2018). As digital marketing strategies have advanced within the region, businesses have heightened their commitment to offering personalized, streamlined, and dependable services to align with evolving customer demands and expectations (Kibet, 2020; Mwangi, 2017). This concerted effort underscores the significance of electronic marketing as a transformative force in reshaping the service quality landscape across East Africa (Odhiambo, 2019).

In recent years, Uganda has witnessed a pronounced convergence of electronic marketing and service quality, spurred by the escalating adoption of internet technologies and mobile devices (Kasumba, 2019). Businesses operating in Uganda have become increasingly cognizant of the pivotal role that digital channels play in marketing and delivering top-tier services (Ocheng, 2020). Organizations across various industries have been actively harnessing electronic marketing tools, including social media platforms, websites, and mobile applications, as essential means to engage with customers, meet their demands, and provide seamless experiences (Nalubega, 2017). Through a concerted focus on elements like website usability, expeditious responses to inquiries, and personalized communication, Ugandan enterprises aim to not only elevate service quality but also cultivate enduring and robust customer relationships within the digital domain (Mugabi, 2018).

Study objectives
The study was guided by the following objective:
To find out the relationship between cart abandonment rate and service quality in Jumia Uganda.

Literature review

The exploration of the intricate relationship between cart abandonment rates and service quality in Electronic marketing has been a prominent focus. Cart abandonment rates serve as a pivotal indicator of the efficacy of the overall online shopping experience, encompassing various facets of service quality. These aspects include the seamless functioning of the Electronic marketing website, the efficiency of the checkout process, and the effectiveness of customer support services. Recent research by Luo and Zhang (2019) underscores the profound impact of service quality on cart abandonment rates. Their findings reveal a direct correlation between factors like website loading times and errors in the checkout process with increased cart abandonment rates. This highlights the paramount importance of providing customers with a smooth and hassle-free online shopping experience.

In the realm of electronic marketing, service quality extends beyond the technical realm to encompass trust and reliability. A study by Wu, Yen, and Geng (2021) accentuates the role of trust as a significant determinant of cart abandonment rates. Customers who harbor doubts about the trustworthiness or security of an electronic marketing platform are more inclined to abandon their shopping carts, emphasizing the vital link between trust and service quality.

Recent scholarship by Wei and Chang (2020) delves into the personalization aspect of service quality and its influence on mitigating cart abandonment. Their research highlights the significance of tailored service experiences in reducing abandonment rates. Customized product recommendations and individualized shopping journeys can substantially sway a customer's decision towards completing a purchase.

In today's digital age, effective customer support mechanisms are pivotal in ensuring service quality. Chen, Hua, and Lin's (2020) contemporary study underscores the role of efficient customer support channels in reducing cart abandonment. Timely responses to customer inquiries, accessibility to assistance, and clear communication can significantly contribute to minimizing abandonment rates.

Building upon this research, studies such as the one conducted by Luo and Zhang (2019) have elucidated the pivotal role played by service quality in shaping cart abandonment rates. Their findings have illuminated a direct correlation between the loading times of electronic marketing websites and the occurrence of errors during the checkout process with heightened cart abandonment rates. These findings underscore the imperative of providing consumers with a seamless and hassle-free online shopping journey.

In the modern electronic marketing landscape, service quality encompasses more than just technical aspects; it extends to concepts of trust and reliability. Wu, Yen, and Geng's research in 2021 emphasizes trust as a fundamental factor influencing cart abandonment rates. Consumers who perceive an electronic marketing platform as unreliable or insecure are more inclined to abandon their shopping carts. This underlines the intrinsic relationship between trustworthiness and service quality in the contemporary digital marketplace.

Wei and Chang's study (2020) delves into the personalization facet of service quality and its potential to reduce cart abandonment. Recent scholarship has emphasized the significance of tailoring service

experiences to individual consumers. Providing personalized product recommendations and crafting unique shopping journeys can significantly influence a customer's inclination to complete a purchase. This aligns with the broader trend of personalization in contemporary e-commerce.

In an era dominated by digital communication, the efficacy of customer support services is paramount. Chen, Hua, and Lin's research (2020) underscores the pivotal role of efficient customer support channels in curtailing cart abandonment rates. Responsive and accessible customer support, coupled with effective communication, can serve as potent tools in reducing abandonment rates, thereby bolstering the overall service quality in electronic marketing platforms.

Methodology

The research employed a cross-sectional survey design to investigate the association between electronic marketing efforts and service quality. This design facilitated the collection of data from a diverse group of respondents, offering valuable insights into the current state of electronic marketing and service quality within the context of Jumia Uganda. It allowed for comparisons and analyses across various aspects of electronic marketing and service quality.

A mixed-methods research approach, incorporating both quantitative and qualitative methodologies, was deemed highly relevant for this study. This approach involved systematically collecting and analyzing data to provide a comprehensive understanding of Jumia Uganda's electronic marketing service quality. It enabled the gathering of both quantitative data, such as numerical ratings and statistics, and qualitative data, including customer feedback and perceptions.

The study population comprised 5 employees who were purposively selected due to their firsthand knowledge of Jumia Uganda's internal processes and practices. This selection aimed to provide the researcher with insights into the organization's electronic marketing and service quality from an insider's perspective.

In addition to the employees, 250 customers were selected for the study on electronic marketing and service quality of online merchandisers, such as Jumia Uganda. These customers were chosen because they could offer essential insights into their actual experiences, perceptions, and satisfaction levels when using the platform. Their feedback played a crucial role in understanding how electronic marketing strategies and service quality impact end-users and guided potential improvements to enhance the overall customer experience. Therefore, the total population for the study was 255 people.

Results

Correlation analysis on the relationship between website traffic and service quality

Table 1: Correlation analysis on the relationship between website traffic and service.

		Website Traffic	Service Quality
Website traffic	Pearson Correlation	1	.390**
	Sig. (2-tailed)		.000
	N	88	88
Service Quality	Pearson Correlation	.390**	1
	Sig. (2-tailed)	.000	
	N	88	88

**. Correlation is significant at the 0.01 level (2-tailed).
Source: Primary data, 2023

The positive correlation coefficient of (r=0.390**) implies a moderate positive relationship between website traffic and service quality. As website traffic increases, there is a tendency for service quality to improve. The significance level is denoted as .000 for both correlations. This indicates that the correlation coefficients are highly significant at the 0.01 level (2-tailed). In other words, the relationship between website traffic and service quality is unlikely to be due to random chance; it is statistically significant. The positive correlation between website traffic and service quality implies that there is a connection between these two variables. When more users visit the website, there is a tendency for service quality to be positively affected.

Conclusion

The Pearson Correlation coefficient of 0.422**, accompanied by a highly significant p-value of .000, demonstrated a strong positive correlation between cart abandonment rate and service quality for Jumia Uganda's website. These findings emphasized the critical role of service quality in retaining customers and reducing cart abandonment, making it a pivotal focus area for improving overall electronic marketing in Jumia Uganda.

Recommendation

Jumia should launch remarketing campaigns to re-engage customers who abandoned their carts. Personalized messages and incentives should be used to encourage them to return and finalize their transactions.

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Development of a fuzzy-based predictive model for the risk of postpartum hypertension in nursing mothers

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ABSTRACT

Fuzzy Logic has grown in prominence in recent years as its capacity to address a variety of problems in the field of medicine has been demonstrated to be exceptional. This study developed a model to predict risk of postpartum hypertension among nursing mothers. In this study, the variables associated with the risk of postpartum hypertension were identified, formulated a fuzzy-logic model and simulated the predictive model. The variables that were common symptoms associated with the risk of postpartum hypertension were elicited by review of related works on the body of knowledge of postpartum hypertension following which the variables were validated by mental health experts at a Nigerian hospital using the interview method. The variables identified were classified into their respective linguistic labels based on the crisp values assigned to them within the interval of acceptable values while the risk of postpartum hypertension was classified as low, moderate and high risk. Fuzzy-based related functions were used to formulate the fuzzy model for the input variables and the risk of postpartum hypertension. It was also observed that the number of triangular membership function formulated for each variable is a function of the number of classified labels for each variable. The results also showed that a total number of 288 rules were defined by the IF-THEN statements created from the variables identified by the experts. The predictive model developed and simulated can be utilized to aid expert obstetricians in the early detection and treatment of postpartum hypertension in the future.

Keywords: Fuzzy logic, Postpartum Hypertension, Obesity, Defuzzification, Membership Function.

Introduction

Hypertension and other non-infectious diseases or non-transmissible diseases account for at least 20% of all fatalities in Nigeria and about 60% of patients admitted to most tertiary hospitals (Ordinioha, 2016). The epidemiological transition theory was proposed by Omran, (1971) in a series of essays. He stated that as a community or country develops, infectious diseases will be displaced by Non Communicable Diseases (NCDs) as the fore runner causes of morbidity and mortality. In most countries around the world, including Nigeria, this theory has been validated (WHO, 2002; Wokoma and Alasia, 2011; Adefuye *et al.*, 2009; Unachukwu *et al.*, 2008).

High blood pressure, often known as hypertension, is harmful for it can cause strokes, heart attacks, heart failure, kidney illness, as well as a variety of other diseases (Lackland and Weber, 2015). When a person's average arterial pressure throughout one cardiac cycle, systole, and diastole exceeds the upper limit of what is considered normal, this is known as hypertension. An average arterial pressure of 110mmHg is classified as hypertensive (Pouler *et al.*, 2015). When the diastolic blood pressure exceeds 80mmHg (120/80mmHg) and the systolic blood pressure exceeds 120mmHg, this level of mean pressure is reached. Systolic pressure of 160mmHg and diastolic pressure of 100mmHg (160/100mmHg) are considered hypertensive by several cardiologists (Carretero and Osparil, 2000).

Along with several other community studies, the occurrences of hypertension in Nigeria has risen from 11.2% in the 1990s to 27.9% in 2010 in the Niger Delta and 22.6% in 2009 in a sub-urban Christian dominated community in South-West Nigeria (Wokoma and Alasia, 2011; Adefuye *et al.*, 2009). NCDs account for at least 20% of all fatalities in Nigeria (WHO, 2011), and up to 60% of patients admitted to most tertiary hospitals (Unachukwu *et al.*,2008). Furthermore, the poor treatment results for non-communicable diseases are widely noticed, prompting the World Health Organisation to call for a positive and progressive change in health care delivery in favor of preventative and more proactive care (WHO, 2002).

With a prevalence of 5% to 10%, hypertensive disorder are the most common medical consequences of pregnancy, and they are the second largest cause of maternal death in the United States, after venous thromboembolism (Collier and Molina, 2019). Prenatal care and particular attensions paid to the management of hypertension during pregnancy have reduced death rate associated with antenatal hypertension dramatically (Kattah and Garovic, 2013). Hypertension can develop during pregnancy or develop spontaneously in the postpartum period, posing a risk to the mother health. These dangers are amplified because many patients come after being discharged from the hospital and go unnoticed due to a lack of medical supervision following delivery (Ghuman *et al.*, 2009).

Complications such as heart failure, cerebrovascular accidents, and acute oliguric renal failure have been recorded as risk factors in women with postpartum hypertension (Ojogwu and Ofili, 2011). Hypertension specialists are frequently relied upon to advise obstetricians on how to manage hypertension in the postpartum period, it is important for them to become familiar with the examination and treatment of women during postpartum period (Ghuman *et al.*, 2009). Due to the great complexity of medical problems and cognitive limitations, physicians are prone to making mistakes. Medical decision-making is difficult since even seemingly basic problems necessitate a great amount of knowledge (Hall and Walton, 2004). There is currently no effective model for assessing the likelihood of postpartum hypertension risk by the identification of key variables.

Fuzzy Logic has grown in prominence in recent years as its capacity to address a variety of problems in the field of medicine has been demonstrated to be exceptional. It has been used in medical domains such as medical diagnostics, pregnancy risk, and feature extraction. Fuzzy logic is used to model and manipulate imprecise and subjective knowledge in the same way as humans do (Wanqing et al., 2010). This study developed a model to predict the risk of postpartum hypertension in Nigerian nursing mothers, with a high, well-balanced sensitivity and specificity, to be able to predict during the first four weeks following childbirth. This model can be utilized to aid expert obstetricians in the early detection and treatment of postpartum hypertension in the future.

Related Works

Baheti (2016) performed a review of related work regarding the "application of fuzzy logic in the diagnosis of various diseases. The study involved the identification of the need for a framework via which expert systems for medical diagnosis could be presented. The review revealed a great number of applications of fuzzy logic to disease diagnosis especially terminal and cardiovascular diseases. The study was limited to the applications of fuzzy logic to diseases management in India.

Sarumi (2015) developed a "cardiovascular disease monitoring system using a combination of fuzzy logic theory and Web technologies". The study was limited in scope to the monitoring of the risk of heart failure by considering stages A, B and C. The developed system was able to classify the risk of the stages of heart failure based on the assessment of risk factors (if any), laboratory tests taken (if any) and the symptoms observed (if any). The study was not able to validate the model using a live dataset and as a result of this, the performance of the model in monitoring the risk of heart failure was not assessed. Obahiagbon and Odigie (2015) proposed a "framework for the intelligent remote monitoring and control of blood pressure in developing nations". Application of wireless communication and remote sensing technologies were used in the study to monitor the vital signs of individuals with high blood pressure. The study only monitor high blood pressure with no adherence to the effect of high blood pressure on the individuals monitored, for example, hypertension risk assessment. Apart from blood pressure, there are other important vital signs in the human body that requires monitoring.

Bolaji (2014) proposed a "health monitoring system for hypertensive patients in rural Nigeria". The design of the data model for the monitoring system was done using Unified Modeling Languages (UML), while the system was implemented using JAVA. A simulation of a real time mobile health monitoring system was proposed using GPRS-enabled technology. The result of the study showed that medical data could be routed from mobile sensor implants using GPRS to patients' records which will be explained by the specialists. The system can only be used for storage and retrieval of information, while human intervention is required to process information.

Srivastava *et al.* (2013) applied soft computing technique to the classification of diseases. The study involved the use of fuzzy logic technique in influencing decision making concerning the classification of hypertension. Membership functions were used to formulate the models using the variables identified for monitoring the risk of hypertension. The results of the study showed that the models proposed had the capacity to effectively classify the risk of hypertension, but was not validated using live datasets.

Srivastava and Srivastava (2012) applied fuzzy logic technique to the problem of diagnosing hypertension. Triangular and trapezoidal membership functions were used to formulate the fuzzy logic system using the values of the risk factors considered for the study. The results of the study showed that the model was able to determine the percentage of the risk of hypertension in an individual, but was not validated using live patient datasets. Apart from the risk factors of hypertension, there are other variables necessary for diagnosing hypertension like possible target organ damage or clinical conditions.

- Djam and Kimbi (2011) presented a "Web-based fuzzy logic system for the management of hypertension". Fuzzy membership functions were used to formulate the model, while PHP and

SQL were used to implement the Web-based system and the integration of the model using the blood pressure, BMI, and age of the individual. The results of the study showed that the system could be used to determine the percentage of the risk of hypertension. The model was not validated prior to its integration into the web-based utilizing the model as the business logic for the system.

Methodology

The methodological approach starts by identifying the various variables relevant for identifying the risk of postpartum hypertension followed by the process of model formulation using the fuzzy membership functions and rule-base required for the inference engine of the fuzzy inference system was also elicited using the variables identified for the risk of postpartum hypertension. The specific methods are described as follows:

- Data collection and Interview with gynecologists and cardiologists following the review of related works was conducted.
- Identifying and analyzing the factors responsible for causing postpartum hypertension in order to understand and establish their relationship with postpartum hypertension risk.
- Fuzzification of all variables (input factors and output), MATLAB Fuzzy logic Toolbox was used as the simulation environment.
- The membership function which corresponds to each respective labels of every identified variables were identified.
- The fuzzy inference system was developed to formulate the predictive model for the risk of postpartum hypertension.

Development of Fuzzy Inference Model for Postpartum Hypertension Risk

The Fuzzy Inference System (FIS) is a rule-based system. It is a tool used to represent different forms of knowledge about a problem. FIS is used to model the interactions and relationships that exist between variables of a domain field. FIS takes into consideration all the fuzzy rules in the rule base and learnt how to transform a fuzzified set of inputs to their corresponding fuzzified outputs as shown in Figure 1. FIS consists of four sub processes which are:

I. Fuzzification: This Fuzzification of variables involved the conversion of the crisp values assigned to the variables (both input and output) into their respective fuzzy logic linguistic variables defined by a mathematical model called a membership function;

II. Rule production: Rule Definition which involved identifying all possible rules which make clear by explanation the relationship between the values of input variables and the value of the output variables using IF-THEN rules – based on knowledge elicited from experts;

III. Aggregation of Fuzzy Rules: Aggregation involved the combination of all the fuzzified output mappings generated from the rules defined in the inference engine into a single fuzzified output map of linguistic value; and

IV. Defuzzification: Defuzzification is the conversion of single output fuzzy linguistic values created by aggregation into the original crisp values of the output variable for determining the class to which the risk of post-partum hypertension is classified.
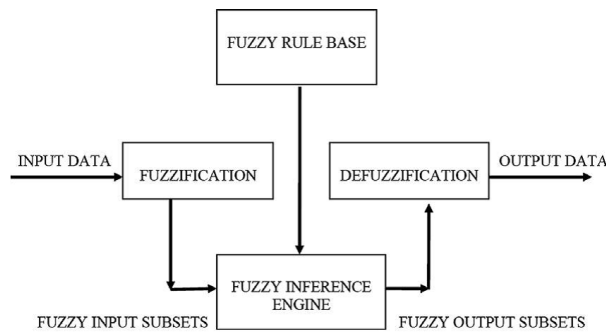
Figure 1: Schematic diagram showing a fuzzy inference system

Formulation of Fuzzy Logic Model for Post-partum Hypertension

For the purpose of fuzzification of the identified variables, it was important to create a crisp value for which linguistic variables will be allocated to a set of intervals within the defined crisp value. Figure 2 shows a triangular membership function for the fuzzification process. The triangular membership function used represents each linguistic variable defined within an interval [x, z] using the function in Equations 1 and 2.
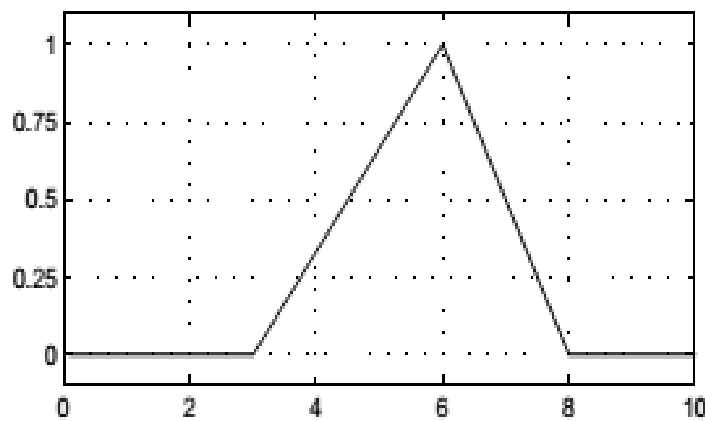

Figure 2: Triangular membership function with (x, y, z) equal to (3, 6, 8)

$$f(a; x, y, z) = \begin{cases} 0, & a \leq x \\ \frac{a-x}{y-x}, & x \leq a \leq y \\ \frac{z-a}{z-y}, & y \leq a \leq z \\ 0, & z \leq x \end{cases} \tag{1}$$

$$f(a; x, y, z) = \max\left(\min\left(\frac{a-x}{y-x}, \frac{z-a}{z-y}\right), 0\right) \tag{2}$$

The interval [x,y,z] is the horizontal crisp value of the triangular membership function such that b located at the centre is usually in line with the apex of the triangle, while a and c are the extreme points (minimum and maximum) of the triangle where z > x and all points lie within the horizontal interval of [x, z]. All the input and output variables were fuzzified using the triangular membership function. All variables were divided into linguistic variables (labels) for which a triangular membership function was formulated for each label.

Therefore, a variable with two labels would be given crisp values with centres 0 and 1 with intervals [-0.5 0 0.5] and [0.5 1 1.5] respectively while variables with three labels would be assigned crisp values with centres 0, 1 and 2 with intervals [-0.5 0 0.5], [0.5 1 1.5] and [1.5 2 2.5] with which Equation 1 was used to assign the respective fuzzified linguistic value based on the crisp value which lie along all points within the crisp interval defined for each triangular membership function.

Identification of variables

Following an extensive interview with expert cardiologists and obstetricians for understanding of the factors relevant for the identification of the risk of postpartum hypertension in nursing mothers. To accomplish this task, a number of variables were identified alongside their respective labels. The variables identified from literature reviewed and the interviews with experts having their own identifiable labels were fuzzified using the triangular membership function with their respective crisp interval defined. The identifiable variables with their labels are presented as follows:

- **High Blood Pressure during last pregnancy**: It is a measure of the systolic and diastolic blood pressure of the body, the risk of postpartum hypertension increases with the development of gestational hypertension. The variables have two nominal values No and Yes which were assigned crisp values of 0 and 1 respectively.
- **Obesity**: It is a measure of the worst state of the nutritional status of a woman which was measured using the weight and height, the risk of postpartum hypertension increases with the likelihood of a nursing mother being obese. The variables have two nominal crisp values No and Yes which were assigned crisp values of 0 and 1 respectively;
- **Family History of post-partum hypertension**: Having a first-degree family member (mother or sister) increases the likelihood of postpartum hypertension. The variables have three nominal crisp values No which was assigned 0, Second Generation which is assigned 1 and First Generation which was assigned 2.

Age: The risk of postpartum hypertension increases for women aged younger than Fuzzification was the first process in the process of modelling the fuzzy logic system for post-partum hypertension in nursing mothers. The first step in the modelling of the controller was the fuzzification of crisp values (labels) of the input and output variables to be accepted by the fuzzy inference system. In the process of Fuzzification, each value of a variable (input and output) was mapped with a membership function in order to establish the degree of membership for which the crisp values of variables are mapped to fuzzified values of a triangular membership function. Table 1 gives a description of the input and output (risk of post-partum hypertension) variables identified, their respective linguistic values (labels) as presented alongside the crisp values to be assigned for the fuzzification of each value of the – two membership functions were used for a variable with two labels while three was used for a variable with 3 labels.

- **20 or older than 40 years of age**. The variables have three nominal crisp values: between 20 and 40 years which was assigned 0, below 20 years which was assigned 1 and above 40 years which was assigned 2.
- **Having multiple births**: having twins or more babies increases the risk of postpartum hypertesion in nursing mothers. The variables have two nominal crisp values: No which was assigned 0 and Yes which was assigned 1.

- **History of Smoking**: Having a history of smoking increases the risk of having postpartum hypertension. The variables have nominal crisp values No which was assigned 0 and Yes which was assigned 1
- **History of alcohol**: Having a history of alcohol increases the risk of having postpartum hypertension. The variables have two nominal crisp values No which was assigned 0 and Yes which was assigned 1.
- **Risk of post-partum hypertension**: This is the output variable to be determined from the values of the input variables identified. The variable was defined using four (4) labels namely: no risk, low risk, moderate risk and high risk based on the intensity of the risk of post-partum hypertension in the nursing mother.

Fuzzification of variables

Table 1: Fuzzification of the variables for Post-partum Hypertension

Variable Type	Variable Name	Linguistic Variable	Crisp Interval value
INPUT	High Blood Pressure during last pregnancy	No	[-0.5 0.0 0.5]
		Yes	[0.5 1.0 1.5]
	Obesity	No	[-0.5 0.0 0.5]
		Yes	[0.5 1.0 1.5]
	Family History	No	[-0.5 0.0 0.5]
		Second Generation	[0.5 1.0 1.5]
		First Generation	[1.5 2.0 2.5]
	Age	20 to 40 years	[-0.5 0.0 0.5]
		Below 20 years	[0.5 1.0 1.5]
		Above 20 years	[1.5 2.0 2.5]
	Having Multiples	No	[-0.5 0.0 0.5]
		Yes	[0.5 1.0 1.5]
	History of Smoking	No	[-0.5 0.0 0.5]
		Yes	[0.5 1.0 1.5]
	History of Alcohol	No	[-0.5 0.0 0.5]
		Yes	[0.5 1.0 1.5]
OUTPUT	Risk of Postpartum Hypertension	No	[-0.5 0.0 0.5]
		Low	[0.5 1.0 1.5]
		Moderate	[1.5 2.0 2.5]
		High	[2.5 3.0 3.5]

Development of the IF-THEN rules of inference engine

In the central part of the Fuzzy Inference System model developed for the risk of post-partum hypertension in nursing mothers lies the Inference Engine which holds the rules that define the mapping for a combination of input variables to an output variable. These rules were presented by the medical experts which were interviewed earlier in the study and they compose of the combination of the labels (or crisp values) of the input variables needed for determination of the respective risk of post-partum hypertension in nursing mothers.

These rules were presented as a set of IF-THEN statements written in such a way that the IF-part that holds the condition giving a value is called the antecedent, while the THEN-part that holds the conclusion to the value(s) of the condition is called the consequent. A typical fuzzy rule is of the form

IF(in1=label)and(in2=label)and···(inN=label) THEN (out=label).

Where label is the linguistic value of each variable

If an inference engine has i variables each with a number of linguistic values (labels) then the possible number of rules that can be determined is a product of the number of labels for all variables considered for the problem as shown in Equation 3 where $n(labels_{variable,i})$ is the number of labels for $variable_i$:

$$\#Rules = \ n(labels_{variable,1}) * n(labels_{variable,2}) *..* n(labels_{variable,i}) \quad (3)$$

For the purpose of this study, the total number of possible rules was elicited as a product of all the labels for each variable identified for this study. The final set of possible rules that shows the possible combination of the labels of each variable with respect to the risk of post-partum hypertension in nursing mothers was elicited form the expert based on the experience in the area of identifying postpartum hypertension risk in nursing mothers.

Aggregation

Each rule of the fuzzy inference engine gives an output fuzzified thus resulting in multiple output fuzzified functions (triangular membership functions) which is based on the number of rules presented. All thee output fuzzified membership functions must be combined into a single output triangular membership function using the process called aggregation. Two methods are commonly used to arrive at aggregation, namely: minimum which returns the lowest fuzzified value from all the values of the input for a rule and the product which returns the product of fuzzified values from all the values of the input for a rule operation method. The minimum method was used for the aggregation of the fuzzified output of all the rules generated in the fuzzy inference engine to produce a single output triangular membership function.

Defuzzification

Since the output of aggregation is a single output triangular membership function which must be converted using defuzzification into a crisp value within the crisp interval of the output variable – the risk of post-partum hypertension in nursing mothers. In this study, centroid method was applied for the defuzzification of the final output aggregated triangular membership function and identifying the crisp value of the risk of post-partum hypertension in nursing mothers.

Results and discussion

The results of the simulation using the MATLAB Fuzzy Logic Tool-Box was presented showing the surface plots and the rules plots used for testing the values of the identified variables for the validation of the rules proposed by the experts. Figure 2 shows the schematic diagram of the Fuzzy Inference System (FIS) representing the predictive model for postpartum hypertension risk. The Figure consists of six inputs representing the risk factors of postpartum hypertension risk on the left side while the output postpartum hypertension risk is shown on the far-right hand side of the diagram. The centre consists of the inference engine which contains the rule base – set of IF-THEN rules that show the relationship that exists between the set of input variables and the output variable.
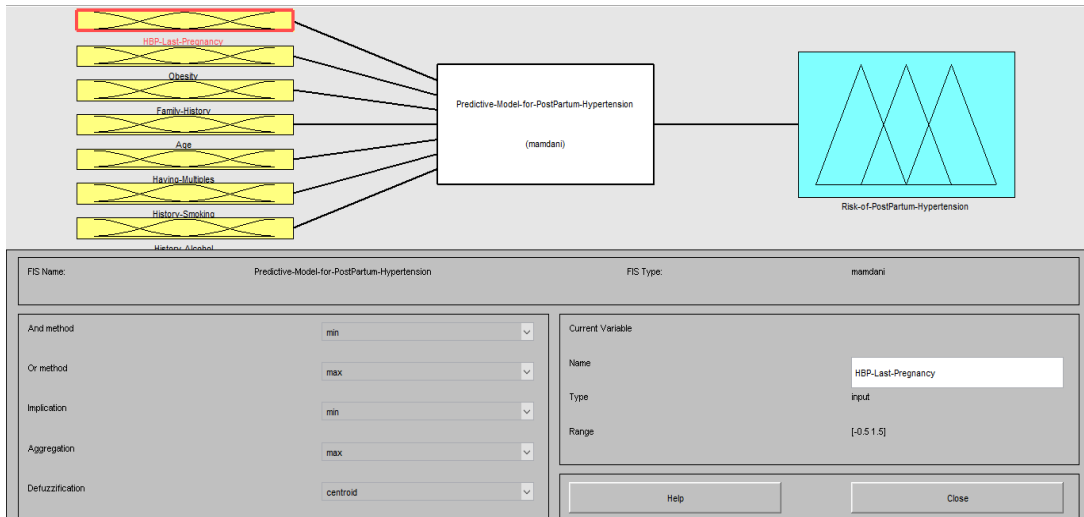
Figure 3: Fuzzy Inference System for Postpartum hypertension Risk

There are two main stages required in the process of fuzzification, which included the derivation of the membership functions for both the input and output variables alongside the linguistic representation of these functions. The triangular membership functions were adopted for this study because of the variation in the data representing the variables which did not require any non-linear description. The input variables that were used in developing the selected fuzzy logic model for postpartum hypertension risk prediction used a number of triangular membership function that was proportional and equal to the number of values of each respective variable considered for the risk of postpartum hypertension while the fuzzification parameters for the triangular membership function were proposed. The formulation of the triangular membership functions used for the variables identified for the study are describes as follows.
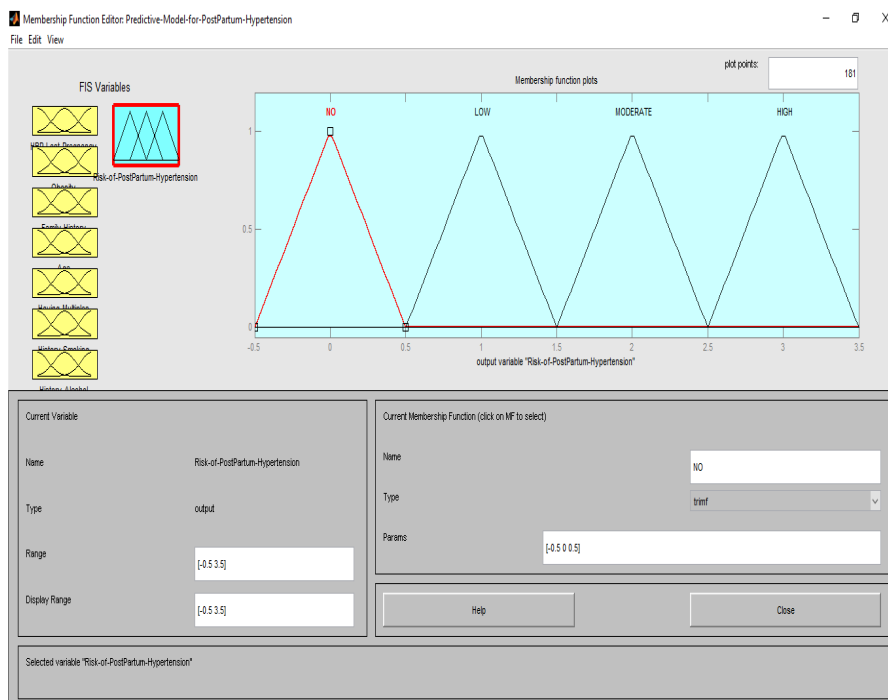

Figure 4: Fuzzification of Postpartum hypertension Risk

The fuzzy sets that were defined using membership functions were also manipulated using fuzzy operators with the use of rules that define the required relationship. The IF-THEN rules formulated were used to define the conditional statements that comprise the fuzzy logic. These conditional statements are domain specific information which was provided by the health physician via knowledge elicitation process which in this case involved the use of a structured interview. Figure 3 shows a description of the rule editor interface used in inserting all 288 rules elicited from the expert into the inference engine of the fuzzy model for the prediction of postpartum hypertension risk. The values of each variable were selected from the bottom part of the interface where each attribute was defined and the rules were added following the selection of the required values for the rules provided.
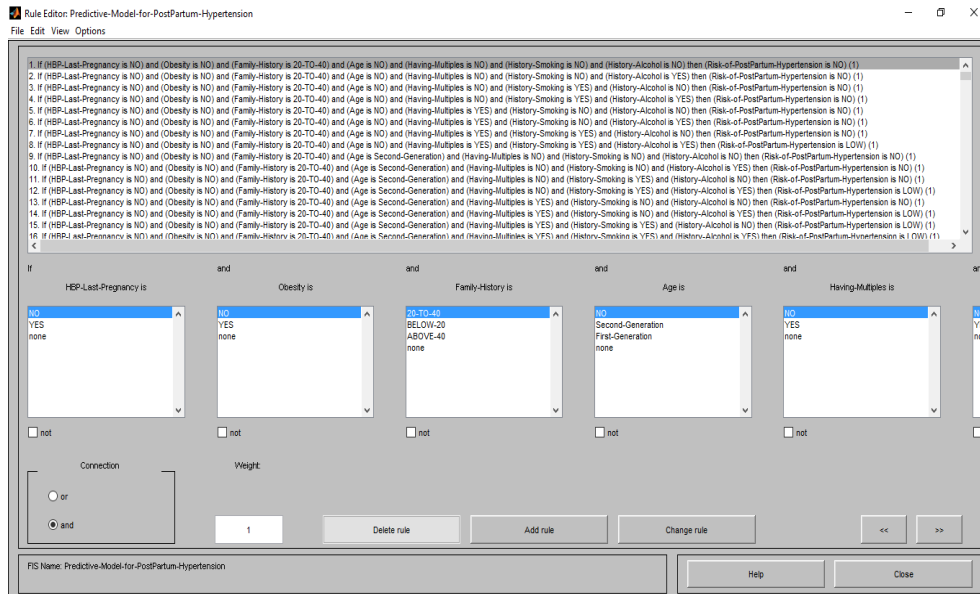

Figure 4.3: Rule Base consisting of the Inference engine

Figure 4.4: Aggregation and defuzzification of Postpartum Hypertension Risk

Summary and Conclusion

Postpartum hypertension is a serious problem to nursing mothers today in most developing nations and its threat is a serious deadly disease in Nigeria, especially those with insufficient health facilities which are inadequate to cater for the necessary health needs. It is responsible for the deaths of many Nigerians including children and nursing mothers. In this study, monitoring the risk of postpartum hypertension among Nigerian nursing mothers has been provided and thus a means to alleviate the risk of the deadly scourge of the disease. The results of the study revealed that fuzzy logic-based models capture the vagueness of real-life measurements with simplicity using membership functions. The results further revealed that the triangular membership function served as a good model for representing the fuzzification of the variables. It was also observed that the number of triangular membership function formulated for each variable is a function of the number of classified labels for each variable. The results also showed that a total number of 288 rules were defined by the IF-THEN statements created from the variables identified by the experts. The study concluded that fuzzy logic models are effective for the formulation of the real-life variables using fuzzification which can be later defuzzified following the process of inference rule generation and the aggregation of rule outputs. The study also noted that the fuzzy logic model can be integrated into existing health information systems used in monitoring the identified variables for the early detection of postpartum hypertension among nursing mothers. The study has implication in improving the decision-making process that affects the early detection of postpartum hypertension.

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Unlocking human potential for institutional excellence: an examination of talent management practices and employee productivity in Ogun State universities, Nigeria

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ABSTRACT

This study examines the relationship between talent management practices and employee productivity in Ogun State universities, Nigeria. The study aimed to investigate the influence of talent management on employee productivity and identify strategies for unlocking human potential and driving institutional excellence. A survey research design was used, and data were collected with a self-structured questionnaire from 586 academic and non-academic employees of four selected universities in Ogun State and simple random sampling technique was employed, the research instrument was validated by the average variance (0.831). Cronbach's alpha of the scale for the variable was greater than 0.70, which suggest that instrument was reliable and data gathered was analyzed using descriptive and inferential statistics (simple linear regression analysis). The result showed there was a positive influence talent management on employee productivity in universities in Ogun State at the value of (β= .517, t = 14.791, p< 0.05), supporting previous research that effective talent management practices improve employee productivity. The study also showed a significant relationship between talent management and organizational performance, emphasizing the importance of talent management in achieving organizational objectives. The study recommends that universities in Ogun State should develop and implement effective talent management programs, invest in training and development programs, and conduct regular assessments to evaluate the effectiveness of their talent management practices.

Keywords: Talent management, Employee productivity, Institutional excellence, Ogun State universities, Nigeria.

Introduction

In today's knowledge-driven economy, institutions of higher learning are facing increasing pressure to improve their performance and productivity (Bryson, 2017). Universities, in particular, are expected to produce high-quality research, innovative solutions, and skilled graduates who can drive economic growth and development (Etzkowitz, Webster, Gebhardt & Terra, 2000). To achieve these goals, universities must effectively manage their most valuable resource: human talent (Blass & Hayward, 2020). Talent management practices, such as recruitment, training, and development, performance

management, and retention, are crucial for unlocking human potential and driving employee productivity (CIPD, 2020). Talent management practices are critical for unlocking human potential and driving employee productivity in institutions of higher learning (Blass & Hayward, 2020). Effective talent management practices can lead to improved job satisfaction, increased employee engagement, and enhanced organizational performance (Alfes, Shantz & Truss, 2013). In the context of Ogun State universities, Nigeria, talent management practices are crucial for driving institutional excellence and achieving strategic objectives.

In developing countries, including those in Africa, the challenges of talent management are exacerbated by factors such as brain drain, limited resources, and inadequate infrastructure (Mohammed, 2018). Nigeria, with its large and growing youth population, is no exception. The country's universities are expected to play a key role in driving economic growth and development, but they face significant challenges in terms of funding, infrastructure, and human resource capacity (Nwachukwu, 2019). Ogun State universities, located in southwestern Nigeria, are among the institutions facing these challenges. Despite their potential, these universities struggle with low productivity, high turnover rates, and inadequate talent management practices (Adeyemi, Oyewunmi & Oladele, 2020). In fact, a recent study found that Nigerian universities lose up to 50% of their staff annually due to poor working conditions, inadequate compensation, and lack of opportunities for professional development (Adeyinka, Oyewole & Ogunleye, 2017). The problem of inadequate talent management practices and low employee productivity in Ogun State universities is a pressing concern that requires urgent attention. With over 100,000 students and 5,000 employees, Ogun State universities have the potential to drive economic growth and development in the region (National Universities Commission, 2022). However, the inability to effectively manage talent can lead to - High turnover rates, with up to 50% of staff leaving annually (Adeyinka *et al.*, 2017), - Low productivity, with an average employee productivity rate of 2.5/5 (Adeyemi *et al.*, 2020), - Inadequate human resource capacity, with a staff-to-student ratio of 1:200 (National Universities Commission, 2022).

Employee productivity in universities is significantly influenced by the skills, knowledge, and experience of employees, which are direct outcomes of effective human capital management (Oke, Ojo & Oladipo, 2022). In Nigeria, managing human capital is a complex task that requires careful attention, as the quality of the workforce and human capital management capabilities directly impact organizational performance (Ojo, Oke & Oladipo, 2020). While financial constraints were previously considered the primary obstacle to developing educational institutions in Nigeria, the inability to employ and retain high-quality human capital is now recognized as a more significant challenge (Nwachukwu, 2021). Despite these challenges, research has consistently shown that effective talent management practices can lead to improved job satisfaction, increased employee engagement, and enhanced organizational performance (Alfes *et al.*, 2013). In Nigeria, where the higher education sector is characterized by low productivity and high turnover rates (Adeyemi *et al.*, 2020), the need for effective talent management practices is more pressing than ever. This study aims to examine the relationship between talent management practices and employee productivity in Ogun State universities, with a view to identifying strategies for unlocking human potential and driving institutional excellence.

Objective of the study

The objective of this study was to examine the influence of talent management on employee productivity of selected universities in Ogun State, Nigeria

Research Question

How does talent management affect employee productivity of selected public and private universities in Ogun State?

Hypothesis

In line with the objective of this study, and in order to provide answer to research question above, a null hypothesis was formulated and tested at P value of 0.05:

Ho1: Talent management has no significant influence on employee productivity of selected public and private universities in Ogun State.

Literature Review

Human Capital Management

Human capital management involves practices that address organizational needs by providing specific competencies and treating employees as assets whose value can be enhanced through investment (Oke *et al.*, 2022). It encompasses workforce planning, recruitment, employee training, and analytics to achieve optimal performance (Oke *et al.*, 2022). Human capital management can be measured through drivers such as leadership practices, employee engagement, workforce optimization, knowledge accessibility, and learning capacity (Blass & Hayward, 2020, 2020). Effective human capital management is crucial for talent management and employee productivity, as it informs strategic decisions and enhances organizational performance (Blass & Hayward, 2020). However, in Nigeria, human capital management practices are often guided by parochial interests, leading to casualization, lack of compensation packages, and limited career development opportunities (Ojo *et al.*, 2020). These negative practices erode employee commitment, dampen morale, and lead to turnover intentions (Ojo *et al.*, 2020).

Talent Management

The concept of talent management emerged in the 1980s and 1990s as human resource departments shifted from administrative tasks to strategic planning and employee management (Oke *et al.*, 2022). Human resources play a crucial role in developing competitive compensation packages, serving as a central point for employee well-being, and facilitating effective communication (Oke *et al.*, 2022). Talent management has become a global challenge, with organizations competing for a limited pool of skilled employees to drive growth and profitability (Singh & Sharma, 2020). Talent management involves identifying, developing, and retaining high-potential employees to fill strategic roles and achieve organizational objectives (Blass & Hayward, 2020). Its primary goal is to ensure the right people are in the right jobs at the right time, fostering an environment that encourages commitment and optimal performance (Blass & Hayward, 2020). According to the Chartered Institute of Professional Development (CIPD, 2020), talent management focuses on developing individuals who can significantly impact organizational performance. Effective talent management ensures that organizations have the necessary skills and expertise to execute their business strategy (CIPD, 2020).

Concept of Employee Productivity

Productivity refers to the relationship between outputs and inputs, where an increase in output with a less than proportionate increase in inputs or the same output produced with fewer inputs indicates a rise in productivity (Oke *et al.*, 2022). Productivity can be measured in monetary terms, employment rates, wage rates, job satisfaction, and market share, among others (Blass & Hayward, 2020). It is a measure of the quantity and quality of work done, considering the cost of resources used, and is crucial for an organization's competitive advantage (Oke *et al.*, 2022). Productivity is not just about producing more, but also about using fewer resources to achieve the same output (Blass & Hayward, 2020). Human resources play a critical role in productivity, and various HR activities such as pay, appraisal systems, training, selection, job design, and compensation are designed to impact individual or organizational productivity (Ojo *et al.*, 2020).

Talent Management and Employee Productivity

Research has shown that effective talent management practices significantly impact organizational productivity (Oke *et al.*, 2022). A study conducted in a public sector enterprise found that implementing proper talent management policies, processes, and programs led to increased employee productivity (Oke *et al.*, 2022). Another study in a major telecom company in India revealed that effective talent management practices led to enhanced employee engagement, reduced attrition, and increased average employee tenure (Singh & Sharma, 2020). The study emphasized the importance of defining organizational capabilities in terms of skills, knowledge, ability, and behavior, and conducting gap analyses to identify employee competency deficiencies (Singh & Sharma, 2020). Furthermore, the study highlighted the need for mandatory talent management practices to foster innovative ideas, drive organizational growth, and ensure the right people are selected for the right jobs at the right time (Oke *et al.*, 2022).
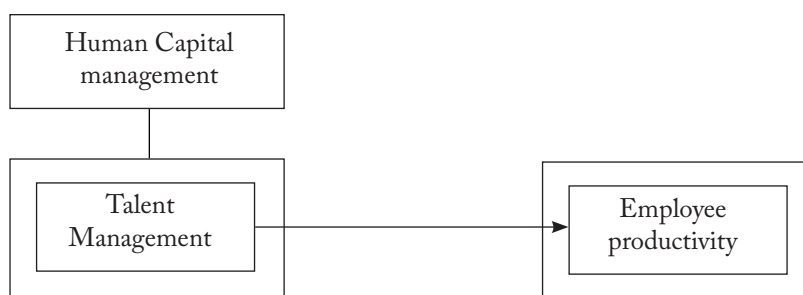

Figure 1: Conceptual Framework

Theoretical Framework

This study is grounded in Human Capital Theory, which posits that employees are a crucial asset for organizations to achieve their objectives and goals (Yusuf *et al.*, 2022). Human Capital Theory is considered the most relevant framework for understanding the relationship between human capital management and employee productivity. The theory emphasizes the importance of human capital management measures such as leadership practice, employee engagement, knowledge accessibility, workforce optimization, and talent management (Wang *et al.*, 2022). Human capital refers to the knowledge, expertise, and skills acquired through education and training, and is concerned with the quality, rather than quantity, of the labor supply (Khan *et al.*, 2022).

Methodology

Survey research design was adopted for the study. The population of this study consists of academic and non-academic employees of the four (4) selected universities Babcock University, Covenant University, Federal University of Agriculture, Abeokuta and Olabisi Onabanjo University located in Ogun State which amounts to 6,058 employees. Using Cochran (1997) equation, the sample size was 586 university employees and random sampling technique was employed. A self-structured questionnaire was administered to the respondents, the research instrument was validated by the average variance (0.831). The Cronbach's Alpha coefficient confirms the reliability of the instrument, which suggests that the instrument used for evaluation is highly reliable and data gathered was analyzed using inferential statistic (simple linear regression analysis).

Model Specification

The model used in establishing relationships between the variables of the study were specific in this section as:

Where: X = Talent Management (TM) (Independent Variables)

$\quad$ Y = Employee Productivity (Dependent Variable)

Therefore, functional relationship is expressed as:

Hypothesis

$Y = f(X)$

$Y = a_0 + \beta_1 X_1 + \varepsilon i$

$EP = a_0 + \beta_1 TM + \varepsilon i$ _____ (1)

Result and Discussion

Talent Management has no significant influence on employee productivity of selected Universities in Ogun State.

In order to test the null hypothesis, simple linear regression analysis was used. The data for talent management and employee productivity were created by summing responses of all items for each of the variable. The result of the regression was presented in Table 1.

Table 1: Simple Regression Analysis Result for the Influence of Talent Management on Employee Productivity of selected Universities in Ogun State

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig
		B	Std. Error	Beta		
1	(Constant)	16.846	1.596		10.556	.000
	Talent Management	.517	.035	.524	14.791	.000
R = 0.524; $\quad$ R^2 = 0.274; $\quad$ F(1,579) = 114.850						

The result in table 1 revealed that talent management had a significantly effect on employee productivity of selected Universities in Ogun State (β= .517, t = 14.791, p<0.05). The result also revealed that talent management explained about 27.4% of the variation in employee productivity of selected Universities in Ogun State (R^2 = 0.274, p<0.05). The result was supported by F-statistic of 114.850 with p-value of 0.000 which shows that talent management is statistically significant in explaining changes in employee productivity of selected Universities in Ogun State.

The equation found for the regression was the following:

$$= EP+TM$$

Where:

EP = Employee Productivity

TM = Talent Management

$$=16.846 + 0.517 \text{_____} \tag{1}$$

The regression equation above shows that the parameter estimate of talent management follows the a priori expectation which says that talent management will have positive effect on employee productivity of selected Universities in Ogun State. The equation shows that when talent management is constant at zero, employee productivity level was 16.846 implying that without talent management, employee productivity of selected Universities in Ogun State would be 16.846. The coefficient of talent management was 0.517. This indicated that an increase in the talent management leads to an increase in employee productivity of selected Universities in Ogun State with a value of 0.517. This implies that an increase in talent management wills subsequently increase employee productivity of selected universities in Ogun State implying that the model EP = 16.846 + 0.517 is significantly fit. Therefore, the null hypothesis (H01) which stated that talent management does not significantly affect employee productivity of selected Universities in Ogun State is hereby rejected.

Discussion of Findings

The study's findings revealed a significant positive impact of talent management on employee productivity in selected universities in Ogun State. This supports previous research by Oke et al. (2022), which found that effective talent management practices improve employee productivity. Additionally, the study showed a significant relationship between talent management and organizational performance, consistent with Blass & Hayward (2020), who emphasized the importance of talent management in achieving organizational objectives. However, the concept of talent management remains complex, with various definitions and interpretations (Ojo et al., 2020). Nevertheless, research by Oke et al. (2022) confirms that organizations recognize the strategic value of talent management programs, despite facing challenges in implementation.

Conclusion

In conclusion, this study investigated the relationship between talent management practices and employee productivity in Ogun State universities, Nigeria. The findings revealed a significant positive impact of talent management on employee productivity, supporting previous research that effective talent management practices improve employee productivity. The study also showed a significant relationship between talent management and organizational performance, emphasizing the importance of talent

management in achieving organizational objectives. However, the concept of talent management remains complex, with various definitions and interpretations. Despite facing challenges in implementation, organizations recognize the strategic value of talent management programs. Therefore, universities in Ogun State should prioritize talent management practices to unlock human potential, drive employee productivity, and achieve institutional excellence.

Recommendations

Based on the finding and conclusion of this study, the following recommendation were made:
- Universities in Ogun State should develop and implement effective talent management programs to improve employee productivity and organizational performance.
- Talent management practices should be tailored to meet the specific needs of each university, considering factors such as size, structure, and culture.
- Universities should invest in training and development programs to enhance the skills and competencies of their employees.
- Universities should conduct regular assessments to evaluate the effectiveness of their talent management practices and make necessary adjustments.

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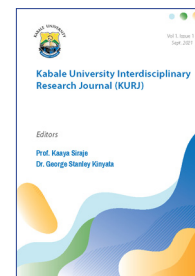
Christian doctrines and the death of Osinachi: social work intervention with women in intimate partner violence in Nigeria

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ABSTRACT

This paper x-rayed the spate of Christian doctrines as a resistance for Christian women to stay in violent intimate relationship using Mrs. Osinachi as our case study. It espoused the counsels and teaching of the Christian doctrines and how these are employed to manipulate women to accept and continue to endure the harsh and intimidating relationships with their partner. The paper also established that the custodians of the Christian doctrines who are mainly men amplify the verses of the Bible that focus primarily on women to be submissive while they are silent about the areas that command men not to abuse their wives. The paper adopted literature scoping research method alongside reflexive research method to gather the required data. Content analysis was use to analyzed secondary data which were comprehensively reviewed and important themes isolated and analyzed based on the aim of the study. The paper recommends social work profession that is capable of providing effective intervention to empower and liberate to women from abuse and all forms of religious and cultural oppression which has in the past rendered them voiceless and helpless.

Keywords: Christian Doctrines, Intimate Partner Violence, Osinachi, Social work, Nigeria

Introduction

Globally, abuse of women in intimate relationship has becomes a public concern and a criminal offence that violates the rights and human dignity of women (Wessells & Kostelny, 2022). Women/ wives are frequently the major sufferers of the violent behaviour occurring in the home environment (Khemthong & Chutiphongdech, 2021). Empirical evidences posits that one in every three women experience at least one form of violence in her life time culminating in severe injury or death in certain conditions (World Health Organization (WHO), 2005, Abayomi, 2014 and Day & Thakar, 2022). In the United States of America, 4.8 million women sufferers physical assaults and rape from their intimate partner. Record reveals that 1000 to 1600 women die each year in the United States at the hands of their male partners due to enduring and escalating mode of battering. These numbers exclude women who died of self-murder as an escape route from violent intimate relationship or who die living on the street in an attempt to avoid their partner abusing them (Abayomi, 2014). Report from England alongside wales indicates that 140 women died yearly from uxoricide which is the death of a spouse as a result of the violent behaviour of their male partner (Devaney, 2015). The Nation Police in Peru recorded 28000 cases of women expose to intimate partner violence yearly (Abayomi, 2014).

In Nigeria, the beating of wives and children are acceptable normative order as a form of instilling discipline. Hence, when children are beaten, parents are of the opinion that they are instilling discipline in them likewise when husband beat their wives who are seen as children expected to misbehave which must be corrected. This practice becomes more severe in situation the woman is not economically self-sufficient (Aihie, 2009 and Omorogiuwa & Amas, 2020). In addition, intimate partner violence serve as a tool of enforcing obedience in women in traditional African society where her position is similar to that of child who must be subordinated (Omorogiuwa & Ukponahiusi, 2019). In traditional society, women experience of violent behaviour from their partner is perceived as a private matter that should be handled privately within the home environment without external person interference (Omorogiuwa & Amas, 2020). This is in compliance to a popular adage in Nigeria which says that "the clothes within the home must be arrange and kept within the home". This in turn promotes the culture of silence and reinforces intimate partner violence against women instead of giving punitive reward to the perpetrator of such crime (Aihie, 2009)

The consequences of intimate partner violence range from tortures and maiming of women socially, physically, psychologically, sexually and economically. It can also lead to a victim's death, and its prevalence and impacts are usually given less attention and emphasis (Khan, 2000). Also, women are faced with myriad of impediments in accessing justice and protection (UNODC, 2011). Human rights violations with abuse denied women of equality, security, dignity, self-esteem and the rights to fundamental freedom (Khan, 2000). It ruins their health and general wellbeing, and such consequences are usually accompanied by an increased constant break down in mental and physical health, socially withdrawn behaviours (also known as the battered woman syndrome), chronic diseases, and drug abuse amongst other (Trevillion; Feder & Howard, 2012 and Metz; Calmet & Thevenot, 2019).

Although a lot of scholars have written extensively on intimate partner violence (WHO, 2005, Aihie, 2009, Abayomi, 2014, Omorogiuwa & Ukponahiusi, 2019, Omorogiuwa & Amas, 2020 and Day & Thakar, 2022) and the impact of Christian doctrines on Christian women to remain in abusive intimate relationship (Beaman-Hall & Nason-Clark, 1997, Giesbrecht & Sevic, 2000, Ake & Horne, 2003 Barnett, Miller-Perrin and Perrin, 2005, Wang, *et. al* 2009). However, none of these scholars has used the person-centered approach as a lens to explore the role of the Christian doctrines in manipulating majority of Nigeria Christian women to remain in abusive intimate relationship. Hence, the aim of this paper is to fill the identified gap as this paper employs Osinachi as it case study. This paper offers social work as a tool of intervention strategies to empowers and liberate women stalk in abusive intimate relationship via the male inspire manipulative Christian doctrines. The paper employs literature scoping (journal articles, newspapers, Christian literature and bible) alongside with reflexive research methodology. Reflexive research gives the research the liberty to theorize on events, issues or social phenomenon that occurs or occurring in their context (Muridzo; Mukurazhizha and Simbine, 2022). We adopted the reflexive research because it helps us to critically reflect on the experiences of Christian women in intimate partner relationship through the reflection on the experiences of Osinachi who died of the pain inflicted on her by her husband and she was unable to make a decision to leave the abusive relationship due to her religious beliefs. Through reflexive research methodology, social workers are able to add their voice to liberate and empower oppressed individuals from conditions violating their human dignity and worth. This would however be difficult with other more complex methodologies. The paper adopted content analysis whereby existing secondary data were comprehensively reviewed and important themes isolated and analyzed based on the aim of the study.

Abuse and Death of Mrs Osinachi Nwachukwu

Mrs. Osinachi Nwachukwu was a gospel singer and a Christian faithful who believed that divorce was a sin against God. According to her family members and friends, Osinachi died of bruises and injuries she got from her husband violent behaviour. The children of the gospel singer stated that their mother went through series of abuses in the hands of her husband (their father) who they said made them to sworn to an oath so that they will not disclose his violent behaviour they experiences in their home (Akinwotu, 2022). Her death was occasioned by cluster of blood in her chest which was the result of the kicks and blows she received from her husband during the incessant fights. Prior to the incident that led to her death, she constantly experienced intimate partner violence which she decided to keep away from her family members although she confided in some of her close musical associates, but she stopped them from interfering because she believed that God will change her husband and all will be well. Another event that demonstrated the series of domestic violence Osinachi was exposed to in her marriage was the one her younger sister witnessed while in the same car with Osinachi and her husband, on their way to the burial ceremony of Osinachi's father. As the husband was driving on a high speed, Osinachi told him to take it easy and he responded by giving Osinachi a slap on her face, and her sister reacted, Osinachi pleaded with her to remain calm. Even when she was in the hospital bed and when her twin sister visited her, she had to beg her husband to allow the twin sister stay with her in order to help her nurse the excruciating chest pain she had but her husband refused and sent the sister out of the hospital (Umeh, 2022).

In order to allow peace to reign, Osinachi pleaded with her twin sister to leave since her husband refused to allow her to stay. Moreover, in another event, her husband requested for her YouTube music channel password and when Osinachi refused he spat on her and informed her that she was no long going to have access to her money in his possession. Also, whenever Osinachi was invited as a guest minister in program as gospel artist, the husband who was also her manager will insist that the honorarium be paid into his personal account, while Osinachi received little or nothing. She was so caged to the extent that her husband did not allow her to have any contact with her siblings let alone for them to visit (Umeh, 2022). Osinachi put in tremendous effort to make her marriage work and refused to seek for divorce because of her internalized Christian religious beliefs. She also did not want to be a bad role model to her followers in the event of being a divorced gospel minister.

Critical Analysis of Christian Doctrines that Condone Abuse and Forbid Divorce

Rotunda, *et al.* (2004) in their study identified four belief systems that are common in Christian literature that condone abuse. Firstly, God purpose for women is to be subordinate to men. This is because Eve was created as an appendage of Adam. Next is focus on Eve's role in the fall from grace. This explains why women are perceived to be morally inferior to men and that they cannot trust their own judgment. Thirdly, is the tenet that opines suffering as a virtue and described women as "*suffering servant.*" Hence, suffering is perceived as a sign of strength and honor – a cross that must be carried. Finally, is the belief that Christians must learn to forgive and reconcile with those who sin against them. This is misinterpreted to mean that God's forgiveness of an individual sin depends on that person being able to forgive others. On this premise are factors that influence Osinachi death.

The death of Osinachi sent shockwaves across Nigeria's Christian communities and the global society. It brought to the front burner questions about intimate violence and the extent to which Christian religious

admonitions, teachings, counsels and societal values condemn divorce, regardless of the prevailing threat it pose to the vulnerable partner who are usually women. Some of the Christian counsels and narratives presented to be logical and sensible on the surface but shielded intimate partner violence and the objectification of women as men's property (Akinwotu, 2022). As intimate partner violence continue to overwhelm Osinachi, friends and family members pleaded with her to come out of the marriage but Osinachi resisted their plea and maintained that she had faith that God was against divorce and that marriage was for better for worse according to the holy ordinance. This is the basis of Christian doctrine taken as a vow that form entangle belief system for Christian women and cripple their rational reasoning capacity and defy their human dignity. This is further worsen when their religious leader and acclaimed spiritual father emphasizes things that are capable of manipulating their minds and often times are not in agreement with the context in which it was use in the Bible.

One of the Bible passages concerning divorce states that "*God hates divorce*". This is commonly referred to and recited by Christians. It is unfortunate to note that majority of the Christians are not aware that the usually quoted part is incomplete and often taken out of context. The complete passage of the Bible states that "*For I hate divorce say the Lord, the God of Israel.*" "*To divorce your wife is to overwhelm her with cruelty, say the Lord of heaven's armies.*" "*So guard your heart, do not be unfaithful to your wife*" (Malachi 2:16). The amplified version of this particular Bible passage makes it difficult for quick and complete quoting, hence the abridged version. The abridged and incomplete quote is a manifestation of the age long ignorance which has overtime promoted abusive, domineering, oppressive and coercive partners to retain their victims in an abusive intimate relationship. The death of Osinachi was the outcomes of the injuries she sustained from her husband and the public was shocked to see one of the messages of her pastor where the pastor said that there were no Biblical grounds for divorce. This is a teaching and counsel that may have persuaded Osinachi to stay in the abusive and coercive intimate relationship in which she was brutalized and ultimately died.

Wives submit to your husbands is another Christian doctrine formed and used out of context that suffocate and tied women to abusive intimate relationship are the counsel and teaching they received during premarital counseling and in the time of marital conflict or disagreement. These counsel and teaching are usually at the favour of men. The authorities of the marital counseling committee usually counsel thus: "*Wives submit to your husbands as to the Lord.*" "*For a husband has authority over his wife just as Christ has authority over the church; and Christ is himself the Saviour of the church, his body*" (Ephesians 5:22-24). Hence, women must submit completely to their husbands just as the church submits itself to Christ. This same verse in King James Version (KJV) is further misinterpreted by custodians of the Christian doctrines to weaken the rights and voices of women not in any way challenge their husbands or be bold enough to take divorce as an option to abusive intimate relationship. "*Therefore as the church is subjected to Christ, so let the wives be to their husbands in everything*" (Ephesians 5:22-24). These verses are so emphases that it makes women to feel guilty in ensuring that their submissiveness does not endanger their lives. The custodians of the Christian doctrines emphasis less on the other part of the Bible passage which states that "*Husband, love your wives just as Christ loved the church and gave his life for it*" (Ephesians 5:22-25). The irony of inequality and supremacy is that no man wants to give up his life for his wife yet expect submission in everything. The Bible made it clear that men should love, cherish and not to treat their wives in a harsh or violent manner: "*Men ought to love their wives just as they love their own bodies.*" "*A man who loves his wife loves himself.*" "*For no man hates his own flesh; but nourishes and cherishes it, just as*

Christ does the church" (Ephesians 5:28-29). The Christian doctrines are male dominated and fail to make men realized that if they truly love and cherish their wives just as the Bible commanded them, they will not subject their wives to any form of emotional, physical, and sexual violence because of their wives' shortcomings. More so, the custodians of the Christian doctrines are often men who are usually biased. They always downplay what the Bible says in Ephesians 5:28-29 that "*In this same way, husbands ought to love their wives as their own bodies. He who loves his wife loves himself*" (Ephesians 5:28); "*For no man hates his own flesh, but nourishes and carefully protects and cherishes it, as Christ does the church*" (Ephesians 5:29).

Similarly, "*husbands love your wives, and do not be harsh to them*" (Colossians 3:19). This made it very clear that the Bible which is the bedrock of the Christian doctrines forbids men from engaging in any form of violent or abusive and discriminatory behaviour towards their wives. Because of the selfish and patriarchal nature and upbringing of men that dominates the authorities in the church, they have been silent about these particular passages of the Bible and they watered it down to continue to maintain their hegemony and enslave women in all ramifications. The men dominated authorities of the church amplified these verses in the Bible that concern wives loyalty and submission in order to deceptively make them remain submissive to their husbands' will and caprices even when their husbands are abusive, coercive, and always violate their rights and dehumanized them which are outside of the context in which those Bible verses were written. This continue to make them accept and tolerate violence ridden intimate relationships and use the denial defensive mechanism to justify their crippled reasoning faculty that has been incapacitated by myriad Christian religious admonitions, teachings, counsels and societal values that abhor divorce with the stereotyped incomplete Bible verse "*God hates divorce*": just as Osinachi allegedly put it.

Furthermore, the Christian doctrines interpreted so many Bible passages in order to make both men and women form a mental image between wife and husband as a master and slave relationship. For example, that the husband is the authority and master which must be respected, obeyed, and worshipped at all times just as the church do to Christ, and his actions and reactions must never be questioned. The wife on the other hand must be submissive seen but hard and obey her husband regardless of any inhuman treatment serve to her. The Christian doctrine counselors and teachers use first Timothy 2 verse 12 which states that "*I do not permit a woman to exercise authority over a man; rather, she is to remain quiet*" (1Timothy 2:12) and that they become a subject of abuse when they are flippant with their tongue. In any attempt for wives to act, react and speak out in order to liberate themselves from violence ridden intimate relationship, the Bible is misinterpreted again to remind her to be submissive to her husband in "*everything*" and that submission to her husband authority at all times is the virtue of a virtuous woman. She is further subdued through the misinterpretation of the book of Titus 2 verse 5 which says thus "*To be self-controlled, pure, working at home, kind and submissive to her own husband, that the word of God may not be revile*" (Titus 2:5). This passage of the Bible is what most cultures around the world have wrongly interpreted that a woman's office is in the kitchen and that women should be working at home. Finally, the last stroke that broke the camel's back so to say in this narrative says "*The wisest of women builds her home, but folly with her hands tears it down*" (Proverb 14:1). Against this premise, no woman wants to appear foolish or willing to destroy her home. With her children as the primary source of concern, she remain in the abusive intimate relationship and returns to their shell suffering and smiling and sometime in fasting and in prayers behind closed doors and hoping that God will change her abusive and cruel husband. The manners in which Christian doctrine teachers and counselors misinterpret the Bible out of

context in their teachings, counseling and narratives constantly make women victims of intimate partner violence with the flimsy excuses that they are not submissive enough to their husband, even when the husbands refuse to love, nourish, cherish and give his life for his wife.

Decision Making Process of Christian Women in Intimate Partner Violence Relationship

The boldness for women to remain or move out from an intimate abusive relationship usually takes a lot of time for them to make such difficult and complex decisions. The victim takes their time to evaluate series of factors before they decide to leave. Some of these factors include the presence of children, societal stigma, economic constraints and emotional bond with the abuser (Barnett, Miller-Perrin & Perrin, 2005). Besides the aforementioned considerations, Christian women give critical consideration to religious doctrines and beliefs system which to a large extent is a major determinant whether or not and how they (abused women) move out of abusive relationship and also whether they receive significant encouragement/support to make their decision (Wang, *et. al*, 2009). In a situation the victim decides to seek for divorce, it may result in her been excommunicated, physically, emotionally and possibly spiritual (McAllister & Roberts-Lewis, 2010).

Beaman-Hall & Nason-Clark (1997) asserted that a large population of Christian women resort to seeking stakeholder within the church communities and religious leaders counsel in the process of moving out of abusive relationship. The study conducted by Ake & Horne (2003) shows that Christian women with strong religious beliefs reported that the doctrine, perceive attitudes from their church communities and their status in ministry have been part of their consideration in the process of moving out of abusive relationship. Also, in a study conducted by Giesbrecht & Sevic (2000) reported that in churches whereby their doctrine give so much emphases to wives loving and obedient submission to their husbands serve as a major constraint for abused women to leave abusive relationship.

Wang, *et al.* (2009) and Nason-Clark (2004) asserted that Christian women who remain in abusive relationship based on their religious beliefs that a godly Christian woman should learn to sacrifice and forgive and also offer prayers to God for change of behaviour for their husbands. Levitt and Ware (2006) in a qualitative study report that religious leaders do not consider violence against women in marriage as a sufficient reason for divorce. Hence, divorce or separation should be consider as a last resort on the ground that counseling or religious interventions had been tried and failed. This sometimes serves as a delay measure to further make the abused women to remain in abusive relationship. More so, 15 percent of the Christian leaders in the study reported that it will be against their religious beliefs to approve of divorce after due counseling and admonition fails to end the abuse as the Bible cites only on ground of infidelity and desertion as approve grounds for divorce.

Wang, *et al*.(2009) asserted that Christian women who belong to the conservative Christian denominations are highly affected by religious beliefs than women who belong to the liberal denominations in the decision making process of whether to remain or move out of abusive relationships. The conservative Christian denomination strongly emphases the traditional beliefs of male domination and superiority over women and perceived the women as the men's property. In addition, the conservative Christian denomination also stresses the importance of marital reunion in the event of dispute. The leadership of conservative Christian denomination who often are male dominated ensures that divorce/separation is inaccessible to abused women based on the sanctity of marriage vows (Levitt & Ware, 2006). Responses

from abused women and religious leaders from conservative denomination reveal that the continuous emphases on the need for women to remain submissive to the authority of their husband as the church to the authority of God. Hence, abused women are manipulated through the misinterpretation of the scripture in the favour of men to endure and pray to God for their abusive partner to change (Wang, *et. al.* 2009; Levitt & Ware, 2006 and Foss & Warnke, 2003). The Christian women from conservative denomination who are bold enough to move out from abusive relationship often suffer from spiritual guilt and dispel. This is because the decision to move out from such abusive relationship is not just an offense against the church's doctrine and counsel about marital sanctity and vows but also an offense to the will of God (Wang, *et al.*, 2009).

Miles (2000) posits that Christian leaders often cripple victims of intimate partner violence capacity to escape an abusive relationship and stifle her healing process with variations of statements such as "Y*ou have to work harder at being a better wife*", "*Submit to your husband. He is the head of you as Christ is the head of the church*", "*Pray that you will be able to endure the pain*", "*God will not give more than you can bear*", "*Divorce is a sin. You must do everything in your power to keep your family together*" and "*The wife does not rule over her own body, but her husband does*".

Discussion

From the analyses so far, it is evident that Christian women use religious counsels to endure intimate partner violence because of the fear of been labeled as a bad influence to the young generation particularly when they (Christian Women Leader) occupying position such gospel minister, group leaders, and pastors. In addition, they do not want to be labeled as hypocrites (do what I say and do not do what I do) as they often time appear to the public that everything is well with their home/marriage as such it becomes difficult for them to walkout of abusive relationship. The custodians of the Christian doctrines are often men who are usually biased. They always downplay what the Bible says in favour of men. The Christian doctrine counselors and teachers use first Timothy 2 verse 12 which states that "*I do not permit a woman to exercise authority over a man; rather, she is to remain quiet*" (1Timothy 2:12) to mute the women in the face of abuse. In any attempt for Christian women to act, react and speak out in order to liberate themselves from violence ridden marital relationship, the Bible is misinterpreted again to remind her to be submissive to her husband in *"everything"* and that submission to her husband authority at all times is the virtue of a virtuous woman.

The experiences of Mrs Osinachi as analyse in this paper is in tandem with the finding of Wang, Horne, Levitt and Klesges (2009) that when a Christian woman decide to move out from abuse intimate relationship, her decision and actions is perceive to have violated the will of God. This explains why Mrs Osinachi fails to listen to family members and close associate when violent behaviour towards her persisted. Secondly, the factor that made Mrs Osinachi remain in the abusive relationship support the finding of Nason-Clark (2004) that godly Christian women prefer to pray and trust God to change their abusive husband than to leaving the violent relationship. When family member and her close associate made attempt to intervene, she constantly stopped them from interfering because she believed that God will change her husband and all will be well.

Another reason she decided to remain in the abusive intimate relationship is because of her internalized Christian religious beliefs due to the fact that she did not want to be a bad role model to her followers in the event of being a divorced gospel minister. This support the position of Ake & Horne (2003) that Christian women with strong religious beliefs reported that the doctrine, perceive attitudes from their church communities/general public and their status in ministry have been part of their consideration in the process of moving out of abusive relationship.

Finally, Mrs Osinachi decision to remain in the abusive intimate relationship is in line with the assertion of Wang, *et. al* (2009); Levitt & Ware (2006) and Foss & Warnke (2003) that abused women are manipulated through the misinterpretation of the scriptures in the favour of men to endure abusive intimate partnership. Some of the Christian counsels, teaching and narratives presented to be logical and sensible on the surface but shielded intimate partner violence and the objectification of women as men's property (Akinwotu, 2022). The authorities of the marital counseling committee usually advice thus: "*Wives submit to your husbands as to the Lord.*" "For a husband has authority over his wife just as Christ has authority over the church. The Christian doctrines are male dominated and fail to make men realized that if they truly love and cherish their wives just as the Bible commanded them in (Ephesians 5:28-29) they will not subject their wives to any form of physical, sexual, emotional, and verbal violence because of their wives' shortcomings.

Implication for Social Work Intervention

The global identity of social work practice and professional activities reflect social change, empowerment and liberation of people, astute commitments to human rights, social justice and empathic understanding of people-in-situation. As social workers advocate for change and liberate women from intimate partner violence, they must be skillful in addressing various perspective and the various interpretations of scriptures without offending Christian religious leaders (McAllister & Roberts-Lewis, 2010). Social workers play significant roles in the intervention of violence against women. Hence in this context the intervention takes place in varying forms such as direct service provision, policy initiatives, legislative reforms, research and advocacy. These are meant to change oppressive social structures that are needed to maintain and reinforce the beliefs system, cultural heritage, religious doctrines, philosophies and ideologies that perpetuate violence against women. Social work professionals and the service they render are indispensible to the delivery of support and intervention services to women in abusive intimate relationships. The profession is deeply rooted in the belief that all individuals have the right to live free, devoid of fear and violence in their homes and the broader society. Social work professionals operate from structural, feminist, human rights, and social justice perspectives and it develops and plans interventions within a client empowerment framework. The Australian Association of Social Workers (2019) espoused various levels of intervention strategies through which social workers provide interventions for women in abusive intimate relationship. These are person-to-person intervention which provides psychosocial needs to the person-in-situation; group intervention which advocates for change in their group beliefs, philosophies and ideologies; community/societal intervention advocates for policy change at the entire community level in relation to attitudinal change. Personal intervention ensures that their practice is ethical by giving attention to factors of violence and not reproducing inequitable gender norms, safety planning, risk management, and advocacy. It also provides interventions in collaborating with policy implementation, child protection and other relevant authorities in counseling. They also targets therapeutic interventions aimed at safety, empowerment and recovery trauma which focuses on

cognitive behavioural therapy, mental health support and interventions. Social workers with perpetrators of gender-based violence (including individual and group behaviour change work), develop culturally and faith-based appropriate therapeutic interventions and support victims to be self-advocates.

Conclusion

Intimate partner Violence has both prevalent and preventable characteristics. Violence against women has enduring negative effects on individuals, children, communities and the society. The enduring negative effects are accompanied by the consequences of impeding the wellbeing of people, family, community and the society. The social work professionals are important in providing solution-centered intervention to victims and survivors of violence against women, in line with their deep commitment to the belief that every woman has a right to live free without fear and violence in her home. In Nigeria, there is no better time other than now for social work intervention and emergency response to be the first point of call in the event of domestic violence.

Recommendations

After careful examination of Osinachi case and review of existing literature, the following recommendations are advanced for the remediation of the anomalies of intimate partner violence in Nigeria.
- Social workers should as a matter of urgency advocate for premarital counseling and intimate partner conflict counseling should be remove from the hands of bias and myopic church committee to be conducted by professional social workers for effective empowerment and liberation of Christian women.
- Social Workers should begin to offer direct services to women in churches and market places through workshop, seminar, symposium and person to person approach in order to liberate them from any oppression and manipulation facilitated by religious counsel and teaching.
- Social workers should take the responsibilities to implement to the later policy and guidelines that has been enacted to address cases of women in intimate partner violent relationship.
- Social workers must make conscious effort to empower and liberate Christian women from their silent position to be bold to report cases of intimate partner violence.
- Women need to be bold enough to come out of abusive relationship without considering "what people will say".

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Social administration and societal transformation in Uganda today

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ABSTRACT

Any attempt to divorce Social Administrators from mainstream societal arrangements aimed at causing societal transformation and development is a futile one. This is due to the fact that social administrators have historically been instrumental in working with governments around the world to ensure that societal needs at different levels are addressed to propel development. Societal transformation requires concerted efforts and this is exactly why governments have to embrace the role played Social Administrators in societal development. The researcher employed a purely critical qualitative approach in which desk research methodology was relied upon. As such secondary data was used and this data was obtained mainly from scholarly and published research articles surrounding Social administration, Social welfare, and other crucial published reports, with matters of the role of social administrators in societal transformation in Uganda today under scrutiny in which even the challenges incapacitating the social administrators from playing their roles well were also analyzed. Critical content analysis was employed in examining the roles of social administrators in Uganda and also the challenges that they face. Validity and reliability were guaranteed by paying much attention to critical conceptual clarity and interpretative rigor. In this paper I reviewed the genesis, the roles of Social Administrators, the challenges that hamper the activities the discipline of Social Administration drawing substantiations from the Ugandan experience. Connectedly, based on literature review, I further concluded that transforming the society is a holistic process which should be done involving all the relevant stakeholders at different levels especially in the community as this would be in position cause for ownership of all projects that could be set up to help the people improve their conditions of living. I also came up with some recommendations which included; the central government should strengthen the monitoring and evaluation department, integrating technology into mainstream societal development projects, continuously empowering local people and embracing the sustainable development strategies.

Keywords: Social Administration, Societal Transformation, Social Administrators, Uganda

Introduction

Governments in the developing world have been puzzled by issues of individual, and community transformation especially on the African continent, a continent which has suffered quite a number of challenges for instance poverty, Ignorance, diseases, uncalled for civil wars all of which have served to undermine the matters of development from the grass root to the National levels (Moscona, 2019,

pp.5-11). Social administrators are a critical group of people who have for long been instrumental in helping governments around the world to effect community transformational programmes as the case was with Britain after the Second World War (Offer, 2006, p.8).

The genesis of the pivotal role of social administrators in community development and transformation can be traced from the Titmuss tradition which called for individual and community welfare together with emphasizing the need for a welfare state. The Titmus tradition meant that governments had to work with a group of people called social administrators who would be immersed in communities, interact with all individuals to ensure that, the set government programmes and projects benefited them (Vizard, 2006, pp. 4-5).

In Uganda, the advent of social administrators and their pivotal role in community development can traced from coming of colonialists who shaped the whole concept of modern day social administration (Mulumba et al., 2021, Pg.1). These through their initiatives established schools which were meant to train the social administrators and also equip them with the relevant skills which would enable them to work together with the community people and later be in position to report to the colonial government in line with whether the people were resistant or collaborative in that domain (Mugumbate & Bohwasi, 2021, pp. 1-3). This trend was considered crucial to the extent that even after independence, the next governments continued to embrace the roles of social administrators which makes them very crucial today.

This paper discusses the role of social administrators in Uganda today, the challenges that are hampering individual and community progress even when the central and local governments have taken it upon themselves to continuously employee these social administrators to help them in monitoring, implementation and evaluation of development projects. The paper ends with making serious recommendations to all the relevant stake holders concerning what needs to be given more attention if set goals in tandem with individual and community developments are to be achieved. The conclusion is lastly therein availed.

Methodology

The researcher employed a purely critical qualitative approach in which desk research methodology was relied upon. As such secondary data was used and this data was obtained mainly from scholarly and published research articles surrounding Social administration, Social welfare, and other crucial published reports, with matters of the role of social administrators in societal transformation in Uganda today under scrutiny in which even the challenges incapacitating the social administrators from playing their roles well were also analyzed. Critical content analysis was employed in examining the roles of social administrators in Uganda and also the challenges that they face. Validity and reliability were guaranteed by paying much attention to critical conceptual clarity and interpretative rigor.

Conceptualization of the Discipline of Social Administration

Social administration, as a field, has been defined by several scholars over the years. One notable definition comes from Martin, who defined social administration as the management of resources to achieve social goals (Martin, 1979, pp. 1-2).

Similarly, Richard Titmuss, a prominent figure in the field, defined social administration as the operation of agencies charged with planning, managing, and delivering social services (Titmuss, 1974, p. 2).

Another significant perspective comes from Dews, who described social administration as the analysis and evaluation of the organization, policies, and practices of agencies involved in social welfare (Dews, 1970).

Donnison (1961, p. 3) defines social administration "*as the study of development, structure and practice of social service*s."

Forder (1974, p.3) defines "*Social administration is concerned with the study of the welfare system, and particularly the government sponsored social services*."

The role of Social Administrators in societal transformation in Uganda today

Social administrators play a crucial role in societal transformation by overseeing the planning, organization, and delivery of social services aimed at addressing the diverse needs of individuals and communities. In Uganda, where various social, economic, and political challenges persist, the role of social administrators becomes paramount in driving positive change and promoting social development. This section explores the significant contributions of social administrators to societal transformation in Uganda today, drawing on scholarly literature and empirical evidence.

Addressing Social Inequalities and Poverty

Social administrators in Uganda are tasked with developing and implementing policies and programs aimed at reducing social inequalities and alleviating poverty. According to Muhumuza (2019), Uganda faces significant socio-economic disparities, with a large portion of the population living below the poverty line. Social administrators play a vital role in designing targeted interventions, such as social protection programs, livelihood support initiatives, and community development projects, to uplift marginalized populations and improve their quality of life.

Promoting Access to Education and Healthcare

Education and healthcare are fundamental pillars of societal development. Social administrators work to ensure equitable access to quality education and healthcare services for all Ugandans, irrespective of their socio-economic status or geographical location. Through the implementation of educational and healthcare policies, as well as the establishment of schools, hospitals, and health centers, social administrators contribute to improving literacy rates, promoting health outcomes, and enhancing human capital development (Okello, 2017).

Strengthening Social Cohesion and Community Development

Social administrators play a critical role in fostering social cohesion and community development by promoting participatory approaches to development and facilitating community engagement and empowerment. By working closely with local communities, civil society organizations, and other stakeholders, social administrators facilitate the identification of community needs, mobilize resources, and support the implementation of community-driven development initiatives aimed at enhancing social capital and fostering sustainable development (Kanyinga *et al.*, 2016, p.14).

Enhancing Governance and Accountability

Effective governance and accountability are essential for achieving sustainable development outcomes. Social administrators play a key role in promoting good governance practices, transparency, and accountability in the management of public resources and service delivery. Through the enforcement of laws and regulations, the establishment of monitoring and evaluation mechanisms, and the promotion of citizen participation and oversight, social administrators contribute to enhancing the efficiency, effectiveness, and integrity of public administration systems in Uganda (Tumushabe & Ruhindi, 2020, pp.253-269).

Advocating for Social Justice and Human Rights

Social administrators serve as advocates for social justice, human rights, and inclusive development. They work to address systemic inequalities, discrimination, and injustices that hinder progress and perpetuate social exclusion. By promoting policies and programs that uphold the rights and dignity of all individuals, including women, children, persons with disabilities, and marginalized groups, social administrators contribute to building a more just, inclusive, and equitable society in Uganda (Bakunda & Naluwairo, 2018).

Reporting

Social administrators like the community development officers, principal community development officers, parish chiefs among others are supposed to report to the central government detailedly about how the planned and ongoing government projects meant to develop and transform individuals and communities with in their areas of jurisdiction are moving (Skidmore,1983). This helps the central government devise mechanisms of ensuring improvement and providing solutions where notable challenges have been detected.

Community sensitization and mobilization

Individuals and communities are supposed to be made aware about what could be transpiring in terms of the government projects and programmes that meant to help in improving their social welfare. Social administrators are meant to be at the centre of this game by mobilizing people and educating them about what the central and local governments have planned or are planning for them and how best they can be part of the government arrangements (Slavin,1978, p.22).

Community empowerment

Social administrators are supposed to help in empowering the community people. This empowerment can mainly be twofold that is to say, making people aware of their human rights and informing them about the relevant stakeholders that can further help them in ensuring that their human rights are respected and projected and that even the marginalized groups have to be taken care of (Williams,2016, pp.15-17). Secondly, social administrators are supposed to help in training the local people to equip them with the relevant skills that can make them fit to be part of government plans and programmes that are mean to strategically position Uganda for instance, the community development officers were charged with training the youths about what the youth livelihood programme was, what they had to do to join and make other related aspects in that direction (Forder,1966, p.40).

Mediators of individual, intra-community and inter-community conflicts

Conflicts stifle development at individual, community, National and international levels. Since development requires concerted efforts, social administrators are meant to help mediate some conflicts with in their areas of jurisdiction in order to ensure unity of purpose which levels background for working together that eventually propels development (Forder,1966, p.35).

Challenges facing the efficacy of Social Administrators in Uganda

Political Interference and Instability

There has been continuous confusion and mixing up of politics with administration both at the National and local government administrative levels in Uganda (Kakumba, 2008, Pg.2-4). This mix up has seen quite a lot of unnecessary fights and delays in the implementation of government projects by social administrators and to make matters worse, in some cases money in some local government has been taken back to the consolidated fund due to failure of the political and technical wings to agree on what needs to be done in order to address the challenges people are facing in the communities. Political interference and instability also pose significant challenges to social administrators in Uganda. Political patronage and partisan interests often influence decision-making processes and resource allocations, leading to inefficiencies and inequalities in the distribution of social services. Moreover, frequent changes in government policies and leadership can disrupt continuity and coherence in social welfare programs. A case in point is the impact of political unrest on social service delivery during periods of political transition, as observed by (Kagumire,2016).

Corruption, bribery and embezzlement and misuse of public funds

Most projects that are mean to help in community transformation have been frustrated by excessive corruption and embezzlement of public funds (Kakumba, 2008, pp.2-4). To make matters worse, even the projects where the local community people are supposed to benefit freely, instances of social administrators requiring bribes from the local people have been part of the norm as the case was with the National Agricultural Advisory services (NAADS). This has been instrumental in worsening the poverty situation especially in rural communities in Uganda for decades (Inspectorate of Government, 2023, pp.1-4).

Inadequate monitoring and evaluation

Social administrators are supposed to be at the helm of monitoring and evaluating government projects from initial to the final stages and be in position to report to government about the progress of these projects, the challenges that they are facing among other crucial aspects. However, these individuals are rarely in communities where they are employed to work and the situation is made worse by the fact that the central government does not take the overall supervision of the individuals especially in local governments seriously. This has challenged the government plan to transform rural communities by ensuring the involvement of all the relevant stakeholders (Inspectorate of Government, 2023, pp.1-4).

Limited budgets for implementation of activities, tasks and projects run by social administrators

Navigating through the troubles that the world economies faced due to global pandemic which was dubbed Covid-19 was not an easy process. Economies had to be shut in order to reduce the spread of the virus. Infact most developing economies Uganda inclusive are still grappling with the challenges left by pandemic in form of paying loans that they took from the World Bank and the international monetary fund which loans were given with some interest that governments were supposed to pay (Dean, 2009). The process of debt servicing has left governments in the developing world with limited budget to implement more projects that are supposed to contribute to community transformation and development (Wagana, 2016a). This has left social administrators with not much to do for the people they were employed to serve.

Climate change and its other negative effects

Strengthening communities to ensure resilience has become a matter of concern. As the population grows in Uganda, a lot of pressure has been pushed on to the environment reflected in unauthorized settlement in gazzetted forest, swamp reclamation and many other related activities (World Metrological Organization, 2023). These have been at the helm of worsening the climate change situation which has been reflected in increased heat, drought conditions. These drought conditions have further worsened the issue of food security which has frustrated the activities of the social administrators. A close evaluation of NAADS activities portrayed that some of the improved crop varieties which the government was giving the local through the NAADS coordinators with hope that these would be planted and they would improve food security were being eaten by the beneficiaries before planting attributing it to famine cause by climate instability in Uganda (Africa Growth Initiative, 2013).

Weak Institutional Capacity and Human Resource Constraints

Another significant challenge is the weak institutional capacity and human resource constraints within social service agencies in Uganda. Many social administrators lack the necessary training, skills, and expertise to effectively manage and deliver social services. Additionally, high staff turnover rates and understaffing further exacerbate the problem. A case study by Namuyingo et al., (2019, p.5) highlighted the difficulties faced by social workers in Uganda due to limited training opportunities and insufficient staffing levels.

Inadequate Infrastructure and Service Delivery Mechanisms

Infrastructure deficiencies and inadequate service delivery mechanisms pose significant challenges to social administrators in Uganda. Limited access to basic amenities, such as clean water, sanitation facilities, and healthcare services, hinders the delivery of social services to remote and underserved communities. For instance, a study by Atuhaire et al., (2020) identified infrastructure deficits as a major barrier to the effective delivery of education and healthcare services in rural areas of Uganda.

Conclusions

Transforming the society is a holistic process which should be done involving all the relevant stakeholders in the community as this would be in position to cause for ownership of all projects that could be set up to help the people to improve their conditions of living. However, transformation should be a

product of the participatory approach which would imply that all the groups of the local people that is to say the women, the youths, people with disabilities (PWDs) are given the opportunity to be part of societal establishments that are aimed at propelling community led development. This would ensure ownership of the established projects which would further serve as a basis for ensuring sustainability of the established community projects.

Recommendations

The central government should strengthen the monitoring and evaluation department as this would compel local governments to implement community projects for example under the parish development model while following the National development plan and other relevant documents. This would be instrumental in propelling accountability for the financial resources that the central government has always channeled to the local governments to effect programmes and projects that are meant to transform communities.

There is need to continuously empower the local people to enable them to gain the confidence to demand for the required accountability from the social administrators that are employed by the central government of Uganda at various levels to help it implement its programmes and projects especially at the grass root as this would help to reduce the too much corruption and uncalled for embezzlement of funds that are meant to contribute to societal transformation.

Social Administrators should be in position to embrace sustainable development strategies in all their engagements with community people as this would help to reduce the effects of climate change through ensuring resilient communities.

There is need for social administrators to tap on the opportunities that technology advancement has been in position to come with and be in position to painstakingly integrate technology where necessary to ensure efficiency, effectiveness, transparency, and accountability in all societal establishments.

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