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Journal

EDITORIAL

THE MULTI-DISCIPLINARY APPROACH TO A RESEARCH JOURNAL

The Nkumba International Research Journal, published by Nkumba University, is an online, open access, fully referred, peer-reviewed academic journal that provides a platform for presenting, discussing, and documenting research findings and other important academic concerns in a multi-disciplinary approach. It is a forum for authors in all disciplines to disseminate research findings, latest discoveries and developments, and future research prospects to the public in a manner easily understood. Since its inception, the Journal has been accepting original and the best-quality research articles for publication. The articles include formal research reports, re-analyses of others' research, reviews of the literature in a specific area, proposals of new but untested theories, and opinion pieces.

This First Issue of the Second Volume of the Journal is composed of diverse articles ranging from enhancing food security through the role and independence of some government institutions in Uganda to advancing psychometrics in higher educational institutions in Uganda and the reasons for excessive smoking. Otto et al. have provided new insight into the magnitude of food insecurity among vulnerable households and the role of microcredit in improving their livelihoods. Nsereko et al. have advised researchers on the advantage of using the already developed and validated survey instruments in existence to obtain reliable and valid data over the rigorous process of undertaking the development of another instrument. Rusoke illustrated the dependence of heavy smoking on the level of tobacco promotion, limited education, and availability of money. Barasa reviewed the operational status of the Director of Public Prosecution in Uganda and found out that the incumbent constitution has limited independence because of flaws in the method of his/her appointment and tenure of service. Tumukwasibwe observed the limited oversight role of the Ugandan Parliament on the security sector institutions regarding service delivery, privatization of services, and entrenched loyalty to the Commander-in-Chief despite the enabling provisions in the National Constitution.

The Journal will continue to publish submitted manuscripts after rigorous peer review which will be free of charge to the authors and with open access to the readers while facilitating widespread dissemination of the articles and creating valuable impacts in the respective disciplines. Special Issues will be devoted to papers presented at thematic conferences at Nkumba University.

Finally, I would like to take this opportunity to thankfully appreciate and extend my gratitude to the editorial board members, my co-editors, reviewers, and publishers, as well as the contributing authors for ensuring the publication of this issue.

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Advancing Psychometrics in Uganda's Institutions of Higher Learning with Emphasis on Structural Equation Modeling (SEM)

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Abstract

In Uganda and other countries, many academic research projects are carried out in various disciplines e.g., health, social, behavioral sciences, etc., especially for an academic award. Data gathering to measure the attributes of the study is sometimes carried out by applying instruments with incomplete scale development although a large amount of technical literature on scale theory and development exists.

Experts in psychometrics advise researchers to use existing and validated instruments suited for an attribute or construct for measurement in one's research project to obtain reliable and valid data or undertake the comprehensive and scientifically rigorous process of developing an instrument to use for one's research project. This observational and documentary study has addressed the knowledge and practical gaps in scale development while carrying out scientific inquiry informed by the fundamental concepts in psychometrics theory which is often not a part of graduate training in Uganda's institutions of higher learning.

Keywords: *Psychometrics, Scale development, and evaluation, Item Response Theory, Structure Equational Modeling, Model Specification, Model Identification, Model Estimation, Model Testing.*

Introduction

While the primary aim of psychometrics is to develop psychological instruments to improve psychological science based on different theories and approaches, it also encompasses the mathematical, statistical,

and professional methods that address how tests are constructed and used, and indeed, how they are evaluated in different disciplines e.g., health sciences, business administration, social sciences and education (Anunciação, 2018; Buchanan & Finch, 2005).

With the advancements in computer and software technologies, psychometrics has developed new methods of statistical analysis or the refinement of older techniques prompting the growth in the use of statistical and psychometric methods in psychological, social, and educational research (Anunciação, 2018). Free technologies have become available that can assist researchers who lack resources. For example, the GPower software can be used for undertaking different types of power analysis (Faul et al., 2007; 2009).

Many academic research projects are carried out in various disciplines e.g., health, social, behavioral sciences, etc., especially for an academic award. Data gathering to measure the attributes of the study is sometimes carried out by applying instruments with incomplete scale development. Understanding the approaches/paradigms e.g., the Item Response Theory (IRT) used in evaluating the quality of tests under psychometrics will enhance the abilities of researchers to construct psychometrically valid tests in their work.

Psychometrics in the Intervention of Human Needs

Psychometrics has mainly dealt with the understanding of human constructs. These include intelligence, interests, abilities, aptitude, personality, behaviors, and their antecedents/consequences namely; cognitive, sensory, perceptual, or motor functions. Scales are therefore developed to measure the constructs of interest and applied in the day-to-day life experiences. The scales developed are referred to as psychological tests because they are standardized procedures for sampling behavior and describing it using scores or categories. Tests may be predictive of some non-test behavior of interest or they may be norm-referenced, describing behavior in terms of norms (Jones & Thissen, 2007).

Psychometrics covers three broad areas. (1) Psychological scaling: this deals with a set of techniques for the assignment of quantitative values to objects or events using data obtained from human judgment. (2) Factor analysis: this deals with methods and procedures used to explain the observed covariation among a set of variables in relation to the underlying or latent (unobserved) variables. The emergence of factor analysis made other aptitude and personality tests possible. (3) Psychological measurement: this combines with psychological scaling and factor analysis to produce a new test theory characterized by item response theory (Jones & Thissen, 2007).

Although psychometrics has generally been viewed as a value-free discipline, it is value-laden due to the four values, namely: that individual differences are quantitative and not qualitative, that measurement is objective in a specific sense, that test items are fair, and that a model's usefulness is more important than its truth (Wijisen, Borsboom, & Alexandrova, 2021).

Techniques required for scale development and evaluation

Thompson, Loesch, and Seraphine (2003) observed that for an assessment instrument to be both credible and usable, it must be grounded in a framework that enjoys widespread and substantive endorsement. Instrument development is based on different theories and approaches. The primary measurement theories in psychometrics used by researchers to construct psychological assessment instruments are Item Response Theory (IRT) and Classical Test Theory (CTT) (Anunciação, 2018).

These two distinct models/approaches are used in evaluating the quality of tests. Both IRT and CTT deal with broad concepts, including reliability and validity.

The Classical Test Theory is used mostly to evaluate structural validity whereas the Generalizability Theory is more concerned with how instruments are applied to measurement activities when applied with a two-step sampling procedure (Jones & Thissen, 2007; Bjorner et al., 2005; Fischer & Molenaar, 1995). Currently, IRT and CTT methods are seen as complementary and are frequently used to assess

the test validity and respond to other research questions (Anunciação, 2018). Our broad interest and emphasis will look at IRT.

Item Response Theory

Item Response Theory represents a collection of statistical models and methods used in psychological measurements (test theory) mainly for two broad purposes in the measure of health outcomes: item analysis and scale scoring. Basically, IRT addresses the evaluation and improvement of the basic psychometric properties of items and tests (Furr & Bacharach, 2008). IRT models handle unidimensional data as well as multidimensional data, binary and polytomous response data, and ordered as well as unordered response data (Jones & Thissen, 2007; Van der Linden & Hambleton, 1997).

IRT focuses on the statistical analysis of test data on the person's responses to survey items, and his or her standing on the construct being measured by the scale rather than on the total summed test score. It is usually applied when examining very large samples with the goal of generalizing the results to a broad population. It is a much more flexible and informative theory since it provides item statistics that are population-independent, over other theories used in factor analysis i.e., The Classical Test Theory. Specifically, most IRT models and methods predict that one or more unobserved (latent) traits and item parameters underlie the responses to test items whereby the variation among individuals on those latent variables explains the observed covariation among item responses (Jones & Thissen, 2007; Bjorner, Kosinski, & Ware, 2005; Fischer & Molenaar, 1995). An approach to IRT in scales development gives a good psychometric grounding of the scale (Reijneveld et al., 2003).

Instrument development in the Ugandan context

Instrument development to reflect the contextual variables in the Ugandan situation and its application is still at its lowest. There are few instruments reported in Uganda that have been locally developed and validated for clinical or research purposes in mental health. Ovuga (2005) developed the Response Inventory for Stressful Life Events (RISLE) and revised it from 100 items to 36. It measures depression and suicidal ideation/ attempts. The RISLE omitted a confirmatory factor analysis procedure to determine whether the hypothesized factor structure provided a good fit to the data, in other words, whether or not a relationship between the observed variables and their unobserved or underlying latent constructs existed.

A recently locally-developed and validated instrument is code-named the University Students Evaluation of Psychosocial Problems (USEPP). It is a multidimensional, self-administered psychological instrument measuring psychosocial problems among university students. It can detect university students with and those without psychosocial problems and it can predict psychological distress (Nsereko, Musisi, & Holtzman, 2014).

Other Ugandan researchers have attempted adaptation and modification methods of already developed instruments to make them contextually and culturally relevant to Ugandan settings mainly for research purposes (Ovuga et al., 2006; Nakimuli-Mpungu, Musisi, Katabira, Nachega, & Brass, 2011; Nakigudde, Musisi, Ehnvall, Airaksinen, & Agren, 2009; Abbo et al., 2009). However, these will still lack the cultural and contextual specificity for the Ugandan situation.

Academic research projects for an academic award

A research project is an academic imperative for graduation for students at bachelor's, master's, and PhD levels in the Ugandan education system. It is presumed that the student researcher will investigate the variables of study in a systematic manner and analyze the data obtained in an accepted statistical procedure. Students undertake such a project involving gathering empirical data in an effort to build new models and paradigms.

The widest approach used to collect data in survey designs is the use of questionnaires and other quantitative tools when one needs to accurately measure the variables of interest (Stone, 1978). However, where these efforts have been applied to use instruments for assessing clients or for research purposes it has been mainly done by reference to Eurocentric measures that are on the market.

Alternatively, as experience has shown, student researchers attempt to develop an instrument to measure the manifest variable observed in the real world, or something else measured as part of a theory. It is important that measures on these survey instruments adequately represent the constructs under examination (Hinkin, 1998; Barrett, 1972) to come up with a well-constructed, valid and reliable test that has been subjected to a comprehensive and scientifically rigorous process of development that stands the test of time. Schoenfeldt (1984) underscores the importance of sound measurement as follows: “The construction of the measuring devices is perhaps the most important segment of any study. Many well-conceived research studies have never seen the light of day because of flawed measures” (p. 78).

When one takes an interest to read some of the research reports submitted for graduation, one discovers that the instruments that are normally developed by student researchers are not comprehensive. They normally end at the initial stage of item development involving coming up with the initial set of questions for an eventual scale, covering the following: “(1) identification of the domain(s) and item generation, and (2) consideration of content validity and the calculation of Internal consistency reliability” (Boateng, et al., 2018, p2).

This incomplete scale development process is quite a commonplace occurrence as there are several incomplete scales used to measure mental, physical, and behavioral attributes (Bai, Peng & Fly, 2008; Hirani, Karmaliani, Christie, & Rafique, 2013), although a large amount of technical literature on scale theory and development exists (DeVellis, 2012; Ajzen, 1985). Experts in psychometrics advise researchers in this field to use existing and validated instruments suited for an attribute or construct for measurement in one’s research project to obtain reliable and valid data or undertake the comprehensive and scientifically rigorous process of developing an instrument to use for one’s research project. Anything less could undermine the credibility of the research findings (Worthington & Whittaker, 2006; Hooper et al., 2012).

Several factors have been forwarded as to why the advice of the test developer experts is not adhered to especially among researchers in our local universities. Among these include: Existing and developed instruments that would address the researchers’ constructs, attributes for the study are too expensive to purchase and they may not be multiculturally appropriate to address local issues of interest. And the most compelling reason rests with the non-existence of training programs that address instrument development in our universities that cover a comprehensive and scientifically rigorous process of developing an instrument for research purposes. Other researchers point to the copyright imperative that discourages those who might be in possession of validated instruments. Still, others point out that some manuals accompanying the instruments of interest are rather hard to understand. Moreover, others argue that developing an instrument is very rigorous and expensive, time-consuming given the time allotted to complete the research project.

These anecdotal observations do rhyme with researched data. For instance, Boateng et al., (2018) noted that although using an existing questionnaire will optimize time and resources, a questionnaire that measures the construct of interest may not be readily available, or the published questionnaire is not available in the language required for the targeted respondents. Many universities do not include training on scale development. Others do not have a well-established framework to guide researchers through the various stages of scale development (Price & Mueller, 1986). There is poor reporting of newly developed measures that are used for research that threaten the reliability of data (Hinkin, 1995).

Senyonyi et al., (2012) observed that the scales that are already developed specifically for assessing student needs are, in most cases, outdated, expensive, or inaccessible, and are often not contextualized or validated in Ugandan settings. They are inadequate to capture the specific contextual variables of the area of study (Ahia & Bradley, 1984). Sometimes, when no effort is taken to validate them, it complicates issues of reliability and validity.

The common practice in instrument development

In Uganda, many researchers quite often attempt to develop their own instruments. They do so because of a failure to establish an appropriately developed and validated instrument for their studies due to several reasons as cited above. A number of completed undergraduate, master’s and even PhD studies fall under such categories (personal observation of some studies which have already gained credit). The

common characteristic of these instruments is that the instrument developers usually accomplish the first step of the model specification where a pool of items is generated to tap the construct to arrive at a set of items that should represent the construct of interest. They miss out on important imperatives of psychometric principles on instrument development like applying theories underpinning the process and other phases to creating a comprehensive process of developing an instrument for their research project. This creates a big hurdle in designing a questionnaire that is psychometrically sound and is efficient and effective for use in research and clinical settings.

Based on the IRT frameworks, we continue to observe that they fail to accomplish factor-analytic, data-reduction techniques, and scale evaluation techniques that would yield a stable set of underlying factors that accurately reflect the construct (Boateng, Neilands, Frongillo, Melgar-Quinonez, & Young, 2018).

These instruments also do not report construct and predictive validity. The reliability measures are arbitrarily derived by reference to test and retest methods which cannot be sustained because the items of the scales and the latent variables were not psychometrically derived in the first place. Even if at this stage many tests indicate internal consistency reliability, it is not a sufficient condition for construct validity (APA, 1995).

If the right psychometric properties of the instrument are not established first, that creates methodological issues in research studies (Worthington & Whittaker, 2006). It also falls short of the norm and central objective of psychometrics which aims at ensuring that psychometric qualities remain up to date (Osborne, 2010).

Consequently, such a scenario throws the quality these research projects and findings in Uganda in doubt as well as the decisions and awards that may be based on such efforts, including academic credentials and policy decisions.

A serious drawback in promoting sound instrument development practices in the Ugandan research sector is that universities do not include research courses on psychometrics, factor analysis (exploratory, confirmatory), and Structural Equation Modeling (SEM) analysis techniques, at both the master's and doctoral degree levels

Scale development informed by Structural Equation Modeling (SEM)

This section intends to demonstrate how a researcher intending to develop an instrument for research or clinical purposes applies an advanced statistical multivariate analysis technique referred to as Structural Equation Modeling (SEM), a derivative of Item Response Theory (IRT). SEM is more of a confirmatory technique, but it can also be used for exploratory purposes (Schreiber, et al., 2006)

SEM models combine the path and factor analytic models to explain relations among a large set of observed variables using a small number of latent/unobserved variables, allowing a researcher to confirm the factor structure of a newly developed instrument (Crockett, 2012; Anunciação, 2018)—more specifically, “SEM tests models that specify how groups of variables define a construct, as well as the relationships among constructs” (Crockett, 2012, P.2).

When performing SEM, large samples are essential (asymptotic) to provide stable parameter estimates (Bentler, 1990; Savalei & Rhemtulla, 2017). There are different opinions on the exact sample size. Worthington and Whittaker (2006) recommend the Bentler and Chou's (1987) guideline of at least the 5:1 ratio of participants to a number of parameters, with the ratio of 10:1 being optimal. Other scale developers recommend a sample size of 150 respondents in exploratory factor analysis and a minimum sample size of 200 for confirmatory factor analysis (Hinkin, 1998).

Steps in Performing SEM Analysis

There are five applied steps for conducting SEM analysis: Model Specification, Model Identification, Model Estimation, Model Testing, Model Modification.

1. Model Specification

The first step of SEM analysis is model specification. Model specification occurs prior to data collection and analysis. It is aimed at defining the phenomena of interest e.g., cognitive, behavioral, and psychosocial problems, etc., clearly and concretely, using both existing theory and research to provide a sound conceptual foundation (Worthington & Whittaker, 2006, p. 813).

The phenomena of interest or the construct help to guide item generation so that factor-analytic, data-reduction techniques yield a stable set of underlying factors that accurately reflect the construct and the validity of its content (Worthington & Whittaker, 2006).

In scale development literature, model specification is referred to as the logical-content or rational/theoretical approach. The logical approach applies the scale developer's judgments to identify or construct items that represent the characteristic being measured. The logical approach generates items through literature review and assessment of existing scales and indicators of a domain under consideration. The rational/theoretical approach both begins and ends with informed judgments based on theory. It generates scale items from individual interviews, direct observations, and focus groups (Boateng, et al., 2018; Hinkin, 1998).

Once the items for the model have been identified, expert opinion is sought to evaluate the items for analysis of content validity (e.g., the extent to which a set of items reflects the content domain) readability and wording, the adequacy of the items in terms of contextual relevancy of the items, language simplicity, length, format, and inclusiveness. At this stage, experts may offer suggestions e.g., for adding new items or deleting some.

When the model is created, the most likely explanations for relationships included in the model and a rationale for the overall specification of the model should be given (Crockett, 2012). The items developed for the model are typically self-report in nature and tend to utilize Likert-type agreement response scales. These generally have three to seven choices ranging from Strongly Disagree to Strongly Agree.

Although the items constituting a particular assessment can be grouped under an overall construct (e.g., psychosocial problems), it is common for subsets of items to describe specific facets within the larger construct (e.g., emotional problems, traumatic problems, academic problems, antisocial behavior (Holtzman & Vezzu, 2011). Finally, the items are administered to a development sample, after which they are evaluated and the scale length is determined (Worthington & Whittaker, 2006).

However, stopping at the logical, rational/theoretical approach is no longer a popular method in scale development for any kind of purpose (Crockett, 2012; Worthington & Whittaker, 2006; Hooper et al., 2012).

What is widely advanced in instrument development is the empirical procedure that employs factor analysis (exploratory, confirmatory) and Structural Equation Modeling (SEM) analysis techniques (Crockett, 2012, Schreiber, Nora, Stage, Barlow & King, 2006).

2. Model Identification, Model Estimation, Model Testing, Model Modification

Model identification, Model estimation, Model testing, and Model Modification are the second, third, fourth, and fifth steps respectively carried out in SEM analysis. They constitute the empirical approach to scale development. They use factor analysis to identify a set of factors representing underlying latent constructs from a larger number of observed variables of items on a survey. Factor analytic techniques, properly employed, help to determine (a) predictive utility for a criterion group (e.g., psychosocial problems) or (b) homogenous item groupings i.e., whether groupings of the observed variables/items on a survey demonstrate the psychometric properties necessary to assert they reliably and validly measure one or more intended constructs (Worthington & Whittaker, 2006).

Model Identification

Model identification occurs before estimating model parameters (i.e., relationships among variables in the model). It is intended to identify the theorized model by looking at the possible unique solution generated for each parameter in the model and whether it is dependent on the designation of model parameters.

The identified model should have the following characteristics: (a) there are two or more latent variables, each with at least three indicators that load on it, the errors of these indicators are not correlated, and each indicator loads on only one factor, or (b) there are two or more latent variables, but there is a latent variable on which only two indicators load, the errors of the indicators are not correlated, each indicator loads on only one factor, and the variances or covariances between factors is zero (Crockett, 2012; Worthington & Whittaker, 2006). SEM statistical software programs allow a researcher to determine whether the model is identified or not.

Two complementary statistical analyses namely Exploratory Factor Analysis (EFA) for model identification and estimation and Confirmatory Factor Analysis (CFA) for model testing are applied sequentially. EFA explores the factor structure of the responses to some set of survey items, while CFA is used to confirm whether specified groupings of items properly measure the theorized constructs of interest (Crockett, 2012; Worthington & Whittaker, 2006). (These two analysis techniques are elaborated below).

3. Model Estimation

Model estimation follows model identification. It involves estimating the parameters of the theoretical model in such a way that the theoretical parameter values yield a covariance matrix as close as possible to the observed covariance matrix S (i.e., the matrix derived from the sample data) (Crockett, 2012).

4. Model Testing

Model testing involves the analysis of two conceptually distinct models: the measurement model and the structural model. The process determines whether the hypothesized structure provides a good fit to the data, or in other words, whether a relationship between the observed variables and their underlying latent, or unobserved constructs exists (Child, 1990). It also verifies that all items are properly aligned with the correct facets within the general construct being measured. CFA is conducted on the measurement model to effect model testing (Crockett, 2012). Raykov and Marcoulides (2000), Stage et al. (2004) as cited in Crockett (2021) advise that a path diagram or visual representation of the hypothesized relationships among variables are part and parcel of the SEM procedures and must be shown

5. Model Modification

This step may be carried out at the EFA stage when there is a need to trim or add new parameters in an attempt to improve the theoretical model's fit to the data. The process is restricted to the initial data worked on in the EFA (Crockett, 2012).

Exploratory Factor Analysis

Researchers perform EFA followed by CFA when constructing new scales. The survey is first administered to a representative sample and the data are subjected to an EFA, and the factor structure uncovered by the EFA is subjected to a CFA using data collected from a new sample.

The initial step of data analysis involves screening item responses for normality because the extraction methods like Maximum Likelihood Estimation in factor analysis assume normality of the item responses. Skewness and kurtosis for the item responses are evaluated to examine normality (Worthington & Whittaker, 2006).

Sample Size

There are differing opinions in the literature about sample size in the development of an instrument. Some studies have made different suggestions regarding sample sizes for carrying out Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) when developing an instrument. For instance, Hatcher (1994) advocated the minimal sample size to be larger than 100 participants or 5 times the number of variables being analyzed. Reise, Waller, and Comrey (2000); Thompson (2004) considered sample sizes less than 100 or with fewer than 3:1 participant-to-item ratios as generally inadequate.

Worthington and Whittaker (2006) who have spelled out comprehensive guidelines for scale development recommended obtaining a sample of about 300 respondents and more in the initial use of EFA. Following the outcome of the EFA, they also suggested that data collection for use in CFA should at least be 200 respondents.

In general, there is some agreement on large samples in scale development because scale variance attributable to specific participants is likely to be canceled by random effects as sample size increases (Tabachnick & Fidell, 2001). Larger sample sizes are likely to result in more stable correlations among variables and will result in greater replicability of EFA outcomes (Worthington & Whittaker, 2006).

Factorability of the Scale

Following item response screening for normality, data are then verified for factorability (correlation matrix) before factor extraction. Researchers can use Bartlett's (1950) test of sphericity to estimate the probability that correlations in a matrix are 0. The disadvantage of this approach lies in its being highly susceptible to the influence of sample size and likely to be significant for large samples with relatively small correlations (Tabachnick & Fidell, 2001). Or they can use the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy to determine the appropriateness of factor analysis.

KMO indicates the extent to which a correlation matrix actually contains factors or simply chance correlations between a small subset of variables. Values of .60 and higher are mandatory for good factor analysis while values greater than .60 are considered to be adequate and greater than .80 are considered to be high. (Tabachnick & Fidell, 2007).

Extraction Methods

After establishing the factorability of the scale, the latent variable underlying the scale is determined through a variety of types of extraction methods in EFA. These include principal components, image factoring, unweighted least squares, generalized least squares, alfa factoring, principal axis factoring, and maximum likelihood. Before any technique is adopted researchers need to understand the distinct purposes of each technique. For instance, principal-components analysis reduces the number of items while retaining as much of the original item variance as possible. While principal axis factoring and maximum likelihood aim at understanding the latent factors or constructs that account for the shared variance among items. They are more closely aligned with the development of new scales since they assume multivariate normality and lack of skew (Worthington & Whittaker, 2006).

Rotation Methods

Factor extraction is followed by the use of rotation methods. These include Varimax, Direct Oblimin, Quartimax, Equamax, and Promax. Factor extraction aims to understand and interpret the latent factors or constructs that account for the shared variance among the items, and purposes of subsequent use in regression or other CFA prediction techniques. When the factors are expected to be correlated, the Oblique Rotation method e.g. Direct Oblimin is preferred while for uncorrelated factors the orthogonal rotation method e.g. varimax is used (Worthington & Whittaker, 2006).

Determining the Number of Factors to Retain

There are several guidelines followed to determine the number of factors to retain for the scale. The commonly used methods were suggested by Kaiser (1958) and Cattell (1966) based on eigenvalues.

These approaches namely the traditional eigenvalue cut-off of 1 and the scree plot (the relative values of eigenvalues) may help to determine the importance of a factor and indicate the amount of variance in the entire set of items accounted for by a given factor. Eigenvalues that are less than 1.0 reflect potentially unstable factors for retention and they are naturally excluded for further analysis (Worthington & Whittaker, 2006; Tabachnick & Fidell, 2007).

Factors can also be decided based on the criteria for a simple structure. These include factors that have three items and above with conceptual interpretability. The items that have high loadings on each factor which are greater than $\geq .32$ and do not double-load (a.k.a., cross-load) onto any other factors at the $\geq .32$ measure. Researchers with their discretion can retain a factor with only two items if the items are highly correlated (i.e., $r > .70$) and relatively uncorrelated with other variables. But above all a specific factor structure to be retained, must be adequately reproduced during EFA (Worthington & Whittaker, 2006). Items that do not fulfill these criteria are otherwise dropped because they may be considered insufficient indicators of the factors produced in the EFA and the criteria used are reported. However, when multiple iterations of EFAs are run, some dropped items may be reintroduced in the analysis at the researcher's discretion.

Confirmatory Factor Analysis

CFA is a special case of the structural equation model (SEM), also known as the covariance structure (McDonald, 1978) or the linear structural relationship (LISREL) model (Jöreskog & Sörbom, 2006). SEM typically consists of two models: a measurement model linking a set of observed variables to a usually smaller set of latent variables and a structural model linking the latent variables through a series of recursive and non-recursive relationships. The casual relationships are aimed at determining whether the specified model is identified (Schreiber, et al., 2006). An unidentified model is one for which it is impossible to come up with unique parameter estimates. CFA corresponds to the measurement model of SEM and it is estimated using SEM software. The most common SEM software used include Amos, LISREL, and Mplus.

Once a factor solution has been established, it is important to perform confirmatory factor analysis (CFA). The CFA process determines whether the hypothesized structure provides a good fit to the data, or in other words, whether a relationship between the observed variables and their underlying latent, or unobserved, constructs exists (Child, 1990).

It involves the analysis of two conceptually distinct models: the measurement model and the structural model. New data is used from another sample or the data from the same sample can be randomly split for each analysis. This is done to determine whether the proposed measurement model obtained in the initial EFA holds, ensuring that the chosen observed indicators, items, and the latent constructs identified find a good fit for the model. The CFA would also verify that all items were properly aligned with the correct facets within the general construct being measured and thus help support the factor structure reliability and the validity of the scale (Crockett, 2012).

Model Fit Indices

Model fit indices are used while running CFA to indicate how the model that best represents the data reflects the underlying theory. Several goodness-of-fit indicators have been developed and they continue to evolve. When the model-fit indices are suitable, after considering their application to different samples sizes, types of data, and ranges of acceptable scores then the theoretical model is considered to be supported by the sample data. Model-fit indices that fail the various recommendations indicate that the sample data do not support the hypothesized model, requiring the re-specification of the theoretical model (Crockett, 2012; Schreiber, et, al., 2006).

The use of model fit indices applied in CFA and the cutoff values when fitting structural equation models is still a matter of debate (Worthington & Whittaker, 2006). A model fit is by no means agreed upon since statisticians are always seeking and developing new and improved indices that reflect some facet of model fit previously not accounted for (Hooper et al., 2012). Some experts in the field look at fit indices with the like hood of the incorrect rejection of an acceptable model or retaining one which has poorly fitting parts (Marsh et al., 2004).

Others think that overreliance on the model fits may compromise the original, theory-testing purpose of structural equation modeling (Hooper et al., 2012). Others have denounced the use of fit indices altogether (Barrett, 2007). Nevertheless, studies on scale development include fit values in their reports, and editors, reviewers, and consumers look for recommended values when assessing a sound scale which indicate the importance of model fit indices (Schreiber et al., 2006).

Model fit indices are classified under three distinctive types of fitting functions: absolute, incremental, and parsimonious.

Absolute Fit Indices

Absolute fit indices determine how well the structural model reproduces the sample covariance matrix sample and demonstrates which proposed model has the most superior fit. These goodness of fit indices are considered the most fundamental indicators of how well the proposed theory fits the data (Schreiber et al., 2006). Examples include:

1. **Chi-Squared test:** The model chi-square with corresponding degrees of freedom and level of statistical significance. A chi-square value close to zero and a chi-square p-value greater than 0.05 indicate that there is little difference between the expected and observed covariance matrices, which is one indicator of good fit (Hooper et al., 2012). When the chi-square test fails to give a good fit, Wheaton, Muthen, Alwin, & Summers (1977)'s relative/normed chi-square (χ^2/df) which adjusts for sample size can be adopted with recommended quotient values lying from as high as 5.0 (Wheaton et al, 1977) to as low as 2.0 (Tabachnick & Fidell, 2007).
2. **The Root Mean Square-Error of Approximation (RMSEA):** Values at or less than .05 indicate close model fit, which is customarily considered acceptable with corresponding 90% confidence intervals (Worthington & Whittaker, 2006).
3. **Goodness-of-fit statistic (GFI), the adjusted goodness-of-fit statistic (AGFI):** The values for the GFI and AGFI range between 0 and 1, and it is generally accepted that values of 0.90 or greater indicate well-fitting models. These two fit indices are used with other indices to establish model fit. (Hooper et al., 2012).
4. **Root mean square residual (RMR) and Standardized root mean square residual (SRMR):** Values range from zero to 1.0 with well-fitting models obtaining values less than .05 (Byrne, 1998), however values as high as 0.08 are deemed acceptable (Hu & Bentler, 1999).

Incremental Fit Indices

Incremental fit indices measure the improvement in a model's fit to the data by comparing a specific structural equation model to a baseline structural equation model that is said to fit the data poorly. They determine the relative position of model fit on a continuum that ranges from worst fit (i.e., no relationships in the data) to perfect fit. Examples:

Normed-fit index or Tucker–Lewis index (NFI or TLI): Values range between 0 and 1 values $\geq .95$ indicate a good fit (Hu & Bentler, 1999).

Comparative fit index (CFI) a value of CFI ≥ 0.95 is presently recognized as indicative of good fit (Hu & Bentler, 1999).

Parsimony Fit Indices

Parsimonious fit measures determine whether the impact of adding additional parameters on model fit is worth the decrease in degrees of freedom. Examples include:

Parsimony Goodness-of-Fit Index (PGFI) and the Parsimonious Normed Fit Index (PNFI) are commonly used. Both indices range from 0 to 1. While no threshold levels have been recommended for these indices (Crockett, 2012).

Minimum Number of Model Fit to be reported to Support Model Fit

Kline (2005) has suggested a minimum collection of fit indices to report which consist of (a) the chi-

square test statistic with corresponding degrees of freedom and level of significance, (b) the RMSEA with its corresponding 90% confidence interval, (c) the Comparative Fit Index and (d) the SRMR. (Bentler, 1995).

Hu and Bentler (1999) recommended a two-index combination strategy when reporting findings in SEM. (a) NNFI (TLI) and SRMR: NNFI of 0.96 or higher and an SRMR of .09 or lower. (b) RMSEA and SRMR: RMSEA of 0.06 or lower and a SRMR of 0.09 or lower. (c) NNFI (TLI) and SRMR: NNFI of 0.96 or higher and an SRMR of .09 or lower. (d) CFI and SRMR: CFI of .96 or higher and a SRMR of 0.09 or lower.

Detailed Explanation of the Most Commonly Used Model Indices

1. The Chi-Square Test Statistic

The chi-square test indicates the amount of difference between expected and observed covariance matrices. A chi-square value close to zero and a chi-square p-value greater than 0.05 indicate that there is little difference between the expected and observed covariance matrices, which is one indicator of good fit. A non-significant χ^2 value, therefore, indicates that the theoretical model covariance matrix and the sample covariance matrix are similar.

The χ^2 goodness-of-fit test is, however, sensitive to violations of the assumptions of multivariate normality and sample size. In large samples (i.e., over 200), the model chi-square statistic is nearly always statistically significant (Kline, 2005) which may lead to the rejection of a model with a good fit. Using larger sample sizes risks making a Type I error and concluding that a significant difference exists between the theoretical model covariance matrix and the sample covariance matrix, when in fact the two matrices are similar (Kelloway, 1998). While in small samples under 100 a nonsignificant probability level is nearly always indicated which may lead to accepting even a model with a poor fit. A multivariate nonnormality in the data can inflate χ^2 statistics since the test assumes multivariate normality which may result in model rejections even when the model is properly specified (Crockett, 2012).

To address the limitations inherent in a chi-square test, it is often preferred to evaluate model fit based on other fit statistics (Jöreskog & Sörbom, 2006; Kelloway, 1998). Secondary a relative/normed chi-square (χ^2/df) statistic which minimizes the impact of sample size on the Model Chi-Square may offer an acceptable alternative. Thirdly, data should be screened for nonnormality and outliers before analysis.

2. The Root Mean Square-Error of Approximation (RMSEA)

The RMSEA evaluates the extent to which the proposed model deviates from the observed data. It chooses the model with the lesser number of parameters based on the analysis of residuals by using the square root of the mean-squared differences between the elements contained in the theoretical model covariance matrix and the sample covariance matrix (Crockett, 2012).

3. The Comparative Fit Index (CFI)

The Comparative Fit Index assesses the overall improvement of a proposed model over an independence model where the observed variables are uncorrelated (Byrne, 2006). It is least affected by sample size enabling it to perform well even when the sample size is small (Tabachnick & Fidell, 2007).

4. Non-Normed Fit Index (NNFI)/ The Tucker-Lewis Index (TLI)

The NNFI, also known as TLI determines the percentage of improvement in the theoretical model's fit as compared to the baseline model by adjusting for the degrees of freedom in the model. The value of the NNFI can indicate poor fit despite other statistics pointing towards good fit in situations where small samples are used. (Bentler, 1990; Kline, 2005; Tabachnick & Fidell, 2007).

5. Root Mean Square Residual (RMR) and Standardized Root Mean Square Residual (SRMR)

The RMR and the SRMR are the square roots of the difference between the residuals of the sample covariance matrix and the hypothesized covariance model. The range of the RMR is calculated based on the scales of each indicator. The RMR works well with scales that have homogenous levels of items e.g., all items scored on 1-3 without the same scale having other sections to be scored with another level e.g., 1-5. The SRMR would naturally neutralize this problem and is therefore much more meaningful to interpret (Hooper et al., 2012).

Recommendations

University curricular developers should consider integrating more research courses into both master's and doctoral level curricula in which postgraduate students may obtain a general understanding of factor analysis (exploratory, confirmatory) and Structural Equation Modeling (SEM) statistical techniques, as well as learn how to interpret the results of such studies and apply them to practice. We can take a similar approach to the Universities where graduate programs in measurement, statistics, and psychometrics are taught (Anunciação, 2018). As a result, postgraduate students may be more informed consumers of SEM research, could better evaluate the quality of existing research, and develop rigorous research agendas (Crockett, 2012).

Conclusion

Academic research projects are commonly carried out in different disciplines all over the world, including in Uganda. While a lot of literature can be found on scale theory and development, instruments with incomplete scale development are often being used by researchers in data gathering when measuring the attributes of their study, and as such tarnishing the credibility of their research findings. To save the credibility of their research findings literature suggest that researchers either utilize already developed and validated instruments or commit to the scientifically rigorous and comprehensive process of developing an instrument for their research project.

We hope that this article will motivate university curricular developers to address their own knowledge and practical gaps in scale development and evaluation based on the fundamental concepts in psychometric theory, and accept, include, and apply, in graduate training in Uganda's higher education, all the recommendations in this article of observational and documentary study

References

- Abbo, C., Ekblad, S., Waako, P., Okello, E., & Musisi, S. (2009). The prevalence and severity of mental illnesses handled by traditional healers in two districts in Uganda. *African Health Sciences*, Vol. 9, Special Issue 1, S16-S22.
- Ahia, C. E., & Bradley, R. W. (1984). Assessment of secondary school student needs in Kwara State, Nigeria. *International Journal for Advancement of Counseling*, 7, 149-157.
- Ajzen I. (1985) From intentions to actions: a theory of planned behavior. In: Action Control SSSP Springer Series in Social Psychology. Springer. p. 11–39.
- American Psychological Association (APA). (1995). *Standards for educational and psychological testing*. Author.
- Anunciação, L. (2018). An Overview of the History and Methodological Aspects of Psychometrics- History and Methodological aspects of Psychometrics. *Journal for ReAttach Therapy and Developmental Diversities*. Aug 15; 1(1):44-58.

- Bai Y, Peng C-YJ, & Fly, A.D. (2008). Validation of a short questionnaire to assess mothers' perception of workplace breastfeeding support. *J Acad Nutr Diet*, 108:1221–5.
- Hirani, S.A.A, Karmaliani R, Christie T., & Rafique, G. (2013). Perceived Breastfeeding Support Assessment Tool (PBSAT): development and testing of psychometric properties with Pakistani urban working mothers. *Midwifery*, 29:599–607.
- Barrett, G. V. (1972). New research models of the future for industrial and organizational psychology. *Personnel Psychology*, 25, 1-17.
- Barrett, P. (2007), "Structural Equation Modelling: Adjudging Model Fit," *Personality and Individual Differences*, 42 (5), 815-24.
- Bartlett, M. S. (1950). Tests of significance in factor analysis. *British Journal of Psychology*, 3, 77-85.
- Bartlett, J. E., Korttrilik, J. W., & Higgins, C. C. (2001). Organizational research: Determining appropriate sample size in survey research. *Information Technology, Learning, and Performance Journal*, 19(1), 44-50.
- Bentler, P.M., & Chou, C. (1987) Practical Issues in Structural Modeling. *Sociological Methods and Research*, 16, 78- 117.
- Bentler, P. M. (1995). *EQS: Structural equations program manual*. Multivariate Software
- Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, 107, 238-246.
- Bjorner, J. B., Kosinski, M., & Ware, J. E. (2005). Computerized adaptive testing and item banking. In Fayers, P.M., Hays, R.D. (Eds.). *Assessing Quality of Life*. Oxford University Press.
- Boateng, G. O., Neilands, T.B., Frongillo, E. A., Melgar-Quinonez, H.R., & Young, S. L. (2018). Best practices for developing and validating scales for health, social, and behavioral research: a primer. *Front Public Health*, 11(6):149. doi: 10.3389/fpubh.2018.00149
- Boynton P.M., & Greenhalgh, T. (2004). Selecting, designing, and developing your questionnaire. *BMJ*, ;328:13,12–5.
- Brown, R. (2011). *Prejudice: Its social psychology*. John Wiley & Sons.
- Buchanan, R. D., & Finch, S. J. (2005). History of psychometrics. *Encyclopedia of statistics in behavioral science*. John Wiley & Sons, Ltd.
- Byrne, B. M. (1998). *Structural equation modeling with LISREL, PRELIS, and SIMPLIS: Basic concepts, applications, and programming*. Lawrence Erlbaum Associates Publishers.
- Byrne, B. M. (1989). *A primer of LISREL*. Springer-Verlag.
- Byrne, B. M. (2006). *Structural equation modeling with EQS: Basic concepts, applications, and programming* (2nd ed.). Erlbaum.
- Cattell, R. B. (1966). The scree test for the number of factors. *Multivariate Behavioral Research*, 1, 245-276.
- Child, D. (1990). *The essentials of factor analysis* (2nd ed). Cassel Educational Limited.
- Cooley, W. W. (1978). Explanatory Observational Studies. *Educational Researcher*, 7(9), 9-15.
- Crockett, S. A. (2012). A five-step guide to conducting SEM analysis in counseling research. *Counseling Outcome Research and Evaluation*, 3(1), 30-47.
- DeVellis, R.F. (2012). *Scale Development: Theory and Application*. Sage Publications.
- Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39, 175-191.
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power

- 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, 41, 1149-1160.
- Fischer, G. H., & Molenaar, I. W. (1995). *Rasch models: Foundations, recent developments, and applications*. Springer-Verlag.
- Furr, R. M., & Bacharach, V. R. (2008). *Psychometrics: An introduction*. Sage Publications, Inc.
- Hatcher, L. (1994) A Step-by-Step Approach to Using the SAS System for Factor Analysis and Structural Equation Modeling. SAS Institute, Inc.
- Hinkin, T. R. (1995). A review of scale development in the study of behavior in organizations. *Journal of Management*, 21,967-988.
- Hinkin, T. R. (1998). A brief tutorial on the development of measures for use in survey questionnaires. *Organizational Research Methods*, 2(1), 104-121.
- Hirani S. A. A., Karmaliani, R, Christie, T., & Rafique, G. (2013). Perceived Breastfeeding Support Assessment Tool (PBSAT): development and testing of psychometric properties with Pakistani urban working mothers. *Midwifery*, 29:599–607.
- Holtzman, S. & Vezzu, S. (2011). Confirmatory factor analysis and structural equation modeling of noncognitive assessments using PROC CALIS. Northeast SAS Users Group (NESUG), 2011 proceedings, 11-14.
- Hooper, D., Coughlan, J., & Mullen, M. R. (2012). *Structural equation modelling: Guidelines for determining model fit*. Retrieved March 30, 2013, www.ejbrm.com
- Hu, L.T., & Bentler, P. M. (1999). Cutoff criteria for fit indices in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6, 1–55.
- Jones, L. V., & Thissen, D. (2007). A History of Psychometrics. *Handbook of Statistics*, 26, 1-20.
- Joreskog, K. G., & Sorbom, D. A. (2006). LISREL 8.54 and PRELIS 2.54. Scientific Software.
- Jöreskog, K.G., & Sörbom, D. (2004). LISREL 8.7. Scientific Software International, Inc.
- Kaiser, H. F. (1958). The varimax criterion for analytic rotation in factor analysis. *Psychometrika*, 23, 187–200. <https://doi.org/10.1007/BF02289233>
- Kelloway, E. K. (1998). *Using LISREL for structural equation modeling: A researcher's guide*. Sage.
- Kline, R. B. (2005). *Principles and practice of structural equation modeling* (2nd ed.). Guilford Press.
- Marsh, H.W., Hau, K.T., & Wen, Z. (2004), “In Search of Golden Rules: Comment on Hypothesis-Testing Approaches to Setting Cutoff Values for Fit Indexes and Dangers in Overgeneralizing Hu and Bentler’s Findings “. *Structural Equation Modeling*, 11 (3), 320-41.
- McDonald, R.P. (1978), “A simple comprehensive model for the analysis of covariance structures,” *British Journal of Mathematical and Statistical Psychology*, 37, 234-251.
- Nakigudde, J., Musisi, S., Ehnvall, A., Airaksinen, E., & Agren, H. (2009). Adaptation of the multidimensional scale of perceived social support in a Ugandan setting. *African Health Services*, 9, S35-S41.
- Nakimuli-Mpungu, E., Musisi, S., Katabira, E., Nachega, J., & Brass, J. (2011). Prevalence and factors associated with depressive disorders in an HIV+ rural patient population in southern Uganda. *Journal of Affective Disorders*, 135(1) 160-167.
- Nsereko, D. N., Musisi, S., & Holtzman, S. (2014). Evaluation of psychosocial problems among African university students in Uganda: Development and validation of a screening instrument. *Psychology Research*, 2(4), 112-131.
- Osborne, J. W. (2010). Challenges for quantitative psychology and measurement in the 21st century. *Frontiers in Psychology*. <https://doi.org/10.3389/fpsyg.2010.00001>.
- Ovuga, E. (2005). *Depression and suicidal behavior in Uganda: Validating the response inventory for*

- stressful life events (RISLE)*. Unpublished Doctoral thesis, Karolinska Institute, Sweden and Makerere University, Uganda.
- Ovuga, E., Boardman, J., & Wasserman, D. (2006). Undergraduate student mental health at Makerere University, Uganda. *World Psychiatry*, 5(1), 51-52.
- Price, J. L., & Mueller, C. W. (1986). *Handbook of organizational measurement*. Pitman.
- Reijneveld, S. A., Vogels, A. G. C., Brugman, E., Van Ede, J., Verhulst, F. C., & Verloove-Vanhorick, S. P. (2003). Early detection of psychosocial problems in adolescent. How useful is the Dutch short indicative questionnaire (KIVPA)? *European Journal of Public Health*, 13, 152-159.
- Reise, S. P., Waller, N. G., & Comrey, A. L. (2000). Factor analysis and scale revision. *Psychological Assessment*, 12, 287-297.
- Savalei, V., & Rhemtulla, M. (2017). Normal Theory GLS Estimator for Missing Data: An Application to Item-Level Missing Data and a Comparison to Two-Stage ML. *Front. Psychol.* 8:767. doi: 10.3389/fpsyg.2017.00767
- Schoenfeldt, L. F. (1984). Psychometric properties of organizational research instruments. In T. S. Bateman & G. R. Ferris (Eds.), *Method & analysis in organizational research* (pp. 68- 80). Reston.
- Schreiber, J. B., Nora, A., Stage, F. K., Barlow, E. A., & King, J. (2006). Reporting Structural Equation Modeling and Confirmatory Factor Analysis Results: A Review. *The Journal of Educational Research*; 99(6), 323-337.
- Senyonyi, R. M., Ochieng, L. A., & Sells, J. (2012). The development of professional counseling in Uganda: Current status and future trends. *Journal of Counseling & Development*, 90, 500-505.
- Stone, E. (1978). *Research methods in organizational behavior*. Scott, Foresman.
- Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate statistics* (4th ed.). Harper & Row.
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Allyn & Bacon.
- Thompson, B. (2004). *Exploratory and confirmatory factor analysis: Understanding concepts and applications*. American Psychological Association.
- Thompson, D. W., Loesch, L. C., & Seraphine, A. E. (2003). Development of an Instrument to Assess the Counseling Needs of Elementary School Students. *Professional School Counseling*, 7(1), 35-39.
- van der Linden, W. J., & Hambleton, R. K. (1997). (Eds.). *Handbook of modern item response theory*. Springer-Verlag.
- Wheaton, B., Muthen, B., Alwin, D. F., & Summers, G. (1977). Assessing reliability and stability in panel models. *Sociological Methodology*, 8(1), 84-136.
- Wijzen, L. D., Borsboom, D., & Alexandrova, A. (2021). Values in Psychometrics. *Perspectives on Psychological Science*.
<https://doi.org/10.1177/17456916211014183>
- Worthington, R. L., & Whittaker, T. A. (2006). Scale development research: A content analysis and recommendations for best practices. *The Counseling Psychologist*, 34, 806-838.

An inquiry into the independence of the Director of Public Prosecutions in Uganda

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Abstract

This paper inquired into whether or not the incumbent Constitution of Uganda contains sufficient guardrails to stymie infringement upon the independence of the Director of Public Prosecutions (hereinafter "the DPP") in Uganda.

The paper employed a qualitative approach and relied upon the text analysis method of inquiry. It, therefore, reviewed the text of the incumbent Constitution as to the independence of the DPP. It also gleaned the literature regarding a constitutional climate that helps or hurts the independence of public prosecutors, to fortify the findings of the inquiry.

The paper determined that de jure, the Constitution provides for the independence of the DPP, but also ascertained that de facto, the DPP is not independent due to a flawed mechanism of the DPP's appointment, the absence of a life tenure or a single-term tenure for the DPP, and the fact that the DPP can be removed or re-appointed by the unilateral will of the president.

The paper offers proposals for constitutional reform to strengthen the independence of the Office of the DPP in Uganda including that the Parliament of Uganda should amend the Constitution to provide for the appointment of the DPP by a body of prosecutors or lawyers in lieu of politicians. Or the DPP, upon appointment by the President should serve a fixed term that is not renewable. The paper also recommends that the DPP should only take over the prosecution of a criminal case he or she did not institute, with the concurring will and consent of an individual or entity that initiated it, and only so to continue the case to its logical conclusion.

Keywords: DPP Uganda, prosecutorial independence, separation of powers, unitary executive, Uganda constitutional commission, Odoki Commission.

Introduction

The value of public prosecution cannot be overemphasised, not least because public prosecution is an integral part of any country's justice system. In conjunction with the police and judges, prosecutors are vital bastions of the rule of law and justice (Voigt & Wulf, 2019). Prosecutors are situated in the middle of the ecosystem of justice; between detectives of crime (the police) on whom they rely to obtain inculpatory evidence, and the levers of sanction against criminal violations (the judges) who prosecutors feed such evidence to make a judgment to convict or acquit an accused individual. Their position confers on prosecutors the right to choose whether to prosecute a criminal violation or to abstain from doing so, (Luna & Wade, 2012c), depending on whether in their judgment a case merits prosecution or not. Because they render judgement as to which case to prosecute and which one not to, prosecutors have earned the moniker 'judge by another name' (Weigend, 2012).

Owing to the vital function they perform in a criminal justice system, the independence of prosecutors from interference, direction, and control is indispensable; otherwise, they risk getting condemned to being agents

of injustice. Yet, while it is not controversial that much scholarship has been accorded to the police and the judiciary and their relevance to the rule of law, public prosecution has somewhat been a scholarly outlier (Voigt & Wulf, 2019).

In Uganda, the independence of the chief public prosecutor viz. the DPP has not received the scholarly attention it deserves, as a literature survey on the subject returns no result on a systematic study respecting the independence of the DPP in the country.

To reference a sample of studies, Bakibinga offered an analysis of the role of prosecutors in preventing torture and ill-treatment of accused persons and therein discussed the mandate of the Office of the DPP in Uganda (Bakibinga, 2018). However, he fell short of examining the Office's independence, only mentioning *en passant* that the DPP is independent and is not subject to directions or control of any person or authority in the performance of his or her functions.

In another scholarly attempt, Bakibinga examined the constitutional provisions for the independence of the DPP. However, in that effort, he pivoted to the Bahamas and only made passing references to the Ugandan context (Bakibinga, 2018). Bakibinga, therefore, did not examine the independence of the DPP in Uganda thereby leaving a knowledge gap about the subject.

Tumwine also attempted an analysis of the DPP in Uganda. However, he focused his study on the role of the DPP in the administration of criminal justice in Uganda wherein he analysed the specific functions of the DPP to the end of justice, not the independence of the DPP (Tumwine, 2017). Hence, too, Tumwine left a knowledge lacuna.

This paper, therefore, aimed to fill this knowledge gap. The paper focused on examining the guardrails in the current constitutional order and whether they improve or impair the independence of Uganda's DPP. This is because, in the absence of independence and if under the supervision and control of political leaders, the DPP can be suffocated by undue influence to shield the allies and friends of individuals who exercise control and supervision over him or her from criminal prosecution and/or to persecute their foes and opponents (Weigend, 2012), and in effect render justice a pantomime.

Structure of the paper

The paper is organised as follows: It offers a review of the philosophy undergirding criminal justice; a review of the theory underpinning prosecutorial independence; a historical review of the development and need for public prosecutions; and a contextual review of the independence of the DPP in Uganda. It then offers a statement of the problem; describes the methods and materials used, and gives the findings and the attending discussion. Last but not least, it offers recommendations for reform.

Philosophical Review

The fact that public prosecution is sacrosanct in both nexus and praxis is not controversial. Nor does a proposition that public prosecution is foundational for constructing and continuing a just society lack grounding in good reason. Hobbes (1651) and Locke (1689), although each proposed a constitutional vision that was in diametrical opposition to the other's, regarding how a state that's neither anarchistic nor unjust ought to be constituted—nonetheless had a convergence of insight. They concurred that making and sustaining such a state behoves both the erection of a preponderant power, to wit: a government that is capacitated to stymie and even sanction individuals who act injuriously against others.

Experience has lent credence to the veracity of the theory that justice is of unquestionable necessity in a civil state and that there ought to be a superior agency that is empowered to act for the cause of justice on behalf and in lieu of persons who may suffer injury that may be visited upon them by others.

This is a true saying then, that the absence of justice is definitional of chaos, violence, and insecurity, in rampancy the likes of which Hobbes describes in his “state of nature”. For the benefit of the unfamiliar, Hobbes’ state of nature is a government-less and lawless dystopia in which every individual suffers a ruinous constancy of violence waged by all against all and in which all are bereft of the concept of justice.

Hence then, justice is a fundament of civility and is foundational to peace, order, and security. In their theories of a civil and just state, Hobbes and Locke had a *consensus ad idem* having to do with the idea that civil, secure, and tranquil living behoves the existence of a legislator to promulgate laws that regulate the behaviour of persons by way of prohibiting one from injuring or dispossessing another of his property and offering remedies to victims and sanctions against violators.

Moreover, the sages referenced above had a concurrence of thought on the idea that laws were useless if they were not enforceable; therefore, they concurred on the point that there was a need for an authority, to besides legislating, execute the laws, and dispense justice—except that they disagreed on whether the powers to legislate, execute and adjudicate ought to be distributed or united. While Hobbes opined that the powers are indivisible, incommunicable or not shared, and inseparable (Hobbes, 1951, pp.127-28) and that powers that are divided mutually destroy each other (ibid, 225); Locke, in contrast, favoured a division of the powers which he styled legislative, executive, and federative (Fairlie, 1923). Whatever their disagreements on whether the powers are divisible or not, Hobbes and Locke agreed that the existence of the law and its execution and adjudication is the cornerstone of a just society.

Since the rule of law is a reasonable and necessary aspect of the functioning of a state, so too public prosecution if uncorrupted moves forward the rule of law and establishes justice. Public prosecution is one element, that, working in tandem with the courts of law and penitentiary institutions, constitutes the justice system.

However, if care is not taken as to the structural alignment of public prosecution and the executive tributary of government, the purpose of public prosecution, namely to execute both impersonally and impartially a state’s penal law, can be defeated. Such a defeat of the purpose of public prosecution may occur if for instance, a public prosecutor is asked or forced by a president or any such authority as may be the head of the executive branch of government, to persecute his or her opponents. Accordingly, the idea that a department or the office of public prosecutions ought to be independent in its prosecutorial function is widely accepted.

Theoretical review

Public Prosecution only serves its intended end, namely, the service of justice, when and if a public prosecutor makes independent prosecutorial decisions uninfluenced and undirected; and conversely fails in that effort if prosecutorial decisions are directed or influenced. Thus, the theory of prosecutorial independence enjoins that a person or institution empowered and burdened by a constitution to contribute to the creation and maintenance of a just society must be liberated from legislative, judicial, and executive control and direction as regards prosecutorial decision making (Todd, 2020).

However, the theory of prosecutorial independence appears to be at variance with the theory of separation of powers, which places the power to execute all law in the hands of the executive and eviscerates the legislature and judiciary from the same. This is because, under the theory of separation of powers, the prosecution of criminal laws is part of the function of executing laws falling within the orbit of the executive branch of government. Thus, the prosecutorial independence theory presents an intellectual headache to resolve in the light of the theory of separation of powers.

Yet, this is not impossible to disambiguate. The theoretical tension is not actually between the theory of separation of powers and the theory of prosecutorial independence, but between the theory of unitary executive and that of prosecutorial independence. For the theory of separation of powers is a “parent” theory that anchors the theory of prosecutorial independence since there is no prosecution to talk about in the absence of the executive branch of government which is a creature of separation of powers.

It is, therefore, unconscionable to reason that a “parent” theory which is a predicate can be in tension with an offspring theory, as it were, which is a consequent. If there were such tension, it would self-resolve because a consequent owes its existence to a predicate and, therefore, the two can never be in tension in such a relationship.

Instead, the theory of unitary executive is one which truly is in conflict with the prosecutorial independence theory. Both are offspring (so to speak) theories of the theory of separation of powers. According to the unitary executive theory, the separation of the executive branch from the other branches by default also prevents any department that performs the functions of the executive branch from acting independently. All functions and institutions which have the duty of executing the law must be hierarchically ordered in a manner that places them under the care of the head of the executive branch (Calabresi, & Saikrishna, 1994).

The unitary executive theory, in the terms mounted by Calabresi and Prakash, relates to the idea that in a democratic structure of government, in which power is dispersed among three branches of government, it is the executive branch that is solely and exclusively vested with the duty to execute laws and in presidential constitutional systems such as the United States, the executive power is vested in the president who the US Constitution requires to take care that the laws are faithfully executed (Driesen, 2020).

Thus, the fact that, according to Calabresi and Saikrishna (1994), a constitution confers the legislative power on the legislature and vests the judicial power in the judiciary, also bestows the executive power upon the executive branch. Therefore, if executive power is vested in the president by the constitution, then by infection also, the executive branch is constitutionally under presidential control (Strauss, 1984). Public prosecution, according to the unitary executive theory, because it is part of the function of law execution, has to correspondingly be under the control of the president in presidential systems.

However, a president, if he or she were to control and direct public prosecution, would be shoved into a climate in which he or she, whenever it is beneficial to him or her whether personally or politically, is granted undue leave to direct the prosecution of political opponents or personal enemies, and in the same go, to abstain from prosecuting those in his or her favour. This would in effect subvert justice. This is a serious flaw in the theory of unitary executive vis-à-vis justice.

There is, therefore, a unique aura in granting leave to a public prosecutor to possess the discretionary power to choose which cases merit prosecution and which ones do not. The theory of prosecutorial independence is, therefore, valid in such circumstances. That a public prosecutor (although he or she may be under the executive branch) should make independent prosecutorial choices is beneficial for shielding the function of public prosecution from political abuse. Yet, that is an end that is impossible to pursue or achieve if and when politics is given an inch of territory in prosecutorial decision-making.

When such occurs, not only is the function of public prosecution politicised; it also becomes weaponised in that those who wield political power turn the noble function into a tool to use, not against criminals but political opponents—and also use it as an implement to protect the allies of a politician with prosecutorial power or the power to control prosecutorial decision making. For instance, a study by Nasiru affirmed that under the dictatorship of Yahya Jammeh of the Gambia, the Attorney General’s control of the DPP’s prosecutorial functions and the presidential control of both the Attorney General and the DPP through appointment and dismissal inspired rampant prosecution of individuals for political reasons (Nasiru, 2021).

Moreover, the danger with the unitary executive theory does not only consist in the political persecution of opponents but also politically-motivated prosecutorial favouritism whereby a political ally of the prosecutorial decision-makers is likely to be shielded from prosecution; hence jeopardising the rule of law and creating an unjust society.

For instance, in Kenya, before the 2010 constitutional order that took away prosecutorial functions from the Attorney General, who serves at the pleasure of the president, prosecutions were heavily influenced by

politics. Nasiru observes that the arrangement resulted in the protective intervention of the Attorney General in favour of government officials including the vice president and president at the time, who together with others, were implicated in a gold export corruption scandal (Goldenberg scandal) by taking over and discontinuing a corruption case instituted by the Kenya Law Society as a private prosecutor, and later only after external pressure reluctantly and with shenanigan, prosecuted the case resulting in delays and no single conviction.

Thus, the function of public prosecution ought to be independent of executive or other interferences and should be for justice, not politics. The theory of prosecutorial independence, then, is sounder than the theory of unitary executive to the extent that it guarantees public liberty, the rule of law, and justice, than the unitary executive theory.

Historical review

The idea that a State needs a public prosecutor has roots in the English and Welsh legal-judicial traditions of the nineteenth century during which the first office of the DPP was first established in 1879 by the Prosecution of Offences Act (Rozenberg, 1987). Prior, prosecutions for criminal offences were carried out initially by private prosecutors and later when the police system was developed, by the police as well as private lawyers (Kurland & Waters, 1959). However, the reliance on private prosecutors on the one hand and the police on the other was inimical to justice. Whereas private prosecutors could only be afforded by those who had the financial capacity to hire one and could due to avarice easily collude with wealthier defendants; police prosecutors were generally incompetent in matters of prosecution (ibid).

Accordingly, justice was elusive in many cases, leading to a concurrence of thought and will among jurists, lawyers, and lawmakers that there was in England a need for a system of public prosecutions supervised by a man (or woman) of higher intelligence who would ensure that persons employed to prosecute criminals do not exceed their duty (ibid) or fail in it; hence the creation of the Office of the DPP in England in 1879. Nonetheless, the DPP in England did not act independently, until the enactment of the Prosecution of Offences Act of 1908, by which the DPP was severed from the Treasury Solicitor (Nasiru, 2021). Thus, the idea that a State should have a public prosecutor as an independent public office has permeated republics that calibrated their legal-constitutional systems to the English system including Uganda.

Contextual review

The office of the public prosecutor in Uganda has existed for as long as Uganda has been an independent state. It was established by the 1962 constitution as “Director of Public Prosecutions”, and in the verbiage of the constitution, it was a public office whose function was to ensure that violations of the criminal laws of the country were punished.

The DPP had the power, if he considered it necessary, to coin and undertake criminal proceedings against any person and before any court in Uganda but the court-martial; take over and continue any prosecution commenced by another person or authority, and discontinue at any stage any criminal proceedings whether instituted by him or not (Constitution of Uganda, 1962-Art. 82 (2) (a); Art. 82(b); Art. 82 (c)).

The 1962 constitution espoused the theory of prosecutorial independence over the theory of unitary executive. The DPP under the 1962 constitutional architecture was independent, at least normatively. Although he would be appointed by the President on the recommendation of the Prime Minister, the DPP was in the execution of the prosecutorial duties burdened on him by the 1962 constitution, shielded from the direction or control of any other person or authority (Constitution of Uganda, 1962- Art. 82 (6)) including from the appointing authority.

Moreover, although the President appointed the DPP in a bipartite manner with the Prime Minister, neither the president nor the Prime Minister was constitutionally permitted to exercise disciplinary control over the DPP (Constitution of Uganda, 1962- Art. 111 (2) (b)). The DPP was also not removable from office by the President, Prime Minister, or any other authority (Constitution of Uganda, 1962- Art.131 (7) (a)). These constitutional

provisions created multi-layered and multi-dimensional protections of prosecutorial independence for the DPP in the 1962 constitutional architecture.

However, in a clawback, the 1967 constitutional architecture disembowelled the idea of prosecutorial independence when it rendered the office of the public prosecutor subservient to the Attorney General, who was a government minister appointed by the president (Constitution of Uganda, 1967). Unlike the 1962 constitutional architecture, the security of tenure of the public prosecutor was not fortified.

The President was invested both with the power to appoint public officers, remove them without asking leave of any person or authority, and exercise disciplinary control over them (Constitution of Uganda, 1967- Art. 104 (1)). Since the DPP was a public office, the chief public prosecutor was by that fact, also under the direct control of the president. Impliedly, the independence of the public prosecutor under the 1967 constitutional configuration was zero.

The rationale for the demise of independent public prosecution was informed by the political dynamics that led to the abrogation of the 1962 constitution and the promulgation of the 1967 architecture. Under the 1962 constitution, executive power was dispersed to different power centres. Prosecutorial power was vested in the DPP with a brick wall, as it were, of constitutional protections from executive encroachment. The power of the investiture of public officers was shared between the President and the Prime Minister. None could singly appoint a public officer, not least the DPP, and none, acting alone or in concert, wielded the power to remove him.

That architecture offered such a constraint on the executive branch that no president wielding executive power could stomach if he had an opportunity to flip the architecture, and such an opportunity presented itself with the 1966 constitutional crisis that resulted in the abrogation of the Constitution and a power grab by Prime Minister Milton Obote. With the newfound power, whatever Obote wanted, Obote obtained with the subsequent constitutions, viz., the 1966 (interim, so-called) Constitution and its successor, the 1967 (Republican, so-called) constitution. Obote, who became President under those constitutions enjoyed vast and the least checked executive power arguably since the colonial era, including the power to control and direct criminal prosecutions. In the circumstances, prosecutorial power was bound to be abused by the executive: possibly to persecute the president's opponents and enemies and/or to abstain from prosecuting his friends and allies.

In 1988, the National Resistance Council enacted Statute No.5, establishing a Constitutional Commission to commence the process of making a new constitution that would replace the 1967 Constitution (Odoki, 1993). The Report of the Commission reveals the public's concern, then, about the DPP subserving another person or authority as it had been the case in the 1967 constitutional architecture, listing the danger of abuse if he or she were made to bend the knee, as it were, to the superior in matters of prosecutorial decision-making. In lieu, the Report of the Commission revealed that Ugandans proposed that the independence of the DPP should be sacrosanct in the new constitutional architecture (ibid).

In 1995, a new architecture was erected with the promulgation of a new Constitution. The DPP was normatively made independent from the direction and control of anybody or authority in the discharge of his or her constitutional burdens (Constitution of Uganda, 1995). The appointment of Uganda's chief public prosecutor entails a tripartite procedure: by the president upon recommendation by the Public Service Commission and after confirmation by Parliament (Constitution of Uganda, 1995- Art.120 (1)).

Statement of the problem

Whereas the role of public prosecution is very critical in the gatekeeping of the rule of law and justice in the democratic universe in general, and Uganda in particular, and whereas the Constitution of Uganda provides for the independence of the DPP—little research or systematic analysis has focused on the DPP's independence in Uganda.

Accordingly, although the DPP in Uganda is independent *de jure* to the extent that the Constitution provides that the institution shall be independent in the execution of its duties from the direction and control of any person or institution; there, however, have been sobering statements and actions attributed to the president regarding prosecutorial decision making, which careen towards Presidential interference in or control of prosecutorial decision making.

For instance, in March of 2021, the *Nile Post* and the *Observer* carried stories, according to which the President promised to ask the DPP to review the cases of some detained youths and to recommend a soft landing for them (Kazibwe, 2021a).

Another red flag is the report by the *Nile Post* that the DPP in November 2021 dropped criminal charges against the President's private secretary, who had been charged with giving false information to the Electoral Commission in a bid to secure jobs for her three relatives in the Commission—and according to the newspaper, the individual gratefully attributed the DPP's act of dropping the charges against her to the President, (Kazibwe, K., 2021b) which gives a ground to suspect that the DPP in Uganda may have acted on the whims of the President.

Although the DPP can theoretically ignore the presidential requests/orders as regards prosecutorial decision making, it is difficult to see how such requests or orders can be ignored when the president has ultimate executive power and is *ipso facto* empowered to appoint and dismiss any member of the executive branch without asking leave. This appears to be a lacuna that may ensure the President's effective colonisation of the DPP and prosecutorial decision making.

Therefore, this inquiry was incentivised by the need to identify the constitutional lacunae and/or clawbacks that might compromise the DPP's *de facto* independence, and to make suggestions for closing them by legislative action.

Specifically, this paper examined the constitutional provisions for the independence of a public prosecutor under the 1995 Constitution. In that regard, the author inquired into the following questions: What guardrails in the Constitution exist to guarantee the independence of the DPP in Uganda? Are they robust?

Methods and Materials

The paper employed a qualitative approach of inquiry and, therefore, hinged upon the text analysis method. On that footing, the paper reviewed the Constitution of Uganda of 1995 and in particular the provisions that careen towards the independence of the DPP. By the same logic, the constitutional provisions that do not tie in with the independence of the DPP were excluded. Moreover, the literature that was related to conditions that help or hurt the independence of public prosecutors, to triangulate and fortify findings, was used; thus, the literature that did not address itself to the conditions that improve or impair the independence of the DPP was excluded.

Findings and discussion

This paper sought to examine the normative independence of the DPP under the incumbent constitutional configuration including whether there are guardrails against political meddling and how robust they might be and found out the following.

Not under the direction and control of anybody or authority

The paper determined that under the Constitution, the DPP is normatively not under the direction or control of any person or authority, and thus independent to that extent. This is unlike in the antecedent constitutional architecture, to wit the 1967 constitutional architecture under which, as described earlier, the DPP was subservient and under the direction and control of the Attorney General, a minister and member of the cabinet who served at the pleasure of the president.

Implicitly, the DPP under the 1967 architecture was careened towards prosecutorial dependence on the Attorney General and indirectly on the president. Since the incumbent constitutional order extricates the DPP from the Attorney General and any other person or authority in the performance of its prosecutorial decision-making processes; therefore, to that extent, it may be said to be independent. As Aaken, Salzberger, and Voigt also observed, if no external instructions may be given, prosecutors will be called formally independent (Aaken, et al., 2004).

Power to initiate or take over and continue criminal prosecution

The paper also determined that the DPP is empowered to exercise discretion in prosecutorial decision-making, which signifies prosecutorial independence. The DPP is constitutionally empowered to have effective control over criminal investigations. He or she can direct the police to investigate any information of a criminal nature and to report to him or her; (Constitution of Uganda, 1995-Art. 120 (3) (a)) can initiate criminal proceedings against any person or authority in any court with competent jurisdiction other than a court-martial (Constitution of Uganda, 1995- Art. 120 (3) (b)), and can take over and continue any criminal proceedings instituted by any other person or authority (Constitution of Uganda, 1995- Art 120 (3) (c)).

These discretionary powers of the DPP are also fortified by the provision that in the exercise of those discretionary powers, he or she is not to be guided or inspired by political consideration but should only have regard to the public interest, the interest of the administration of justice and the need to prevent abuse of legal process (Constitution of Uganda, 1995-Art. 120 (5)).

The discretionary power of the DPP provided for under the Constitution empowers him or her to obtain the evidence he or she may need, unfettered, and to make an independent judgment call on whether or not to prosecute. Thus, from that, it appears that the Constitution provides for decisional latitude and freedom of action to the DPP.

Power to enter a nolle prosequi

Nolle Prosequi or “unwilling to prosecute” is a written entry made on the court record when a Director of Public Prosecutions undertakes not to continue the action or prosecution (Bakibinga, 2019). The DPP in Uganda can, in addition to coining prosecution *proprio motu* and taking over one not initiated by him or her, discontinue at any stage any criminal case before verdict or judgment, the only limit to that power is that regarding cases he or she did not initiate, the DPP requires the concurring consent of the court having cognisance of the criminal case (Constitution of Uganda, 1995-Art. 120 (3) (d)). The requirement to have the concurrence of such a court is to prevent the DPP from discontinuing criminal cases he or she did not initiate without justifiable reasons. Nonetheless, the exception does not impair the independence of the DPP.

It is, therefore, correct to infer that the DPP has the unfettered discretion to bring charges against a person if he or she considers that any criminal laws have been infringed by that person. He also has the prerogative to terminate the charges even without assigning reasons, especially when the decision to prosecute was initiated by him or her. The framers of the Constitution were alive to the fact that criminal cases are affected by many extraneous circumstances. This discretion, therefore, enables the DPP to terminate and then reinstate charges as and when the circumstances of a given case have changed.

Yet, the paper also found out that whereas the Constitution provides for the independence of the DPP, it does not offer sufficient guardrails that can fortify the independence of the DPP from especially subtle executive interference, and direction, or control in any meaningful way. The Constitution is riddled with clawback articles that *de facto*, impair the independence of the DPP.

The DPP is exposed to the executive’s impulses through the executive’s power of investiture, as it were. Although the DPP is appointed by the President upon the recommendation of the Public Service Commission and with

the concurring approval of parliament (Constitution of Uganda, 199- Art. 120 (1)) the tripartite procedure of the DPP's investiture does not offer sufficient protection from the President's influences. This is because the tripartite procedure was contrived by the framers of the Constitution to address only one dimension of the two-dimensional problem, namely, to prevent the President, who's the appointing authority, from installing individuals amenable to him or her at the helm of an institution of a high public value such as the DPP.

By requiring the Public Service Commission to recommend an individual to the President to be appointed, therein is a tacit presupposition that the Public Service Commission initiates the process, and so the President does not control the process but participates in it midway. Implicit in that logic is the supposition that the appointing authority would not appoint individuals based on his personal or political preferences.

Yet, just in case there was a slim chance that the preceding bipartite procedure involving in the first instance the Public Service Commission and in the second the President, was flawed and the President appointed an individual he or she personally or politically favoured, another leg of the procedure requires Parliament or a subset of it to approve a Presidential appointment of the DPP and offers another layer of protection against especially the President's personal preferences, or so it seems.

However, as observed already, the three-legged procedure of the investiture of the DPP appears to have been designed to address one dimension of a two-dimensional challenge to the independence of the DPP in Uganda. Although there is no evidence to suggest that the tripodal procedure described above guarantees the independence of the DPP from undue presidential influence, interference, direction, or control, it does not even prevent the President from appointing a personal or political ally to the office. Some examples abound as follows:

Mike Chibita who was in 2013 appointed by the President as the DPP following the procedure laid down in the Constitution as discussed, had before served the appointing authority as his Private Secretary for legal affairs, and as MiniBane has opined, Mike Chibita had been in close association with the President before he was appointed the DPP by President Museveni (MiniBane, 2019). In the second instance, Richard Buteera was appointed on the 21st of September 1995, the penultimate day of the promulgation of the Constitution, which occurred on the 22nd of September 1995 (Besigye, 2014). This was done, according to Kizza Besigye, because Buteera, under the Constitution that would come into force just the next day, was not qualified to be DPP, the implication of it possibly being that the President couldn't wait for his preference to be blocked for being ineligible (*ibid*).

Nonetheless, Besigye's extrapolation of why the President couldn't wait one more day to appoint Buteera under the Constitution may be valid, it is also plausible that the President took the evasive manoeuvre because he was not sure that the tripartite procedure would land his man the job. Perhaps the President understood that Buteera was not going to be recommended by the Judicial Service Commission because he was unqualified, and perhaps, the Parliament also could have rejected his appointment had the President appointed him under the new Constitution (*ibid*). Whatever the incentive, one conclusion cogently suffices: the appointing authority, it doesn't matter who, will always and everywhere have personal preferences and political considerations when appointing the DPP, and in the absence of sufficient safeguards to protect his or her independence from the appointing authority, the DPP will be placed in a state of mind in which he or she kowtows to whoever has the power to appoint, discipline, or dismiss him or her.

The tripartite procedure provided for under the Constitution is not sufficient sentry against undue influence, direction, or control of the DPP by the appointing authority. First, if it was laid down as such to preclude the appointment of the DPP based on the personal or partisan preferences of the appointing authority, the tripartite procedure has so far failed to achieve that end in the obtaining environment. For it to be effective, the Public Service Commission has to be independent as well as the Parliament, from the executive; otherwise, the President can influence or compromise them to either recommend his preference in the case of the Public Service Commission or confirm him in the case of Parliament.

Unfortunately, the framers of the Constitution did not sufficiently provide for the independence of either the Public Service Commission or the Parliament. In the case of the Public Service Commission, the Constitution makes a skeletal and almost hollow statement that “*in the exercise of its functions, the Public Service Commission shall be independent and shall not be subject to the direction or control of any person or authority...*” (Constitution of Uganda, 1995- Art. 166 (2)) but does not go far enough to ensure that the envisioned independence is actualised in practice.

It is impossible for the Public Service Commission to achieve independence from a person or authority that populates it and can remove the members, except to the extent that either his largesse or lethargy so permits, but not if the appointing authority has an eagerness for or interest in a matter before the Public Service Commission. Thus, the Public Service Commission’s participation in the appointment of the DPP in Uganda does very little, if at all, to prevent the appointment of political or personal allies of the President or his or her stooges—and is not a sufficient guardrail against the possible fealty of the DPP so appointed to the President

This is why: since the President appoints individuals to the Public Service Commission, albeit with the approval of Parliament (Constitution of Uganda, 1995- Art. 165 (2)) and the President has constitutional license to remove individuals from the Public Service Commission without leave of any other person or authority if he or she can claim for instance incompetence or misconduct (Constitution of Uganda, 1995- Art.165 (8)), and can refuse to reappoint a member since nothing compels him to reappoint a member—with such power of the presidency over the Public Service Commission, members of the Commission have no security that would embolden them to defy or contradict recommending an individual who’s preferred by the President if they have cognisance of such preference. In lieu, it is highly likely, based on a rational choice, that members could seek to enchant their appointing authority in order to enhance or cement their chances of either being reappointed or not being removed. Such is one way the President can have his way with the Public Service Commission.

In the case of Parliament, which has the constitutional authority to confirm the appointment of the DPP by the President, the story is similar to that of the Public Service Commission, except the variation that the President doesn’t have the power of investiture over the Members of Parliament, in that he can neither appoint nor dismiss them. Nonetheless, the President can still wield immense influence over a parliament and have his way if he or she has a partisan majority that has a blind adulation of him or an unquestioning, even mindless fealty to him or her, confounded with an absence of constitutional checks on majority rule.

The obtaining constitutional architecture of Uganda undergirds majoritarian rule, and so long as the President has an overbearing influence on a partisan majority in parliament and on a committee of parliament that confirms presidential appointments, the President will always have his way regarding his preferred DPP when and if he has a compliant partisan majority in parliament and/or the committee of parliament that is empowered to confirm his appointments.

Thus, it is safe to infer that the three-pronged procedure of the investiture of the DPP as well as other presidential appointees, was contrived to preclude the DPP from a possible union with executive control such as had afflicted and inquired the constitutional dispensation antecedent to the current one, wherein the DPP subserved politicians. Yet, the procedure leaks and puts justice and the rule of law in trouble, in that, the President does not have to ask leave of anybody or authority to dismiss the DPP.

Nor is there present in the Constitution a trace of insulation, or anything teetering on inoculating the DPP in any form or fashion, against eviscerating the DPP from office at the pleasure of the President. And, therefore, a president who is armed with a spear while the DPP has no shield, enjoys a climate in which he needs no license to call the tune and the DPP to play it; unless the DPP is saintly and is *ipso facto* removed from earthly cares. In other terms, the DPP who has to execute the prosecutorial function in those circumstances can only assert independence in matters the President has an interest in if he/she doesn’t have to choose between his job and independence.

The finding of this paper that the DPP cannot be independent in the incumbent constitutional setup, despite the constitutional references to the independence of the DPP, is fortified by Aaken et al's (2004) contention that the performance of a public prosecutor in his prosecutorial function is contingent upon his personal independence vis-à-vis the government. They explicated that the personal independence of prosecutors is consequent upon whether and how they are nominated, elected, or appointed as well as whether and how are promoted and removed from office (Aaken et al., 2004).

Since the DPP in Uganda is not elected but appointed albeit upon recommendation by the Public Service Commission and the confirmation or approval by parliament, it is conscionable that I don't detain myself to a discussion involving the election of prosecutors vis-à-vis their independence. Aaken, Salzberger, and Voigt have concluded that public prosecutors who are appointed to a life tenure or a fixed non-renewable term, and those appointed by people who are not politicians, enjoy the most independence. Prosecutors who are appointed to life-long tenures have tended to absorb pressure from appointing authorities since they are insulated from repercussions related to the fear of losing their job. The same applies to prosecutors who are appointed to a single term since they are not tempted to please the appointing authority in anticipation of re-appointment.

However, the effect of a single-term appointment on the prosecutorial independence of public prosecutors is limited in that if the appointing authority has the authority to appoint a prosecutor who by law must serve a single term, to another position such as to be a minister or a judge, the single-term prosecutor may also be tempted to delight the appointing authority and thereby lend himself to the subservience of such appointing authority.

Aaken, Salzberger, and Voigt have reasoned that prosecutors who are appointed by the executive, as is common practice around the world are less independent, whereas those appointed by a body of prosecutors or a combined body of judges and prosecutors tend to lead to a high degree of independence from the executive.

In addition, they conclude that the behaviour of prosecutors towards members of the executive is influenced by the degree to which members of the executive determine a prosecutor's career including removal from office and transfer. If prosecutors may be removed at will by the executive, the incentive to resist political pressure will be reduced.

Impliedly, the nature of the appointment of the DPP in Uganda generates little or no independence since; the DPP is appointed by politicians (appointed by the President and confirmed by a subset of parliament); has no delineated tenure, and can be removed by the President at his discretion at any time.

Recommendations

The paper determined that *de jure*, the Constitution provides for the independence of the DPP, but also ascertained that *de facto*, the DPP is not independent due to a flawed mechanism of the DPP's appointment, the absence of a life tenure or a single-term tenure; and the fact that the DPP can be removed or re-appointed by the unilateral will of the President.

To ensure the *de facto* independence of the DPP in Uganda, this paper recommends that the Parliament of Uganda amends the Constitution to provide for the appointment of the DPP by a body of prosecutors or lawyers, not politicians; and should not be subject to removal by the President whether alone or in conjunction with Parliament. It further recommends that if the President should have the power to appoint the DPP, Parliament should amend the Constitution and provide that the DPP, in that case, should serve a life tenure or a fixed term that is not renewable and that in that case, the DPP upon expiry of the single term, should be ineligible for appointment to another public office.

Last but not least, to ensure that the DPP is not used by politicians to take over and discontinue cases initiated by private prosecutors, the article recommends that the Parliament of Uganda amends the Constitution to require the DPP to take over the prosecution of a criminal case with the concurring will and consent of an individual or entity that initiated it and only to continue it. As such, the amendment should also compel the DPP to revert the case to the private prosecutor who initiated should he or she lose interest in it and only the initiator should have the ultimate right to discontinue it.

References

- Aaken, A.V., Salzberger, E and Voigt, S. (2004). The Prosecution of Public Figures and the Separation of Powers: Confusion within the Executive Branch – A Conceptual Framework. Retrieved 19th January 2022 from: https://www.researchgate.net/publication/5144832_The_Prosecution_of_Public_Figures_and_the_Separation_of_Powers_Confusion_within_the_Executive_Branch-A_Conceptual_Framework)Constitutional Political Economy
- Bakibinga, D.B. (2018). The role of prosecutors in preventing torture and ill-treatment of accused persons and proposals for reform. *Revista Acadêmica Escola Superior do Ministério Público do Ceará*. Retrieved 12th January 2022 from: <https://revistaacademica.mpce.mp.br/revista/article/view/134/123>
- Bakibinga, D.B.(2019). Prosecutorial independence, discretion and strategy in the Commonwealth of the Bahamas. *Revista Acadêmica Escola Superior do Ministério Público do Ceará*. Retrieved 12th January 2022 from: <https://uap.ug/wp-content/uploads/2021/08/Prosecutorial-Independence-ARTIGO-13.pdf>
- Besigye, Kizza. (2014). Why fundamental reforms are key to credible elections. (The Observer, 29 June 2014) Retrieved 21st January 2022 from: <https://www.observer.ug/component/content/article?id=32505:why-fundamental-reforms-are-key-to-credible-elections>
- Calabresi, S.G. and Saikrishna B.P. (1994). The President's power to execute laws. *Yale Law Journal*, 104 (541). Retrieved 12th January 2022 from: https://openyls.law.yale.edu/bitstream/handle/20.500.13051/8863/29_104YaleLJ541_December1994_.pdf?sequence=2
- Driesen, D.M. (2020). The Unitary Executive Theory in Comparative Context. *Hastings Law Journal*, 72(1) Hastings Law Journal
- Hobbes, T.(1962). Leviathan or the matter, forme, & power of a commonwealth ecclesiasticall and civil. Springfield, Ohio: Collier Macmillan Publishers. (First published 1651),
- Hobbes, T.(1996). Leviathan. Cambridge: Cambridge University Press (First published 1651)
- Fairlie, John, A. (1923). The Separation of Powers. *Michigan Law Review*, 21(4). Retrieved 9th February 2022 from: <https://www.jstor.org/stable/pdf/1277683.pdf>
- Kazibwe, K.(2021a). Missing persons: Museveni says “some” detainees will be released unconditionally. (Nile Post, 6 March 2021). Retrieved 13th May 2022 from: <http://nilepost.co.ug/2021/03/06/missing-persons-museveni-says-some-detainees-will-be-released-unconditionally/>
- Kazibwe, K. (2021b). DPP drops charges against Museveni secretary accused of intimidating EC to give jobs to her relatives. (Nile Post, 30 November 2021). Retrieved 13th May 2022 from: <http://nilepost.co.ug/2021/11/30/dpp-drops-charges-against-museveni-secretary-accused-of-intimidating-ec-to-give-jobs-to-her-relatives/>
- Kurland, P.B. and Waters D. W. M. (1959). Public prosecutions in England, 1854-79: An essay in

- English legislative history. *Duke Law Journal*, 1959(4). Retrieved 2nd February 2022 from: <https://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=1686&context=dlj>
- Locke, J.(2017). *The Two Treatises of Civil Government*. London: Macat Library (First published 1689)
- Luna, E. and Wade, M. (2012). *The Prosecutor in Transnational Perspective*. Oxford: Oxford University Press
- Luna, E. and Wade, M. (2012c). The prosecutor as policy maker, case manager, and investigator. In Erik Luna (Ed), *The Prosecutor in Transnational Perspective*. Oxford: Oxford University Press
- MiniBane. (2019). *The President's Man: Justice Mike*. (MiniBane.wordpress, 7 December 2019). Retrieved 21st January 2022 from: <https://minbane.wordpress.com/2019/12/07/https-wp-me-p1xtjg-btb/> accessed 21 January 2022
- Nasiru, D. (2021). *Preserving the prosecutorial integrity of the Office of the Director of Public Prosecutions (D.P.P) in Commonwealth Africa: A case study of the Gambia, Kenya and Mauritius*. (Unpublished LLM/MA Thesis, Central European University 2021)
- Odoki, B.(1993). *The Report of the Uganda Constitutional Commission: Analysis and Recommendations*. Kampala: Uganda Constitutional Review Commission
- Rozenberg, Joshua. (1987). *The case for the Crown: the inside story of the Director of Public Prosecutions*. Equation Publishers
- Strauss, P. L. (1984). The Place of Agencies in Government: Separation of Powers and the Fourth Branch. *Columbia Law Review*, 84 (573). Retrieved 31st June 2021 from: https://scholarship.law.columbia.edu/cgi/viewcontent.cgi?article=1211&context=faculty_scholarship
- Todd, P.D. (2020). Federal Prosecutorial Independence. *Duke Journal of Constitutional Law and Public Policy*, 15. Retrieved 2nd February 2022 from: <https://scholarship.law.duke.edu/djclpp/vol15/iss1/7>
- Tumwine, W. (2017). *A critical analysis of the role of the Director of Public Prosecutions in the administration of criminal justice in Uganda*. (unpublished diploma dissertation, Kampala International University)
- URN. (2021). Museveni promises to unconditionally release 51 'misled' protestors' (The Observer, 6 March 2021). Retrieved 13th May 2022 from: <https://observer.ug/news/headlines/68736-museveni-promises-to-unconditionally-release-51-misled-protestors>
- Voigt, S. and Wulf, A.J. (2019). What makes prosecutors independent? Analysing the institutional determinants of prosecutorial independence. *Journal of Institutional Economics*, 15(1). doi:10.1017/S1744137417000212
- Weigend, T. (2012). A judge by another name? Comparative perspectives on the role of the public prosecutor. In Erik Luna (Ed), *The Prosecutor in Transnational Perspective*. Oxford: Oxford University Press.

Constitutions

Constitution of Uganda 1995

Constitution of Uganda (1967)

Constitution of Uganda (1962)

Parliamentary oversight of the security sector in Uganda

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Abstract

Oversight of the security sector cannot remain the exclusive preserve of the government alone without inviting potential abuse. In post-independence Uganda, the security sector has been at the center of political instability and human rights violations. The military has been used by various political groups to overthrow elected governments. From 1962 to 2021, Uganda has never witnessed a peaceful handover of power from one leader to another. This has largely been due to the intransigence of the security sector.

Consequently, the framers of the 1995 Uganda constitution provided that the security sector shall be subordinate to civilian authority and shall observe and respect fundamental human rights. This article articulates the various legal mechanisms at the disposal of the Parliament of Uganda to hold the security sector players accountable. While there are many oversight mechanisms, the human rights record of security sector institutions remains poor. Parliament faces many obstacles in overseeing the security sector such as the securitization of social service delivery, the privatization of security services, and the entrenched military traditions of secrecy and loyalty to the commander-in-chief. Until democratic notions such as executive accountability to Parliament, security sector political neutrality, and security sector human rights observance, are enforced politically, the dividends of parliamentary oversight of the security sector will remain low.

Keywords: *Parliament, security sector, oversight, democracy, accountability*

Introduction

Human wellbeing without security is an illusion. All human beings crave individual and collective security and abhor fear, worry, and apprehension. Security is also important for guaranteeing the economic well-being of countries. Almost all countries depend on their security sector institutions to spur and safeguard their economies.

At a national level, security sector institutions preserve law and order; protect the security of the State, persons, and property; safeguard democratic institutions and processes; and ensure the peaceful coexistence of different sections of the community. At the international level, due to global security threats, in addition to its national defense commitments, the security sector is increasingly becoming co-ordinated through bilateral or multilateral framework agreements and security forces may be involved in concerted or joint action under collective defense arrangements and/or international peacekeeping missions intended to prevent or settle conflicts or assist with post-conflict reconstruction. In short, security is indispensable to human happiness.

Background: The Security Sector in post-independence Uganda

Uganda was granted political independence by the British Government in 1962. Since then, Uganda has not yet witnessed a peaceful handover of power from one regime to another. At the center of political instability in Uganda has been the politicized military. The military and other security organs have been used by various political groups to overthrow elected governments or to champion partisan and regime interests rather than national or human security.

From the 1960s to 1995, Parliament, the national oversight body, was largely weak, non-existent, or a rubber stamp of the Executive branch. It could not call the security sector to account. During Amin's regime (January 1971- April 1979), Parliament was abolished and Amin ruled by decree with the help of the military that was populated by many foreigners recruited from Sudan.

Since the 1990s, there have been efforts to liberate the security sector from political actors' influence. Influenced by the democratization wave that swept through Africa at the end of the Cold War in the early 1990s, the framers of the 1995 Constitution of Uganda promised to end the misuse of the security sector by placing it under civilian control –under the oversight of the legislature. This was in recognition that there can hardly be an enduring democracy where the security sector is not under civilian control. Consequently, progressive provisions on the accountability and oversight of the security sector and respect for human rights by security agencies were inserted into the Constitution.

Article 208 provides that 'The Uganda Peoples' Defence Forces (UPDF) shall be non-partisan, national in character, patriotic, professional, disciplined, productive and subordinate to the civilian authority.' The functions of the UPDF were also spelled out as being: to preserve and defend the sovereignty and territorial integrity of Uganda, to cooperate with the civilian authority in emergencies, and in cases of natural disasters, to foster harmony and understanding between the defense forces and civilians, and engage in productive activities for the development of Uganda. In addition, the Constitution provides that members of the UPDF shall be citizens of Uganda of good character.

Similarly, the Uganda Constitution provides that the Uganda Police Force shall be nationalistic, patriotic, professional, disciplined, competent, and productive; and its members shall be citizens of Uganda of good character. The same standards for the army and police were expected of the Uganda Prisons Service and intelligence services.

Oversight of the security sector must be underpinned by an elaborate legal framework that provides parameters for the security sector's operations and obligations. Under articles 210, 214, 217, and 218 of the Uganda Constitution, Parliament was directed to make laws to regulate the organization and administration of the military, police, and prisons. Article 221 directs all the security sector institutions to observe and respect human rights and freedoms in the performance of their functions. These provisions have been translated into policy commitments.

The Uganda National Development Plan provides that the 'Defence and Security sector is responsible for defending and protecting people and their properties, the sovereignty and territorial integrity of Uganda, as well as ensuring peace and security for socio-economic development. It ensures that Ugandans enjoy freedom from threats, intimidation, and other pressures from within or outside the country that would undermine the basic rights and welfare, the territorial integrity of the state, and the functioning of the systems of governance.'

Structure of the paper

In this paper, three aspects pertaining to parliamentary oversight of the security sector in Uganda are discussed. The first is underscoring the importance of parliamentary oversight of the security sector as a precondition for socio-economic transformation.

The second is the description of the numerous parliamentary mechanisms for security sector oversight, and the third is the discussion of the challenges faced by Parliament in overseeing the security sector and holding it to account. This paper argues that while the Uganda Parliament has dense mechanisms of oversight of the security sector, there are still many challenges to overcome. The majority of these

challenges rotate around the poor democratic culture in Uganda, where the notions of democratic principles, such as executive accountability and security sector political neutrality, have not taken root. The security sector has been largely instrumentalized in how it deals with political candidates perceived to be opposing the interests of the current ruling elites.

Methods and Materials

The paper used a descriptive research design to shed light on the various legal/formal mechanisms that the Uganda Parliament uses to keep the security sector in check. Participant observation was undertaken to monitor the phenomenon of the study, namely the Uganda Parliament and the tools it uses to oversee the security sector. Since the respondents were observed in a natural environment, the characteristics observed are natural and the data collected are reliable. The paper also used the text analysis method to review the constitutional and legal frameworks for the oversight of the security sector in Uganda.

Literature Review

1. Parliamentary oversight of the security sector as a lever of democratization

The security sector is composed of all the structures, institutions and personnel responsible for security provision, management and oversight at national and local levels (DCAF, 2012). The security sector includes both actors that use force and those responsible for controlling how force is used through management and oversight (ibid). Security sector institutions such as the military, police, prisons, intelligence services and others are instituted by states to protect the state and its people from internal and external threats through the management of violence. Security sector institutions are supposed to play a vanguard role in the state that is to provide an enabling environment for other state institutions to provide social services; 2) fulfil and promote the rights of citizens; and 3) peacefully resolve conflicts. The goal of the security sector is to maintain peace and stability in a country.

Security sector institutions enjoy special powers which other public institutions do not have. These powers include:

- i. gathering of inaccessible information,
- ii. working in secrecy,
- iii. legitimately accessing, holding and using weapons of violence, and
- iv. adopting exceptional measures, which may violate the citizen's rights in exceptional circumstances.

There is always a risk of misuse or abuse of these powers by the security sector institutions. By virtue of their secret operations and access to weapons of violence, security sector institutions need to be properly controlled and held accountable by civilian authorities to guarantee that public security and stability are balanced with upholding democratic standards such as the rule of law, separation of powers, respect of human rights and political neutrality of armed forces.

Without parliamentary oversight, the security sector can cause trouble to the citizens who are supposed to be the beneficiaries of their services like guaranteeing stability, defence, peace, order and development. Consequently, parliamentary supervision of the security sector is required if potential abuse is to be abated.

In a democracy, to forestall potential abuse, no area of state activity should be a 'no-go' zone for Parliament, including the security sector. It has been asserted that "a state without parliamentary control of its security sector, especially the military, should at best be deemed an unfinished democracy or a democracy in the making" (Born & Lunn, 2003, p.7; Born et al, 2003. P.19). The fundamental role of parliament is, therefore, to ensure that security sector institutions do not misuse the privileges they enjoy, and also control and eliminate the emergence of an autocratic rule. A review of past autocratic

regimes reveals that monopoly control of the security sector sustained these regimes in power beyond their popular mandate.

Parliamentary control of the security sector is, therefore, ‘an essential element of power-sharing at the state level, and if effective, sets limits on the power of executive or president’ (Born et al, 2003. P.19). It can be asserted that the quality of democracy in a country is proportionally related to the degree of parliamentary oversight and control of the country’s security sector (DCAF, 2009). In a democracy, the security arena of the state should never be a ‘no-go’ zone for Parliament.

Parliamentary oversight serves three important democratic objectives: (a) **Legality**: to oversee that the security institutions are functioning within the boundaries of the law, both municipal law and international human rights law; (b) **Legitimacy**: to oversee that the will of the majority in parliament prevails and that the human rights of individuals and minorities are protected and that the main principles of good governance are respected; and (c) **Efficiency**: to oversee that the security institutions are sufficiently resourced, that they spend their resources efficiently and that the security sector activities are geared toward the goals as designated by the elected authorities.

It should be noted that parliamentary oversight of the security sector is not meant to weaken the effectiveness of the security sector. Rather, parliamentary oversight is designed to ensure an effective and accountable security sector that operates under legal and constitutional frameworks. Parliamentary oversight also ensures the legitimate and accountable use of force in accordance with universally accepted human rights norms and standards.

2. The normative attributes of effective and accountable security sector agencies

The UN Secretary General, in his report of 2008: *Securing peace and development: the role of the United Nations in supporting security sector reform* outlines common attributes of effective and accountable security sectors. These are:

- (a) *A legal and/or constitutional framework providing for the legitimate and accountable use of force in accordance with universally accepted human rights norms and standards, including sanctioning mechanisms for the use of force and the roles and responsibilities of different actors;*
- (b) *An institutionalized system of governance and management: mechanisms for the direction and oversight of security provided by authorities and institutions, including systems for financial management and review as well as the protection of human rights;*
- (c) *Capacities: structures, personnel, equipment and resources to provide effective security;*
- (d) *Mechanisms for interaction among security actors: establishing transparent modalities for coordination and cooperation among different actors, based on their respective constitutional/legal roles and responsibilities;*
- (e) *Culture of service: promoting unity, integrity, discipline, impartiality and respect for human rights among security actors and shaping the manner in which they carry out their duties.* (UN Secretary General, 2008)

The former UN Secretary General, Kofi Annan (ibid), observed that the security sector should be subjected to the same standards of efficiency, equity and accountability as any other public service. This means that the security sector should not be treated as a special public service to forestall a feeling by the security agencies of a sense of importance and indispensability.

The European Parliament’s Office of Promotion of Parliamentary Democracy (OPPD) (2013) and Inter-Parliamentary Union & Geneva Centre for the Democratic Control of Armed Forces (2003) laid down the parliamentary oversight of the security sector best practices. These entail parliamentary verification of compliance by the security sector institutions with general policy and established laws and regulations governing their operations and scrutinizing the effectiveness and efficiency of security sector institutions.

Parliamentary oversight supplements in-house control and oversight exercised by the executive arm and armed forces command. These internal controls include; the introduction of internal codes of conduct

that clarify rules to foster respect for fundamental values, rights and obligations, adoption of models for good governance and professionalism, exacting accountability of staff for breaches of discipline, and enacting procedures for complaint handling in a timely, impartial and professional way. However, these internal control and oversight mechanisms for the security sector cannot replace parliamentary oversight.

Other best practices for overseeing the security sector as articulated by the EU - OPPD are: setting the legal framework for oversight and influencing government security policy on a broad level; using the parliamentary budget control power to scrutinize the estimates and verify the use of allocated budget; and sanction in case of excesses/illegitimate conduct by the executive; use direct oversight organs such as the parliamentary committees, independent oversight bodies to assist parliament; demand to be involved in important decisions such as: prior approval in case of: foreign missions, war, state of emergency, international treaties; a *posteriori* control of decisions (with possibility to revoke or substitute); appointment of senior officials; oversight of defence procurement; demand access to (classified) information/ document, issuing summons; conducting public hearings; Consultations with civil society actors; instituting secrecy safeguards; and exercising investigative powers (European Parliament, 2013).

The foregoing attributes and best practices, if applied by national parliaments, have the potential of forestalling an emergence of a dictatorship where security sector institutions: operate as a state within a state; exercise undue influence over political processes; deliver security services in direct contradictions to the wishes and requirements of the people; show little or no respect for the rule of law; engage in systematic human rights violations; are misused by those in power to pursue their private and or party purposes; and are used as instruments for protecting and promoting regime security instead of human security.

Results and Discussion

1. Parliamentary mechanisms of oversight of the security sector in Uganda

Oversight is essentially about ensuring that the security sector operates according to the law, a good law at that. Recalling the history of Uganda that was characterised by political and constitutional instability, the framers of the 1995 Constitution, which Parliament has a duty to protect as per the provisions of Article 79 (3), entrenched security sector accountability in Chapter 12 of the Constitution. The targeted security sector institutions were: The Uganda People's Defence Forces (UPDF); the Uganda Police Force; the Uganda Prisons Service and intelligence services.

Article 79 of the Constitution imposes the law-making responsibility upon Parliament. In the area of lawmaking for security oversight, Parliament has enacted the requisite laws to regulate the operations, organization, and administration of the security sector. The Parliament of Uganda has also enacted two landmark pieces of legislation targeting the protection of the fundamental rights of citizens against violations by security sector actors. These are "The Prevention and Prohibition of Torture Act 2012" and "The Human Rights Enforcement Act 2019".

It can, therefore, be averred that there are legal parameters for the control and oversight of the security sector in Uganda. However, it is one thing to have the laws on security sector accountability in place and another to have those laws implemented. The Parliament of Uganda has to ensure that the laws passed it enacts are enforced and that security sector actors operate within the boundaries of such laws. Parliament also has to continuously evaluate the laws to ensure they remain relevant and effective by dint of post-legislative scrutiny processes. Therefore, in the area of post-legislative scrutiny of security sector laws, the Parliament of Uganda has not been effective.

2. Oversight through the Committee System

The Constitution, under article 90 (1) empowers Parliament to appoint committees necessary for the efficient discharge of its functions and to prescribe, by its rules of procedure, the powers, composition, and functions of these committees. With respect to the oversight of the security sector, Parliament under Rule 187 established 16 sectoral committees including two committees that specifically deal with

security sector oversight.

The two are: 1) Defence and Internal Affairs (to oversee the Ministry of Defence, Uganda People's Defence Forces, Ministry of Internal Affairs, Uganda Police Force, and Uganda Prisons Service), and 2) Presidential Affairs to oversee, among other agencies, the intelligence services (Internal Security Organization and External Security Organization).

It is incumbent upon the oversight committees to ensure on an ongoing basis through public hearings, visits to security sector premises, and interpellations that: 1) the will of the people through the majority in parliament prevails, 2) the human rights of individuals and minorities are protected, and 3) security sector institutions observe the principles of good governance such as transparency, efficiency, responsiveness and accountability in the operations.

According to Rule 189, the functions of these committees are to examine and comment on security sector policies, evaluate programs, projects, and activities of the security sector institutions; examine proposed legislation to regulate the security sector; examine recurrent and development/procurement budgets for the security sector institutions, monitor the performance of the security sector agencies; monitor the compliance of the security sector agencies with the provisions of the Constitution, approved plans and programs; and monitor the progress registered by the security sector institutions in meeting the sustainable development goals that fall within their jurisdiction.

The Constitution, under article 90 (3) (a) empowers the committees, including the security oversight committees, in the exercise of their functions, if they wish, to call any minister or any person holding a public office in the security sector or even private individuals to submit memoranda or appear before them to give evidence; employ qualified persons to assist them in their oversight work; conduct hearings and enforce the attendance of witnesses and examine them on oath; compel the production of documents; and issue a commission or request to examine witnesses abroad such as troops if deployed abroad.

The two committees of Defence and Internal Affairs and Presidential Affairs have a duty as per the provisions of Rules 159 and 189 of the Rules of Procedure of Parliament to oversee the activities of the security sector; scrutinize the annual budget estimates of the security sector institutions and advise the Parliament; conduct oversight visits to the premises of the security sector institutions (SSI); and monitor the compliance of the SSI with the relevant laws. For instance, in 2019, the Committee on Defence and Internal Affairs visited Somalia to assess the condition of Ugandan soldiers under the African Union Mission in Somalia (UNISOM) (Kazibwe, 2019).

In addition, the parliamentary standing committee on human rights contributes to the oversight of the security sector institutions with regard to human rights performance through the scrutiny of the annual reports by the Uganda Human Rights Commission. The annual reports by the Uganda Human Rights Commission that are made for Parliament under Article 52 (2) are analyzed by the Committee on human rights which in turn recommends to Parliament to undertake legislative measures to take on the said reports. The committee also acts on the reports by whistle-blowers on the allegations of human rights abuses by the security sector institutions.

The Human Rights Committee, in 2019, carried out surprise inspection visits to 'safe houses' which some whistle-blowers referred to as 'torture chambers.' However, the Internal Security Organization (ISO), Uganda's intelligence-gathering agency blocked the committee from accessing the so-called 'safe houses' due to 'security reasons' (URN, 2019). While parliamentary committees have the right to inspect security sector premises, industries, and businesses, it would appear that they (committees) have not routinely visited and inspected military industries and business enterprises owned by the military and prisons on account of fear of reprisals from the security institutions

3. Committee scrutiny of the budget estimates of the security sector institutions

The resources used by the security sector institutions are public resources that must be appropriated by Parliament after a rigorous process and applied for the intended purposes without unauthorized variations. Article 156 of the Constitution vests in Parliament the power to scrutinize draft budget estimates of government and appropriate funds to the Government to provide social services, including security services.

To that end, security sector leaders always present before Parliament - and its security sector oversight

committees - the budget estimates with detailed work plans, recruitment plans, and procurement plans. During the budget scrutiny process by the parliamentary committees, security sector ministers justify the security sector budget before it is appropriated by the Parliament. Once the security sector budget has been agreed to, it forms the performance contract between the Parliament and the security sector institutions, violation of which attracts sanctions.

Whenever the security of Uganda has been threatened, requiring additional funding, a supplementary budget request has been made to Parliament and if properly justified, Parliament has always appropriated supplementary budgets for the security sector, in some cases by cutting or suppressing expenditures of other government departments. The approval of annual and supplementary budgets depends on the satisfactory explanation rendered by the security sector leaders on how the previously appropriated funds were utilized and the activities were undertaken.

There is a parliamentary mechanism for examining classified budgets and accounts. The Public Finance Management Act (section 24) requires that a 3-member committee be set up to scrutinize classified budgets of the security sector. The committee consists of the chairperson of the budget committee; the chairperson of the defense and internal affairs committee and another person appointed by the Speaker.

However, the same law provides that the classified budget shall be presented as a single line item, with no details. The special committee does not report to the House. It conducts its work in secrecy. It is doubtful that this method of work deepens the tenet of legitimacy. For the committees to be effective mechanisms of security sector oversight, they require specialized knowledge to interrogate the complexities of military operations, arms markets, and military procurements. However, this capacity is still lacking within the security sector oversight committee secretariats

4. Scrutiny of the accounts of the security sector institutions by Parliament

The Auditor-General, on behalf of Parliament, audits/scrutinizes the accounts of the security sector institutions to confirm that the appropriated funds granted by Parliament were used for the intended and agreed upon security purposes. This audit takes place three months after the end of the financial year. During the audit, the accounting officers of security sector institutions must provide the auditor with all the required information.

Upon completing the audit, the Auditor General submits a report to Parliament which report is studied by the Public Accounts Committee, and by the sub-committee for the classified audited accounts. This sub-committee conducts its meetings on camera. In addition, the sub-committee does not report to Parliament its findings. The reason for the camera meetings and non-reporting to the House is to guard against exposing security secrets.

The Public Accounts Committee (PAC) usually summons the security sector accounting officers to explain the matters or answer queries raised by the Auditor General before the committee makes its recommendations to the House. At times, the reports by the Auditor General are used as guidelines by the Public Accounts Committee to conduct further inquiries into the queries. Once the recommendations of the PAC are adopted by Parliament, they are forwarded to Government for action.

Within 6 months upon receipt of the resolutions of Parliament on the audit, the Government is obligated to present to Parliament a Treasury Memorandum, which is a report showing action taken. If no action is taken by the Government, a member may request the Prime Minister, who is also the Leader of Government Business in Parliament by virtue of article 108A (2) (a), to render an explanation, failure of which could lead to the censure of the Prime Minister by Parliament.

5. Parliamentary vetting of persons nominated to head the Uganda Police Force and Uganda Prisons Services

Pursuant to articles 213 (2) and 216 (1) of the Constitution, the Inspector General and Deputy Inspector General of Police are appointed by the President with the approval of Parliament. The approval by Parliament comes from a vetting process conducted by the Appointments Committee of Parliament. This committee is chaired by the Speaker. During vetting, comments on the suitability of the nominated persons from the public are welcomed and considered. The purpose of the vetting process is to establish whether the nominated persons have the minimum qualifications, understand the requirements of the

offices, and whether their past public or private conduct and behaviors are consistent with the demands of the offices to which they are being appointed.

6. Questions to the Prime Minister and Ministers on the Security Sector

Questioning ministers on the floor of Parliament is one of the ways of holding the executive accountable. Any Parliamentarian can demand the minister in charge of defense or security or internal affairs to explain the performance of the security sector. In this regard, parliamentarians have on numerous occasions raised questions on police brutality, corruption in police, and security involvement in the destruction of wetlands and forest cover and misuse of firearms.

7. Parliamentary debate on peace missions and visits to troops abroad

According to Section 39 of the UPDF Act, 2005, the President is empowered to deploy troops outside the country for peacekeeping and peace enforcement missions. The deployment of troops outside Uganda for purposes of peacekeeping is to be carried out with the approval of Parliament. Since the mid-2000s, Uganda has deployed troops in Somalia and South Sudan. However, these peacekeeping deployments, though approved by Parliament, were not preceded by adequate parliamentary debate on the mandate of the mission, budget, risks of the military personnel, rules of engagement, chain of command, duration of the mission, and Parliament's right to visit troops deployed abroad.

Parliament has a mandate to carry out field visits / fact-finding missions to places where Uganda's troops are deployed as part of its oversight mechanisms. In 2019, the Parliamentary Committee on Defence and Internal Affairs undertook a guided tour of Somalia to assess the performance of the Ugandan troops under AMISOM. The delegation also met with the local leaders who gave testimonies on peace brought about by AMISOM, of which the UPDF is part. The team was also briefed about a range of medical services the UPDF offers to the troops and the community in Mogadishu (Kazibwe, 2019).

8. Oversight of military procurements

Due to reasons of security concerns, Parliament appropriates the classified budget for defense procurement as a line item. In the same vein, Parliament does not approve military procurements unlike in some countries such as the Netherlands. In the Netherlands (Willen, 2013, p.16), the process starts with the preparation of defense procurement beginning with the determination of the operational requirements.

This includes the type of equipment, number of equipment, technical specifications, the market explored and list of suppliers drawn, whether the equipment needed is in use by other countries and what their experiences regarding performance is, the life cycle costs or maintenance, etc. This information is presented to Parliament. Also presented to Parliament in the Netherlands are the feasibility of co-production by the domestic industry and complementary compensation (we buy yours; you buy ours). Decision-makers are invited to visit the suppliers and or attend demonstrations. However, these decision-makers have to be extra careful not to accept favors that might influence their judgment. Uganda should adopt the Netherlands' practice of obtaining parliamentary approval for defense procurements

Challenges and Recommendations

The agenda for parliamentary oversight in Uganda remains unfinished. In spite of the numerous mechanisms that are at the disposal of Parliament to oversee the security sector, numerous challenges impede effective oversight of the sector. Secrecy of the operations of the security sector is one of them. Parliament has not given adequate oversight to the military industries, classified budgets, and accounts. These areas remain a 'black box.' Parliament treads carefully, with a lot of caution, when handling security sector affairs. Some commentators in Parliament aver that instead of asking critical questions pertaining to the operations of the security sector and the conduct of some officers, parliamentarians, in most cases are advocating for more resources for the security sector during the budget approval process.

The second challenge is the militarisation of service delivery. Since 2010, Uganda's executive branch has progressively deployed security personnel in civilian domains to render social services. Army officers have been deployed in the departments of agriculture (NAADS), operation wealth creation, and in the

health sector especially to combat the COVID 19 pandemic.

In 2019, the Head of State directed that the UPDF should be engaged in the construction of public works in government ministries. The deployment of the military in almost all the ministries creates a challenge for parliamentary oversight. It essentially calls for a counter-revolution in Parliament, what one would call 'the securitization of all the parliamentary committees,' where all committees would have a security oversight perspective. Currently, this is not the case.

The third challenge relates to the multiplicity of security sector providers, which include the reserve force, the local defense force, the private security providers, and security companies. There are around 60 registered private security companies in Uganda and up to 20,000 private security personnel (Commonwealth of Nations, n.d). This state of affairs is a result of the policy of privatization of public service delivery to reduce public expenditure. This privatization has seen the government delegate some security functions to private security companies. While the private security actors can be controlled by Parliament through the Inspector General of Police, who, by virtue of statutory instrument No. 11 of 2013, is responsible for the control of private security agencies, the policy of privatization of security services has affected the traditional mechanism of parliamentary oversight of budget appropriation to security sectors and asking them to account.

It is widely believed that some of the mushrooming private security enterprises are linked to high-level political and security elites. These elites have a lot of influence on who is elected and re-elected to Parliament through campaign financing (Kupferschmidt, 2009). They can also buy off oversight committees not to focus on them or to produce favorable comments on the enterprises.

The presence of 10 military officers in Parliament as representatives of the Uganda Peoples Defence Forces has not helped to deepen the parliamentary oversight of the security sector. The President of Uganda once commented that the army representatives in Parliament are supposed to be 'listening posts' (Bwire, 2021) This means that they are not supposed to critically scrutinize the security sector. The Rules of Procedure prohibit military representatives in Parliament from leading the committee on defense and internal affairs. One respondent, who asked to remain anonymous, asserted that 'the military representatives, instead, tend to cushion the security sector, especially the military, from legislative scrutiny.'

Another respondent observed that 'With the presence of military representatives in Parliament that are supposed to be the listening posts, security sector was more of the overseer of Parliament than the reverse.' These assertions are corroborated by the fact that Parliament has not held accountable the Minister responsible for security agencies for the allegations of torture of civilians by the said agencies (The Independent, 2022).

While the 'listening posts' in Parliament may not stop other members from conducting oversight of the security sector, they most likely have an implicit influence on the will of the individual members of the oversight committees to effectively discharge their oversight functions. The Commander-in-Chief of the listening posts (so-called) is also the founder and chairman of the largest political party in Parliament over which he has firm control. The Members of Parliament who subscribe to the ruling party are encumbered by the political climate in which the president controls the ruling party and may be reluctant to question how the security sector is managed, in the presence of the "listening posts".

There has been an overt demonstration by the security sector that paints a gloomy picture of the accountability relationship between the legislature and the security sector. In 2017, security operatives invaded Parliament when parliamentarians were debating the Constitution Amendment Bill. Again, in 2018, the Minister of Security directed the blocking of the parliamentary committee on human rights from accessing the alleged 'safe houses' where suspects were allegedly being tortured.

Those two incidents demonstrate that the relationship between parliament and the security sector has not been without hitches. Partisan policing of multiparty electoral activities and police brutality towards actors suspected to be from political parties opposed to the ruling party (the NRM) is another critical challenge that "factionalizes" and politicizes parliamentary oversight of the security sector because of vested interests. Some MPs are beneficiaries of police brutality during general elections.

Another challenge has emerged from the new threats to human security such as international terrorism, organized transboundary crime, environmental calamities, etc, that have necessitated inter-governmental collaboration for security, for example, the establishment of the East African Standby Force, AMISOM,

et cetera.

Oversight of these inter-governmental security arrangements has tended to be problematic from the point of view of democratic oversight that is traditionally state-centric. Parliamentary oversight of international projects remains a challenge. Moreover, the instruments being used in the fight against threats like international terrorism such as international rendition practices, and the use of unmanned aerial vehicles – drones – for purposes of ‘targeted killings’ evade traditional mechanisms for parliamentary oversight.

All these challenges lead to an oversight deficit. The international dimension of the security sector oversight deficit could be mitigated through the help of international parliamentary institutions, regional parliaments, and legislative networks, but there is no adequate investment in these mechanisms through regular subscriptions.

Parliamentary oversight of the security sector is also compromised by the traditions of militaries that tend to emphasize loyalty of the forces to the Command-in-Chief than to civilian authorities. In the case of Uganda, the President is the founder of the National Resistance Army, which is now the UPDF. Accordingly, by virtue of the fact that he founded it, the President enjoys immense loyalty from the military. The importance of civilian control of the security sector can only be appreciated after a lot of sensitization of the security sector players by the civil society and building a culture of democracy that emphasizes the political neutrality of the security sector.

If there were to be paralysis in the legislature-executive relations, most likely, the military would take orders from the President rather than from Parliament. It appears that President Museveni, the Commander-in-Chief, does not condone impunity of the security sector as he occasionally calls for enforcement of discipline of the military according to the UPDF code of conduct and very well knows, from Uganda’s political history, the consequences of an undisciplined and uncontrolled army. He sometimes comes out to warn the security agencies against human rights abuse and the use of torture (Lumu, 2021).

There are also internal weaknesses that the Uganda Parliament has to address in its quest for effective oversight of the security sector, namely; inadequate appropriated budget for conducting inquiries, public hearings, and hiring experts in security sector governance as well as addressing staff shortages to support security sector oversight committee secretariats as well as building the analytical capacity of MPs and staff in matters of security oversight.

To this end, the Parliament of Uganda should consider adopting the Netherlands’ parliamentary approval of military procurements practice for its adoption. Given that securitization of service delivery is slowly becoming the policy of the government, Parliament should quickly capacitate all its committees with security sector oversight skills. In the same vein, Parliament should seek and partner with security sector think tanks, researchers, and scholars to build a critical mass of advocates to make the security sector a vehicle for deepening democratization in Uganda instead of being a tool for the torture of Ugandans.

Conclusion

There is no doubt that the 1995 Constitution created a legal framework for security sector oversight which has enabled Parliament to keep an eye on the security sector institutions and enacted laws and appropriated resources for the sector. As a result, the security sector is currently devoid of impunity.

However, in spite of these important interventions by Parliament, a lot remains to be desired. There is still inadequate legislative oversight of the security sector and as a result, the security sector operations at times lead to the violations of human rights as frequently reported by the human rights watchdog, the Uganda Human Rights Commission. In addition, due to the secrecy of the security sector operations, there are doubts that the substantial public resources invested in the security sector contribute to the socioeconomic transformation of the country. In a nutshell, the quest for effective parliamentary oversight of the security sector appears to be an unfinished agenda mainly because of the democratic culture in Uganda that is still evolving.

Political willingness of parliamentarians is paramount in exacting security sector oversight. But where the acquisition of the political seat/office depends on the support of the security sector, the political will of the politician to push for security sector accountability becomes greatly impaired. Ultimately,

effective parliamentary oversight of the security sector can only be a product of political/democratic reform.

The security sector cannot be effective and accountable to civilian authority when the political process/democratic path that brings in the civilian authorities is riddled with contradictions.

However, the good news is that there is hope for the better. The discourse about security sector oversight and accountability in Uganda is beginning to take shape. In September 2021, Nkumba University organized a National Security Studies Conference that brought together more than 100 participants from different universities and institutions.

That is an important development that will energize the struggle for the enhancement of parliamentary oversight of the security sector. Slowly, a family of security sector practitioners, researchers, think tanks and civil society organizations will coalesce. This will be an important resource that Parliament could benefit from in its quest for effective and improved oversight of the security sector. This family will provide the much needed social support to Parliament to improve its capacity to oversee the security sector. In addition, this family should be ready to push for political and democratic reforms in the country if there is to be effective oversight of the security sector.

References

- Born, H., Fluri, P.H., and Lunn, S. (2003). Oversight and guidance: the relevance of parliamentary oversight for the security sector and its reform. Geneva: DCAF and NATO Parliamentary Assembly.
- Born, Hans, Fluri, Philipp and Johnsson, Anders (eds.) (2003). Parliamentary oversight of the security sector: Principles, mechanisms and practices. Geneva: DCAF and IPU
- Bwire, J. (2021, January 30th). *You're listening posts in Parliament, Museveni tells new UPDF MPs*. Retrieved April 22nd, 2022, from monitor.co.ug: <https://www.monitor.co.ug/uganda/news/national/you-re-listening-posts-in-parliament-museveni-tells-new-updf-mps-3274554>
- Commonwealth of Nations. (n.d). *Find Security expertise in Uganda*. Retrieved April 22nd, 2022, from commonwealthofnations.org: <https://www.commonwealthofnations.org/sectors-uganda/business/security/>
- DCAF. (2012). The Security Sector: Roles and responsibilities in security provision, management and oversight. dcaf.ch. Retrieved 22nd April 2022 from: https://www.dcaf.ch/sites/default/files/publications/documents/DCAF_BG_3_The%20Security%20Sector.11.15.pdf
- DCAF. (2009). Security Sector Governance and Reform. files.ethz.ch. Retrieved 22nd April 2022 from: https://www.files.ethz.ch/isn/100124/18_SSR_SSG_en.pdf
- European Parliament. (2013). Parliamentary oversight of the security sector. dcaf.ch. Retrieved 22nd April 2022 from: https://www.dcaf.ch/sites/default/files/publications/documents/EP_Parliamentary_Oversight_Security_Sector_2013_BOH.pdf
- Kazibwe, K. (2019, October 28th). *MPs on Defence committee visit Ugandan troops in Somalia*. Retrieved April 22nd, 2022, from Nilepost.co.ug: <http://nilepost.co.ug/2019/10/28/mps-on-defence-committee-visit-ugandan-troops-in-somalia/>
- Kupferschmidt, D. (2009, August 21st). *Illicit Political Finance and State Capture*. Retrieved April 22nd, 2022, from idea.int: <https://www.idea.int/sites/default/files/publications/illicit-political-finance-and-state-capture.pdf>
- Lumu, D. (2021, August 15th). *Museveni warns security against human rights abuse*. Retrieved April 22nd, 2022, from New Vision: <https://www.newvision.co.ug/articledetails/112081>
- The Independent. (2022, February 25th). *Muhwezi censure motion collapses*. Retrieved April 22nd, 2022, from independent.co.ug: <https://www.independent.co.ug/muhwezi-censure-motion-collapses/>

URN. (2019, September 10th). *MPs denied access to safe houses*. Retrieved April 22nd, 2022, from observer.ug: <https://observer.ug/news/headlines/61928-mps-denied-access-to-safe-houses>

UN Secretary General. (2008). *Securing peace and development: the role of the United Nations in supporting security sector reform: Report of the Secretary-General*. un.org. Retrieved 22nd April 2022 from: https://www.un.org/en/ga/search/view_doc.asp?symbol=A/62/659

Willen F. Van Eekelen. (2013). *The Parliamentary Dimension of Defence Procurement: Policy, Requirements, Production, Cooperation and Acquisition*. Geneva Centre for the Democratic Control of the Armed Forces. Retrieved from 22nd April 2022 from: https://www.dcaf.ch/sites/default/files/publications/documents/Van_Eekelen_CSDP_procurement.pdf

Kupferschmidt David (2009) *Illicit Political Finance and State Capture*, International Institute for Democracy and Electoral Assistance, Stockholm

Tumukwasibwe, R. (2002) *Challenges to the Legislative Protection of Human Rights in Uganda: A case study of the 6th Parliament (1996 – 2001)*, MA Dissertation (Makerere University).

The Constitution of the Republic of Uganda

The Uganda People's Defence Forces Act 2005

The Police Act, Cap 303

The Uganda Police (Amendment) Act 2006,

The Public Finance Management Act, 2015

The Prevention and Prohibition of Torture Act, 2012

The Human Rights (Enforcement) Act, 2019

The Rules of Procedure of Parliament of Uganda

Role of Non-governmental organizations (NGOS) in enhancing Food Security: A Case of Association of Christian Resources Organizations Serving South Sudan (ACROSS) - Pibor County, Greater Pibor Administrative Area (GPAA), South Sudan

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Abstract

The study assessed the role of NGOs in enhancing food Security in Pibor County with specific reference to the Association of Christian Resources Organizations Serving South Sudan (ACROSS). The study aimed to establish the status of food security in Pibor County, to investigate the contributions of food aid to food availability, and to examine the contribution of microcredit to food access in Pibor County.

The study adopted a descriptive survey research design, utilizing both quantitative and qualitative methods of data collection and analysis. Based on the population census report of 2008, a study population was established against which 10% of the accessible population was considered to yield a sample of 120 respondents obtained using both simple random and purposive sampling techniques.

Surveys, interviews, and observation constituted the main methods of data collection. Data were analyzed using Microsoft Excel, as well as the content analysis method.

The study established that 50% of households in Pibor County were marginally food secure and the rest were food insecure with varying levels of food insecurity. This implies that the ACROSS's interventions had not yielded significant results for food security in Pibor County. It was also established that 54.2% of households enhanced their food availability and household meal frequency with the help of food aid, thus, improving their nutritional statuses. It was further revealed that 44.2% of households that had access to microcredit improved their income levels during unfavorable seasons.

Findings further revealed that access to microcredit alleviated capital constraints on agricultural households, hence enabling poor households with little or no savings to acquire agricultural inputs and higher-yield technologies that increased labor productivity.

The study recommended that NGOs [the ACROSS] and the Government of South Sudan through the National Ministry of Agriculture and food security should formulate policies that regulate short-term food aid, establish government microfinance institutions to ease access to credits, and set up agricultural training centers to enhance citizen's knowledge and skills in modern farming to alleviate food insecurity in the Greater Pibor Administrative Area (GPAA).

Keywords: Food Security, Pibor County, Greater Pibor Administrative area, South Sudan.

Introduction

At the 1996 FAO Rome World Food Summit, food security was defined as a condition that exists when “all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (FAO, 1996). Food security is a multi-disciplinary and crosscutting concept that is defined at household, national, regional, or global levels (URT, 2000; World Bank, 2008). At a national level, food security tends to be equated with the adequacy of a balance between national food demand and supply at a reasonable price. At a household level, it refers to a household’s food entitlement, which is the ability to meet the aggregate food requirements of all household members (Sen, 1991 and URT, 2000).

Initially, food security was analyzed and measured at international and national levels. However, in the 1980s the emphasis shifted to questions beyond food demand and supply, to household food accessibility and entitlement (Maxwell and Franken Berger, 1992). The entitlement theory (Sen, 1991) of famine and poverty in the 1980s helped to shift the focus away from ‘availability of food’, to a broader understanding that incorporated access. Sen (1991) viewed a household to be food secure if the entitlement or demand for food for household members is greater than their needs, arguing that households derive food entitlements from their own production, income, gathering of wild foods, community support (claims), assets, and migration.

The existence of food insecurity in the world community has literally kept community development actors busy trying to find intervention strategies. Massive efforts are continuously being made to involve both governmental and non-governmental organizations in partnerships that are expected to alleviate food insecurity in most marginalized communities. NGOs have increasingly become major players in offering practical solutions to food shortages. Civil society organizations crucially complement governments in ensuring food security at all levels of analysis, that is, the individual through the national levels (Barrett, 2002).

NGOs, especially those that are faith-based, have become cornerstones of emergency feeding programs worldwide (Barrett, 2002). Despite the efforts of NGOs, there is still a need for a food insurance scheme as a compensatory financial mechanism (Panos, 1978). NGOs are regarded as partners in nation-building and development because they complement governments’ efforts to improve the livelihood of local communities and contribute to poverty reduction (URT, 2001).

By 2011-2013, 842 million people, accounting for about 12.5% or an eighth of the world population, have received food aid (FAO, 2013). Even as these huge efforts are being made with the support of key stakeholders in the world, statistics still show that more people are increasingly becoming vulnerable to food insecurity due to biting poverty. This finding is supported by data from the United Nations Office for the Coordination of Humanitarian Affairs (UN OCHA) and the WFP, which shows that about 53% of the requested funding for food security interventions is available with WFP. This means that there is a continuous supply of relief food to the most vulnerable households in the pastoral areas and marginal agricultural lowlands including the northeastern part of South Sudan (WFP, 2013).

The problem of food insecurity is also linked to the mushrooming urbanization with hardly any industrialization to absorb the increasing number of deprived citizens. In the past, people in the rural areas fed those in urban areas through food crop farming. However, agriculture in the rural areas is under pressure to the extent that it is not in a position to feed the rural folk (Salih, 1994).

According to the latest State of Food Security and Nutrition in the World report (FAO, 2019), more than 820 million people suffer from daily hunger, and this number has been slowly increasing in the past three years. And almost 2 billion people face some form of food insecurity; i.e., without access to safe, nutritious, and sufficient food. Women, children, and indigenous groups remain particularly vulnerable to hunger. In addition to undernutrition, the world is also facing the growing threat of obesity, which continue to rise fast in all world regions and is assuming epidemic proportions (Banik, 2019).

In Africa, poverty and hunger are common. By 2011-2013, 24.8% of the population in sub-Saharan states, where South Sudan belongs, were food insecure (FAO, 2013). According to Mason (2009), the 2007/8 food crisis and the 2007/2008 global financial crisis strained economies around the world including those in Eastern and Southern Africa (ESA). Large sectors of people in ESA have experienced both chronic and transitory food insecurity. Some communities in these two regions have been under

chronic food insecurity for more than two decades without signs of escaping this trap.

The most affected by the decline in food are the rural poor whose vulnerability increased due to crop failure, low product prices, inefficient delivery systems for crops and agricultural inputs. Clearly, a major effort is needed to eliminate poverty and achieve food security in Africa—an effort that requires innovative strategies by Africans themselves with support from international development partners. This cannot be achieved without investing in human resources. This means putting people and their knowledge and information at the center of agricultural and rural development efforts. In addition, in recent decades, the food security situation of the poor has been a product of two important forces: chronic food insecurity and widespread fluctuations in annual food production (Salih, 1994).

In South Sudan, the UNFAO's situation report for January 2020 indicates that extreme food insecurity has persisted across the country as an estimated 47% of the population of South Sudan suffered from acute food insecurity immediately after the harvest period, a situation driven by conflict-related livelihood disruptions, climatic shocks, displacement, and the economic crisis. Hence, macroeconomic conditions remain very poor. According to the results of the latest Integrated Food Security Phase Classification (IPC) analysis, an estimated 5.5 million people faced severe food insecurity between January and April 2020. Of these, 4.3 million were estimated to be in a crisis (IPC Phase 3), the highest number ever after a harvest period. Further complicating an already dire situation was the infestation by desert locusts of the country, which had prior ravaged the Horn of Africa—further threatening the food security of the country (UNFAO, 2020)

For Greater Jonglei state (including Greater Pibor Administrative Areas), availability and accessibility to food by households were inadequate and highly unstable, deteriorating rapidly in face of the frequent and prolonged droughts (SSDP, 2011, 2013). A common feature of livelihoods systems in the state is the dependency on the livestock sector for revenues and the markets for most of their food purchases. Availability of water for domestic and livestock use is a major problem and households have to walk for long distances to get the scarce commodity.

This has prompted many NGOs undertaking community development programs to consider incorporating a component of food security. Based on the state's (Greater Jonglei) development plan, many NGOs have designed programs with food security intervention components. However, there is limited empirical information on how the interventions have enhanced food security among the target beneficiaries especially in the northeastern part of South Sudan, particularly in Pibor County where this study focused. Therefore, this study was an attempt to investigate the roles NGOs play to enhance food security.

Problem statement

Over the past three decades, the role of NGOs in food security and development, in general, remains an area of substantial debate. Many NGOs have become major players in the field of social, economic, and environmental affairs particularly focusing on poverty in marginalized areas in African countries. In connection with this, many studies have been conducted but not many have focused their efforts on establishing how the NGOs have enhanced food security, particularly in arid lands of South Sudan in general, and Pibor County in particular. Approximately 800 million individuals do not have access to enough food (FAO 2015), and 2 billion individuals experience key micronutrient deficiencies such as iron, vitamin, iodine, and zinc. (Ramakrishna, 2002) and poor dietary quality in the context of the obesity epidemic has now become a major determinant of the global burden of disease (Lancet Glob Health 2015).

In South Sudan, about 80 percent of the population lives in rural areas and relies on livestock and subsistence farming (WFP/REACH, 2017). Conflict in South Sudan has worsened due to crop deficits, low per capita levels of domestic food production, periodic droughts, widespread poverty, political unrest, shortages of basic staple foods, and inadequate rain.

The government of South Sudan and NGOs have crucial roles to play in enhancing food security, but it seems in South Sudan nobody questions the government's lack of accountability to its citizens with regard to food insecurity. Therefore, where the government has failed, NGOs have taken up that role. Today in South Sudan, food insecurity manifests itself through low levels of farm productivity due to

inter-communal conflict, cattle raiding, poor-post harvest management of stocks, and lack of viable alternative income-earning opportunities by vulnerable households to buy food.

According to South Sudan National Development Plan 2011-2013 for Greater Jonglei, availability of and accessibility to food by households in Greater Jonglei were inadequate and highly unstable. The same report indicated that a total of 800,000 people from the state were food insecure (SSDP2011-2013).

Therefore, this study sought to investigate the role of NGOs in enhancing food security with specific reference to the ACROSS organization in Pibor County

Understanding Food Security

Food security is one of the most debated and frequently talked about topics in the world, especially in Africa. Famine, drought, war, and disease have contributed greatly to the food insecurity in sub-Saharan Africa. At the 1996 FAO Rome World Food Summit, food security was defined as a condition that exists when “all people, at all times have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (FAO; 1996). According to Barrett, (2002). Food security is “access by all people at all times to enough and appropriate food to provide the energy and nutrients needed to maintain an active and healthy life. Food insecurity reflects uncertain access to enough and appropriate foods.

According to the FAO (2013), food security has four key dimensions which include; food availability, food accessibility, food utilization, and food stability. The Food And Nutrition Technical Assistance (FANTA) (2006) views food availability as a situation in which there are sufficient quantities of appropriate and necessary types of food from domestic production, commercial imports, or donors, which are consistently available or in reasonable proximity to individuals. It is viewed simply as the provision of a sufficient supply of food for all people at all times. Similarly, (FAO, 2013) defines Food accessibility as ensuring that all households and individuals within those households have sufficient resources to obtain appropriate foods for a nutritious diet. The FANTA (2006) also describes food accessibility as follows: It is “when individuals have adequate incomes or other resources to purchase or barter to obtain the levels of appropriate foods needed to maintain consumption of an adequate diet and nutritional level.”

According to the FAO, food utilization focuses on the biological needs of a particular age group in a given population (FAO, 2013). Food utilization is about how people biologically benefit from the food they take so that they can lead healthy and productive lives when the human body makes use of the nutrients in the food that is consumed, properly digested and absorbed. However, for Franklin (2015), food stability is the dimension that addresses the stability of the other three dimensions over time. People cannot be considered food secure until they feel so and they do not feel food secure until there is the stability of availability, accessibility, and proper utilization (Mudzonga & Chigwada, 2009).

The Global, Regional, and National Status of Food Security

Globally, according to FAO (2013), 842 million people in 2013 were estimated to be suffering from chronic hunger and regularly not getting enough food to conduct an active life. The number was predicted to increase despite diverse and strategic interventions by a number of development agencies. Similarly, agreeing with the FAO, the United Nations predicts that by 2050, over 200,000 people globally could require attention in terms of food supply among other demands. Although previously there was significant improvement and effort in attaining the Millennium Development Goals (MDGs) and now the Sustainable Development Goals (SDGs) in general, the FAO indicated that Sub-Saharan Africa (SSA) remained in chronic hunger (FAO, 2013). This observation leaves questions regarding intervention strategies being adopted in these regions. Although enough food is produced globally to meet every person's dietary requirement adequately, access to food breaks down at the community, household, and individual levels (World Bank, 2008). It is globally estimated that some 840 million people were undernourished in 1998–2000, 11 million in the industrialized countries, 30 million in countries in transition, and 799 million in the developing world (Clover, 2003).

The World Food Summit, held by the FAO in Rome in 1996 reaffirmed the right of everyone to safe and nutritious food. Heads of state and government committed themselves to eradicating hunger in all

countries, with the immediate goal of reducing the number of undernourished people to half by 2015. However, one of the greatest challenges as to how to achieve this goal in Africa and especially in Sub-Saharan Africa (SSA) where chronic hunger is widespread (FAO, 2006), remained.

In Africa, the FAO (2014) reported that about 800 million people were without food on regular basis globally. Out of these people, 60 % were from Asia and Africa. However, about 33 % of Africans suffered hunger compared to Asia which stood at 16 %. 22 countries in the world were undernourished and 16 of these countries were from Africa with an undernourishment of Prevalence (PoU) rate of over 35% (FAO, 2017; WHO, 2017). It is further observed that the number of undernourished people in the African continent has steadily increased since the early 1990s from 175 million to 239 million today. Of the 36 countries requiring external food assistance, 28 countries come from African countries accounting for over 50% of the African countries. These include countries that are large net importers of cereals and fuels, with generally low per capita incomes and relatively high levels of malnutrition (Kingori, 2013).

In many countries, including those in Sub-Saharan Africa (SSA) there are examples of hungry people in food surplus areas. This comprises people who lack adequate income or assets to purchase or produce enough food for themselves and their families. Ironically, food insecurity is the most severe in rural Africa, where farming and herding are still the main means of livelihood. Ninety percent of the Africans living in poverty are rural dwellers. The number of African children under five years of age that are chronically hungry reflects the seriousness of the poverty problem (FAO, 1996).

In South Sudan, according to the (FSMS, 2014) food security monitoring survey Report, indicates that in Jonglei, Upper Nile, and Unity, an estimated 1.4 million, are in humanitarian crisis requiring urgent assistance compared to 1.1 million people identified prior. Unity state has the highest population of severely food insecure households, estimated at 619,000, followed by Jonglei and then Upper Nile. The number of severely food insecure people is in line with the levels of displacements and the number of conflict incidences. Moreover, large fiscal deficits and expansionary monetary policies have led to high rates of inflation, the balance of payments deficits and a sharp depreciation of the South Sudanese pound. This in turn has resulted in an economic crisis that has further worsened the status of food security and household welfare in general (FSIN, 2018).

Many vulnerable families in South Sudan continue to depend on food assistance to meet their basic needs. Key drivers of the high levels of acute food insecurity in the country include the violence's persistent disruptions to livelihoods activities, poor macroeconomic conditions, cereal production shortages, below-average access to livestock products, and elevated food prices. In this context, enhancing food security (physical, social and economic access to sufficient, safe, and nutritious food for all people at all times) will require a multi-faceted set of public and private investments, sound policies, and targeted interventions for especially vulnerable households (WFP and REACH, 2017).

The Contribution of Food Aid to food Availability

According to Barrett and Maxwell (2005), food aid comprises foreign assistance involving international sourcing of concessional (either free or at a cost lower than the market price of the food commodity in question) resources in the form or for the provision of food. A good household consumption pattern is achieved when the consumption of food is adequate in terms of quantity, is safe, and is of good quality to make up a healthy diet (Agriculture and Consumer Protection, 2010).

Food aid to households is very important during food shortfalls in households because it increases access to food by households (FAO, 2008). Food aid from various donors such as the USA and the EU acts as a relief during emergencies (Gitu, 2004). The United States is the world's largest food donor and provides approximately half of all food aid to vulnerable populations throughout the world. In 2008, the US government provided more than 2.6 million metric tons of food commodities worth more than \$2.6 billion to 56 million beneficiaries worldwide (USAID, 2009).

Dayton & Hoddinott (2004) contend that food aid can play a significant role in increasing food consumption as it ensures its availability. In their studies on the impact of food aid, Bezuneh and Deaton (1997) observed that food aid was one sure channel for food availability and a real safety net for food-insecure communities in developing countries. The study also highlighted a remarkable increase in total household food consumption in the Rift Valley Province of Kenya. It was further established that a considerable number of households participated in food for work activities and consumed 16% more protein, 26% more calories, and 42% more fat than the non-participating households.

Food aid has been used for market development purposes. One of the main aims of food aid is to enhance a channel through which food can be distributed from producer to consumer. This can be achieved by utilizing short-term food aid as a catalyst for expanding local food production, processing, and distribution with the aim of ultimately replacing food aid with domestic food production in a period of a few years—consequently, achieving a value-added output growth in the recipients' economy (Maxwell and Barrett, 2005)

Barrett (2006) also asserts that many households receiving food aid may decrease the demand for the commodity received and produced locally by selling more of it. At farm level, they noted significant nutritional gains experienced by households, playing a significant role in food-for-work activities and attributed these nutritional gains to additional household income generated through food for work that is directed at additional consumption. According to a study by Bezuneh and Deaton (1997), the income elasticity of demand for food among the food-for-worker-participants was higher when income was provided in the form of food. The study discovered that more food received as wages through food-for-work was consumed in contrast to the quantity of purchased food that would have been consumed.

According to Mudzonga and Chigwada (2009), food preferences have changed in recipient communities as a result of a constant supply of different types of food aid. People are now more interested in food distributed by humanitarian organizations since it is free and easily accessible. Literature has revealed that developed countries with food surpluses were more concerned with their own national interests and trade. Current literature reveals that little has been done to assess the potential effects of food aid on food availability, especially in vulnerable and conflict-prone environments such as South Sudan.

Access to microcredit and food Accessibility

The idea of microcredit is a Grameen Bank innovation and the success of the microcredit scheme of the Grameen Bank among the poor women in rural Bangladesh. This success story has spread. Microcredit has been increasingly used as an effective tool for poverty alleviation and is regarded as a “trickle-up” approach that has created new hope in the poverty alleviation endeavors. It has also been described as giving more hope to poverty alleviation than any other idea. There is therefore a global consensus that has made the microcredit approach a new paradigm for economic development (Agom, 2001).

In recent times, many authors have tried to distinguish the two terms, namely; microfinance and microcredit. Microfinance is defined as the provision of loans, savings opportunities, insurance, money transfers, and other financial products targeted at the poor and low-income households (Ehigiamuose, 2005). In this paper, microcredit means the provision of small loans to the poor and low-income households especially farmers to be used for production and business to enhance food access. In most developing countries, agricultural credit is an important factor for increased agricultural production and food security because it enhances productivity and promotes standards of living by breaking the vicious cycle of poverty for small-scale farmers (Adebayo and Adeola, 2008)

Zeller and Sharma (1998) argued that microcredit can help establish or expand family enterprises, potentially making the difference between grinding poverty and an economically stable and secure life. Zeller et al. (2001), in their study of group-based financial institutions for the rural poor in Bangladesh, measured the impact of the access to NGO credit services on various household welfare indicators. Overall, the results showed that the targeted credit programs have had a positive impact on household welfare in a number of ways: the quantity and quality of food consumed, the health of household members, and the children's education, improved.

In a study of the implications of credit constraint for risk behavior in Malawi, Eswaran and Kotwal (1999) observed that the provision of microcredit to farmers is an effective tool and strategy for promoting the adoption of improved technologies that will bring about improvement in their living standards. Access to credit, they say, promotes the adoption of risky technology through the relaxation of the liquidity constraint as well as, through the boosting of a household's risk-bearing ability. With the option of borrowing, a household can do away with risk-reducing and inefficient income diversification strategies and concentrate on riskier but efficient investments.

A study conducted by Blumberg (1989) and Carloni and Goddard (1987) found that the provision of microcredit to women will lead to an improvement in food security for poor households. Food consumption is expected to increase for different reasons. First, borrowing is expected to have a positive income effect, hence it is expected to lead to improved economic access to food through purchase.

Second, the investment of received credit in agricultural production is expected to lead to increased food availability at the household level. The third reason why food security is expected to improve is through the consumption smoothing effect of borrowing

Methods and Materials

Taking Pibor county in GPAA as an area of focus, the study adopted a largely descriptive survey research design utilizing both qualitative and quantitative approaches. The study drew a sample of 120 respondents, from which 30 key informants were drawn randomly and purposively across Pibor county GPAA based on their association and relationship with ACROSS, the researchers were convinced they would be able to provide the necessary information (Liamputtong and Ezzy, 2005). Data were collected with help of in-depth interviews and survey methods from a cross-section of the study population drawn from a large pool of respondents encompassing ACROSS food security project intervention beneficiaries, NGO officials, and local leadership within Pibor county GPAA.

Before engaging respondents for data collection of any sort, the objective of the study was first explained to the participants, and consent was secured as appropriate. Interviews were structured in such a way that the identities of the respondents were disguised with codes (pseudonyms) as a way of creating a conducive environment for an open discussion. Similarly, respondents were not required to indicate their names or anything that could expressly identify them. Quantitative and qualitative data were analyzed using both MS Excel, content, and thematic analysis techniques.

Discussion of Findings

Household Food Security Status in Pibor County

Food security remains a key objective for nations and communities globally, especially among communities experiencing diverse forms of human and state safety challenges. Attaining sustainable food security remains an overarching contemporary imperative within the global framework of sustainable development goals (SDGs). Using the Household food security survey module, the status of food security in Pibor county was measured with a view to establishing its true levels. The survey module indicates a scale with the corresponding status. They included; high food security (0), marginal food security (1-2), and low food security (3-7), while very low food security was represented by a scale of (8-18).

Key findings of the study indicated that Pibor county was a marginally food secure area with the majority of respondents at 50% indicating such. 33% of respondents revealed that Pibor was a low food secure area while 11% indicated that it was a very food secure area. Only 5% of respondents indicated that Pibor was an area of high food security as reflected in the table below:

Indication of food security status of Pibor County

Food security status	Scale/value	Frequency	Percentages
High food security <i>Had No problems & anxiety of accessing food</i>	0	6	5.0
Marginal food security <i>Had problems sometimes but quality, quantity not reduced.</i>	1-2	60	50.0
Low food security <i>Reduced quality & variety</i>	3-7	40	33.3

Very low food security <i>Food intake reduced, eating patterns disrupted.</i>	8-18	14	11.7
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Source: Primary data, 2020

Consistent with previously published studies on food security in conflict, fragile states, and regions such as South Sudan, findings generally indicated that the majority of the households in Pibor were marginally food secure despite ACROSS's food security interventions. This implies that prior ACROSS food security interventions, most households were surviving on reduced food quality and in some cases, nearing total starvation as indicated by the very low food security status reflected by a scale of between (8-18) to which 11% of respondents confirmed. Research by FSIN, 2018, indicates that globally, a number of people facing food insecurity spiked from 100 million to a crisis level of 124 million in 2017 compared to 100 million in previous years.

Although historic trends indicate a slight reduction in global food insecurity levels, South Sudan is categorized among countries under a 'protracted crisis' situation which continue to occasion disruption on food security and aggravates risks of food insecurity. Such a situation as observed by (Tilman & Marco, 2019; FAO et al., 2017) is compounded by conflict-induced displacements, state fragility, and weak institutional frameworks all of which characterize South Sudan as a state. The findings, therefore, suggest that the level of current interventions by ACROSS is yet to impact significantly on household food security in Pibor county.

Contribution of Food aid to food availability in Pibor County.

The contribution of food aid to food availability in Pibor county was investigated using interviews. To establish the contribution of food aid to food availability, respondents were probed on a number of aspects key among which was; whether food aid increased their household meals frequency and also, whether it improved their living conditions in any way. Overall, findings, as reflected by 54.2% of respondents, indicated that food aid greatly enhanced household meals frequency. 19.2% disagreed with that while 5% strongly disagreed. Only a small portion of 3.3% expressed uncertainty.

Such responses are a clear testament to the fact that food aid as undertaken by ACROSS has greatly enhanced and facilitated food household food availability levels in Pibor county. Like any other normal household, the ideal situation would have been to ensure food availability for sustainable living. However, owing to existing vulnerabilities at hand, many households are unable to guarantee food availability- a factor that draws them closer to starvation and malnutrition. As a result, food aid has proved a key imperative for household wellbeing as a basis for household nutrition needs. In a study by Jere (2007), food aid was highlighted as one of the major interventions that not only guarantee food security but also its availability and therefore, an indispensable phenomenon in situations where communities experience severe shocks.

Overall, results suggest that majority of households that were beneficiaries of food aid were able to step up their meal frequencies and in turn improved their living conditions. This collaborates with one study by (Jere, 2007) which highlighted food aid as an imperative safety net mechanism for highly vulnerable communities.

In an interview conducted with sections of community members who also double as food aid beneficiaries, the following is what they said when asked about food aid contribution to individual household food availability:

".....as you can see our area is too dry and unsupportive of agriculture. Sincerely speaking, as of now, we are only able to have meals because of food aid otherwise without it we would be severely impacted (section of food aid beneficiaries, August 2020)"

Such views illustrate the magnitude of food insecurity and underscore the importance of food aid as a household support mechanism. Currently, South Sudan just like the rest of a global community of countries is striving to attain Sustainable Development goal 2 - of ending hunger, achieving food security, and improved nutrition.

Contribution of Microcredit to food access

As an act of extending small loans to impoverished and vulnerable borrowers who largely lack collateral and steady employment, microcredit is acclaimed globally for successfully enabling highly impoverished people and communities to undertake self-employment initiatives and subsequently begin to generate income for the improvement of their welfare (Pitt and Khandker, 1998). Findings of the study indicated that 44.2% of respondents expressed that access to microcredit increased their household level purchasing power and subsequently enhanced their access to food. 50% of respondents indicated that access to microcredit had facilitated their access to farm inputs such as fertilizers, seeds, and agrochemicals that enhanced food production. While a total of 59.2% of respondents indicated they were able to diversify their dietary needs as a result of access to microcredit.

The findings of the contribution of microcredit to food access as reflected above are indicative of situations as experienced by a spectrum of household communities in Pibor county. As reflected in the results, access to microcredit has in many ways impacted household capacity for food accessibility. While in some cases it has directly enhanced their purchasing power, in others, it had a significant influence on their food production hence facilitating availability and access.

A significant percentage as reflected above also indicated an ability to diversify dietary needs as a result of access to microcredit. The findings collaborate with studies conducted by (Zeller et al., 2001 & Morduch, 1998) which showed that access to credit had a significant and strong effect on income generation as it improved income levels during unfavorable seasons. Implying that there was a positive link between access to credit and welfare. In a related study, Pitt & Khandker (1995), utilizing similar data s Morduch (1998), found a sizeable and significant effect of microcredit on household income which positively influenced food access.

During an interview, one of the respondents expressed that:

“....in our community, we are poor and don't have alternative access to money and yet agricultural inputs such as agrochemicals and seeds are so expensive. Without access to microcredit, it would be impossible for us to have such necessary inputs (respondent I, August 2020)”

The above narrative clearly highlights the importance of access to microcredit and reinforces findings by (Diagne & Zeller, 2001), which established that access to credit enhances welfare outcomes by alleviating the capital constraints on agricultural households hence enabling poor households with no or little savings to acquire agricultural inputs. This lowers the opportunity cost of capital-intensive assets relative to family labor thus encouraging the adoption of higher-yielding technologies and subsequently increasing land and labor productivity (Diagne & Zeller, 2001)

The indication by 59.2% of respondents that they were able to diversify their household dietary needs as a result of access to microcredit, resonates positively with findings of a study by (Thuita et al., 2013), which showed that households of microfinance clients consumed more nutritious and diverse diets compared to those of non-clients reflected in the dietary diversity scores for the two categories which were significantly different.

Conclusion

Owing to the findings of the study, there is no doubt that ACROSS an NGO has positively influenced food security in GPAA. Evidence largely indicated in many ways that ACROSS an NGO has been instrumental in contributing to food security. Although the government of South Sudan has equally played a role, it has largely been ineffective in single-handedly addressing matters of food security leaving a huge gap at the community & household levels which NGOs such as ACROSS have filled. From the field findings, it is clear that food insecurity still looms despite interventions by ACROSS. It is therefore imperative for government to do more and strive to reach as many households as possible.

Recommendations

In view of the study findings, it is generally recommended that the government of South Sudan undertakes to mobilize effective partnerships to train and empower local people with modern agricultural farming techniques and practices. This will not only address the challenge of dependence on NGOs but will in the long run create sustainable avenues for food security in Pibor county and GPAA in general. Additionally, since food aid cannot be relied upon as a sustainable solution, the government of South Sudan should equally establish institutional mechanisms with a view to facilitating community transition from food aid to community food cultivation for a sustainable future.

References

- Adebayo, O. & Adeola, R.G. (2008). Sources and uses of agricultural credit by small scale farmers in Surulere Local Government Area of Oyo State. *Anthropologist*, 10(4), 313-314.
- Agom, D. I. (2001). *Impact of microcredit on agricultural enterprises in Cross River State, Nigeria* (Unpublished doctoral dissertation). University of Ibadan, Nigeria.
- Agriculture and consumer protection (2010). International consultation on integrated crop-livestock Systems for Development. "The Way forward for sustainable production intensification. UNFAO Publication.
- Amin, M.E (2005), Social Science Research, Conception, Methodology and Analysis. Kampala: Makerere University Printers
- Barret C. (2002) "Food security and food assistance programs": Handbook of agricultural economics Barrett, C.B., 'Food Security and Food Assistance Programs', eds., Handbook of Agricultural Economics, volume 2B (Elsevier Science: Amsterdam.
- Banik D. (2019). Achieving Food Security in a Sustainable Development Era. Centre for Development and the Environment, University of Oslo, Oslo, Norway
- Barrett, C. B. (2006). Food aid as part of a coherent strategy to advance food security objectives. Background paper to Food and Agriculture Organization of the United Nations concepts, dynamics, and policy implications. *Food policy*, 26(4), 315-331.
- Barrett, C. B. (2006). Food Aid's Intended and Unintended Consequences. FAO, Rome
- Bezuneh, M., & Deaton, B. (1997). Food aid impacts on safety nets: theory and evidence: a conceptual perspective on safety nets. *American Journal of Agricultural Economics*, 79(2), 672-677.
- Blumberg (1989) & Goddard (1987): Preparing for climate change. DIANE Publishing 1993.
- Burger, M. (1989). Giving women credit: The strengths and limitations of credit as a tool for alleviating poverty. *World Development*, 17, (7), 1017-1032
- Canadian Coalition on Climate Change and Development (2009). Enhancing resilience to drought in Kenya arid and semi-arid lands. Centre for Science and Technology Innovation- Nairobi, Kenya.
- Cheng, E. (2006). "The Demand for Micro-Credit as a Determinant for Microfinance Outreach – *Current Concepts and Approaches for Latin America*. Tulane: Tulane University.
- Clover, J. (2003). Food Security in Sub-Saharan Africa, *Journal of African Food Security Review*, Volume 12.

- Diagne, A and Zeller, M (2001). "Access to Credit and Its Impact in Malawi". Research Report No.116 Washington D.C USA: International Food Policy Research Institute (IFPRI)
- Dayton-Johnson, J., & Hoddinott, J. (2004). Examining the incentive effects of food aid on household behavior in rural Ethiopia. The International Food Policy Research Institute.
- Ehigiamuose. (2005). Tested Institutional Practices for Efficient Microfinance Services Delivery. Paper Presented at the National Seminar to mark the International Year of Microcredit in Nigeria. Held at Transcorp Hilton, Abuja, Nigeria. November.
- Erickson, and D. Stewart. 2012. "Coping Strategies of Street-involved Youth: Exploring Contexts of Resilience." *Journal of Youth Studies* 15 (6): 744–760. doi:[10.1080/13676261.2012.677814](https://doi.org/10.1080/13676261.2012.677814).
- Eswaran, M. & Kotwal A. (1999). Implications of credit constraints for risk behavior. *Oxford Economic Papers*, 42 (2), 473-482.
- FAO. (2008). *World Food Crisis*. New York: United Nations.
- FAO, IFAD, UNICEF, WFP, WHO (2017). The State of Food Security and Nutrition in the World: Building Resilience for Peace and food security. FAO, Rome.
- FAO (2013). The State of Food Insecurity in the World the multiple dimensions of food security; Rome-Italy
- FAO (1996) World Food Summit. Rome (Italy). Retrieved on April 10, 2020 from http://www.fao.org/wfs/index_en.htm.
- FAO (2006). Food Security and Agricultural Development in Sub Saharan Africa: Building a case for More Public support. CIRAD, Rome
- FAO (2015) International Fund for Agricultural Development; World Food Program. The state of food insecurity in the world 2015. Strengthening the enabling environment for food security and nutrition. Rome (Italy) Retrieved may 3, 2020. from: <http://www.fao.org/hunger/en/>.
- FAO (2020). Crop Prospects and Food Situation, Quarterly Global Report volume. 1, March 2020. Technology & Engineering, food science/food safety security Published by the food and agriculture organization of the united nation, org. Rome, Italy
- FAO (2014). The state of food insecurity in the world, SOFI. Available from: <http://www.fao.org/publications/sofi/2014/en>. Accessed on (03/04/2020).
- FANTA (Food and Nutrition Technical Assistance). 2006. Food security. <http://www.fanta.com> Date of access: 1st July 2020.
- Food and Agricultural Organization (2017). Regional Overview of Food Security and Nutrition in Africa. The food security and nutrition–conflict nexus: Building resilience for food security, nutrition and peace. Accra. Available from: <https://reliefweb.int/.../2017-africa-regional-overview-food-security-and-nutrition-food>. [Accessed on 6/March/2020].
- Frankline. G (2015) unpublished thesis: Influence of non-governmental organizations intervention strategies on food security in arid lands. University of Nairobi
- FSIN (2018). Global report on Food Crises, FAO, Rome
- FSNMS (2014). South Sudan Food security and nutrition monitoring survey/assessment report Published by world food program South Sudan, Juba available at: Juba.VAM@WFP.org

- Gitu, K. (2004). *Agricultural Development and Food Security in Kenya: Building a Case for More Support*. Nairobi: FAO.
- Jere, P (2007). The Impact of Food aid on food markets and food security in Malawi. EQUINET Discussion paper number 45, Lilongwe, Malawi
- Kingori, J. K. (2013). The Influence of Agricultural Technologies on Food Security among. Unpublished thesis, University of Nairobi -Kenya
- Kothari, C. R. (2004) *Research Methodology: Methods and Techniques*. New Delhi: New Age International (P) Limited
- IFPRI. (2006). *Validation of Food Frequency and Dietary Diversity as Proxy Indicators of Household Food Security*. Rome: World Food Programme, Food Security Analysis Service.
- Inter-American Development Bank, (2013). Agriculture and food security. IDB publication, Washington, D.C, United States of America.
- Krishi Gobeshona Foundation-KGF (2011), 'Capacity Building of farmers through exporting comparative advantaged horticultural products,' Bangladesh Agricultural Research Council Campus, Farm Gate, Dhaka, Bangladesh, Technical Bulletin, Number 20, Available from: <<http://www.kgf.org.bd/sites/default/files/ab/20-Project%20Code%20SE-MS-285.pdf>>, [accessed 4 August 2020]
- Liamputong, P., and D. Ezzy (2005). *Qualitative Research Methods*. 2nd ed. Victoria: Oxford University Press
- Linnell, D. (2003). *Evaluation of Capacity Building: Lessons from the Field*. Washington, DC: Alliance for Nonprofit Management. Retrieved 28 April 2020 from http://www.riv.csu.edu.au/research/ilws/EASLP/library/pdf_files/The_Role_of_Capacity_Building_for_Livestock_Extension_Staff_in_Lao_PDR.pdf
- Lancet Glob Health (2015) Global Burden of Diseases Nutrition and Chronic Diseases Expert Group (NutriCoDE). Dietary quality among men and women in 187 countries in 1990 and 2010: a systematic assessment. Harvard TH Chan School of Public Health, Boston, MA2Friedman
- Mason (2009) Putting the 2007/2008 Global food crisis in longer term perspective: Trends in staple food affordability in Urban Zambia and Kenya.
- Maxwell & Franken Berger (1992) *Household Food security: concepts, indicators, measurement*. A technical review publisher. New York and Rome: UNICEF/International fund for agricultural development.
- Maxwell D.G, Barret C. B (2005). *Food Aid After Fifty Years: Recasting Its Role*. New York:
- Maxwell, D. & Caldwell, R. (2008). The coping strategies index. A tool for measurement of household Food security and impact of food aid programs in humanitarian emergencies. *African Journal of Agric and Food Security*, 10 (18).
- Mudzonga, E., & Chigwada, T. (2009). *Agriculture, Future Scenarios for Southern Africa: A Case Study of Zimbabwe's Food Security*: International Institute for Sustainable Development.
- Morduch, J. (1998). Does Microfinance Really Help the Poor: New Evidence from Flagship Programmes in Bangladesh. Development of Economics and HIID, Harvard University and Hoover Institution.
- Salih (1994). Food security in East and Southern Africa-Nordic Journals of African studies 13(1)3-27

- Sen, A. (1981). *Poverty and famines: An essay on entitlement and deprivation*. Oxford: Clarendon press.
- South Sudan -5th Sudan Population and Housing Census 2008 – IPUMS Subset, South Sudan Centre for Census, Evaluation and Statistics
- SSNDP (2011) South Sudan National Development Plan 2011 – 2013. Republic of South Sudan. Juba
- Oso, W.Y & Onen, D. (2008) *A General Guide to writing research proposal and report. Handbook for beginning Researchers*, 2nd Edn, Makerere University, Kampala
- Ogundele, OJK, Akingbade, WA & Akinlabi, HB (2012), 'Entrepreneurship training and education as strategic tools for poverty alleviation in Nigeria', *American International Journal of Contemporary Research*, vol. 2, pp. 148-156.
- Panos (1978) *Food security: An insurance Approach*, international food policy Research institute.
- Pitt, M. & Khandker. (1995). "Household and Intra household Impacts and Social Programme Sustainability by: The Education and Social Policy Department, Washington D.C. and Bangladesh Institute of Development Studies, Dhaka.
- Ramakrishna U (2003). *Prevalence of micronutrient malnutrition worldwide*. Department of International Health, Rollins School of Public Health at Emory University, Atlanta, GA 30032, USA.
- Thuita, F.M., Mwadime. K. N. & Wangombe, J.K. (2013). Influence of access to microfinance credit by women on household food consumption patterns in an urban low income setting in Nairobi, Kenya. *European International Journal of Science and Technology*.
- Tilman, B. and Marco d'Errico (2019). *Food security and Violent conflict: Introduction to special issue*. *World Development*, vol.119, 167-171
- UNFAO (2020). *Crop Prospects and Food Situation, Quarterly Global Report volume. 1, March 2020*. Technology & Engineering, food science/food safety security Published by the food and agriculture organization of the united nation, org. Rome, Italy
- URT (2000). *Agriculture in Tanzania since 1986, Follower or Leader of Growth? The international bank for reconstruction and Development*, Washington D.C.
- USAID. (2009). *USAID Responds to Global Food Crisis*. New York: Humanitarian Assistance.
- World Health Organization (2017). *Joint Child Malnutrition Estimates 2017*. Geneva. Available from: <http://www.who.int/nutgrowthdb/estimates/en/>. Accessed on (05/03/2020).
- World Food Summit (1996). *World Food Summit Plan of Action*, paragraph 1. In: *Rome Declaration on World Food Security and World Food Summit Plan of Action*. World Food Summit, 13-17. Rome, Italy. Rome.
- WFP & FSNMS (2017). *South Sudan Food security and nutrition monitoring survey/assessment report* Published by world food program South Sudan, Juba available at: Juba.VAM@WFP.org
- WFP & REACH (2017) *Renewed Efforts against Child Hunger and under nutrition: evaluation, thematic and transfer modality evaluators*, world food programme Publication. Juba South Sudan
- World Bank (2008). *World Development Report 2008 – Agriculture for Development*, the World Bank, Washington, DC.

WFP &FAO et al. (2013) ‘Annual Needs and Livelihoods Analysis 2012/2013. Juba: ANLA Technical Working Group, WFP. South Sudan

Zeller, M. & Sharma, M. (1998). “*Rural Finance and Poverty Alleviation*” Washington D.C. USA. International Food Policy Research Institute (IFPRI).

Zeller et al (2001). Access to credit and its impacts on welfare in Malawi. IFPRI Publication.

Spending on Tobacco and Heaviness of Smoking Index among Ugandans

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Abstract

The study investigated how education and employment are related to spending on tobacco and the heaviness of the smoking index among adult Ugandans in rural and urban areas. Secondary data analysis was from the Global Tobacco Adult Survey for Uganda in 2013 (n= 8503 respondents). Global Adult Tobacco Surveys are nationally representative data samples of 112 districts in Uganda. Associations and multivariate analyses were performed [$P < 0.005$]. Overall, there is no difference in spending on tobacco by gender and residence. Some 34.3% (95% CI: 17.2-56.7) of adult smokers in Uganda spend >1000/= on manufactured cigarettes. Adult smokers in Uganda are moderate/highly addicted to tobacco at 41% (CI 34.3-42.7). These tobacco addicts are unemployed and educated beyond the Ordinary level of education. Smokers who notice adverts and promotions in tobacco stores are more likely to get addicted (AOR= 2.800 95% CI: 1.117-7.016) and spend ≥ 1000 /= per day (AOR=2.278 95% CI: 1.150-4.513, $P < 0.000$). Noticing adverts and promotions on tobacco is a precursor to spending and accelerates the Heaviness of Smoking Index. The study recommends the adoption of tobacco cessation services in primary health care clinics to encourage adult smokers to quit tobacco use. The ban on tobacco advertisement promotions and sponsorship (TAPS) must continue as per the current Tobacco Control Act 2015 in Uganda.

Keywords: *Spending on tobacco, Heaviness of Smoking Index, Adult Ugandans, Uganda*

Introduction

Tobacco use is on the rise, continues to harm human health, and strains Uganda's economy (Ndugwa *et al.*, 2016). Tobacco use is the leading cause of preventable diseases posing a huge burden on treatment costs. Tobacco smoking is on the increase globally (Ravi *et al.*, 2013). Tobacco use can be influenced by an individual's education and income earned (Siahpush *et al.*, 2013). The use of tobacco is the leading cause of preventable death in the world (CEHURD, 2013).

Tobacco smoking is addictive. The Heaviness of Smoking Index is a two-item self-report measure including questions on the time to first cigarette and the number of cigarettes smoked per day, which was derived from the Fagerström Test for Nicotine Dependence. "Time to first smoke in the morning and number of cigarettes per day. It uses a six-point scale calculated from the number of cigarettes smoked per day (1-10, 11-20, 21-30, 31+) and the time to the first cigarette after waking (less than/equal to 5, 6-30, 31-60, and 61+ minutes). Nicotine dependence is then categorized into a three-category variable: low (0-1), medium (2-4), and high (5-6). HSI as a measure for assessing nicotine dependence may have significant floor effects among lighter smokers seen in non-clinical populations and the validity of the measure for assessing dependence in a general population may be questioned. Nevertheless, HSI is commonly used in both clinical and population surveys to assess dependence and

may provide a simple way for clinicians prescribing dependency-based treatments to classify their patients” (NIDA, 2016).

According to the World Health Organisation (WHO) Report of 2006, in the 20th century, an estimated 100 million people died of tobacco use (WHO, 2006); 1 billion people are expected to die in the 21st century. By 2030, the death toll from tobacco is projected to rise to 10 million persons per year. Some 70% of tobacco-related deaths shall occur in Low- and Middle-Income Countries, Uganda inclusive. Smoking cigarettes also impose huge financial burdens and is associated with a lowered standard of living (USDHHS, 2014). Tobacco kills more than 8 million people each year. More than 7 million of those deaths are the result of direct tobacco use while around 1.2 million are the result of non-smokers being exposed to second-hand smoke. Over 80% of the world’s 1.3 billion tobacco users live in low- and middle-income countries. In 2020, 22.3% of the global population used tobacco, 36.7% of all men, and 7.8% of the world’s women (WHO, 2022).

Smokers are more likely to experience financial stress compared to non-smokers (Siahpush *et al.*, 2006). The WHO estimated about six million people died of tobacco use in Africa; about 400 adult deaths are reported every day (WHO, 2006). By 2016, 16.8% of adult males and 2.9% of adult females aged 18-29 years smoked tobacco in Uganda (MOH, 2014). An estimated 11.9% and 9.0% of males and females respectively used smokeless tobacco (Ali *et al.*, 2012).

According to the Centre for Tobacco Africa report (2017), tobacco use stresses the health budget in Uganda. The annual average medical cost of a current or former smoker suffering from a tobacco-attributable disease is UGX 3,697,225 (USD 1,422), this is 2.28 times higher than the annual medical cost of a never smoker/tobacco user at UGX 1,619,309 [USD 622.8] (CTCA, 2017). Though this could be a major consequence of tobacco use at the national level, at the individual level, the smoker is likely to go without a meal for tobacco (Joy *et al.*, 2011).

Previous studies conducted by the Ministry of Health Uganda, on tobacco use surveillance among adults in Uganda were done through Uganda Demographic Health Surveys and Global Adult Tobacco Surveys (GATS) [12], whereas the GATS data provides for prevalence rates of tobacco use. Factors such as tobacco exposure in homes, indoor smoking policies, special gifts and discounts on other products after buying tobacco, noticing adverts and promotions were assessed with spending on tobacco and the heaviness of the smoking index among adult smokers in Uganda.

Methods

Data source

In Uganda, Global Adult Tobacco Surveys (GATS) were conducted in 2013 as a household survey of persons 15 years of age and older by the Uganda Bureau of Statistics (UBOS), under the coordination of the Ministry of Health. A multi-stage, geographically clustered sample design was used to produce nationally representative data (MoH, 2013). A total of 10,382 households were surveyed and 8,508 respondents completed individual interviews with an overall response rate of 86.6%. From the GATS data set, secondary data analysis was performed as shown in Tables 1, 2, and 3.

Data Collection

In the initial GATS survey, participants were first asked how many of their household members were aged 15+years and older, and who used tobacco. Then data for tobacco consumption for each eligible

household member were collected including the respondent. This has been used as an inclusion and exclusion criteria for this study.

Education and income spent on tobacco: Education was categorized as, “Less than primary level completed”, Less than Ordinary level completed” and “Ordinary level and higher completed”. Education and how it influenced spending on tobacco was assessed with the heaviness of the smoking index (HSI).

Employment and amount spent on tobacco: To measure how employment status influenced spending on tobacco use daily, the question asked was “How much money in Ugandan shillings did you pay for cigarettes purchased? The response options were “UGX 100 to 999” and “UGX1000+”.

The heaviness of the smoking index, and the amount spent: HSI was assessed with two questions “1. On the days that you smoke, how soon after you wake up do you have your first cigarette? The options were: A. ‘Within 5 minutes (3 points)’ B. ‘6-30 minutes (2 points)’ C. ‘31 – 60 minutes (1 point)’ D. ‘After 60 minutes (0 points)’ and 2. How many cigarettes do you typically smoke per day? A. ‘10 or fewer (0 points)’ B. ‘11-20 (1point)’ C. ‘21 -30 (2 points)’ D. 31 or more (3 points), the two questions were computed using and scored as, “low addiction” and “moderate/high addiction”.

Background characteristics/ Social demographic variables

Social demographic variables included gender (assessed with the question, “what is your gender?” and the residence of the respondents which were categorized as either “rural” or “urban”. The age of the respondents was not considered in demographic characteristics, since most data on age were missing from the data set. However, the GAT survey primarily considered respondents aged 15+ years and older. Gender and residence have been used as a measure of prevalence and spending on tobacco use of males versus females. Overall, more females participated in the study compared to males (54.7%, versus 45.3%) n= 8508.

Statistical analyses of Secondary Data

Using Statistical Package for Social Scientists (SPSS), two statistical analyses were performed. Cross-tabulation to measure the association between demographic data against spending on tobacco and the heaviness of the smoking index (HSI). Two multivariable-adjusted Logistic Regression Analyses were performed to examine factors associated with the amount spent daily on tobacco and the heaviness of the smoking index (HSI). Independent variables assessed were level of education level completed, employment status over the last 12 months, gender, and residence of adult smokers.

Results

The study found no significant difference in spending by gender between males and females, employment and amount spent, as well as the residence of adult smokers in Uganda (Table 1).

Table 1: Association between Independent variables against amount spent daily on tobacco, and Heaviness of Smoking Index

	Amount spent daily on tobacco use (UGX)				The Heaviness of the Smoking Index (HSI)			
	n	%	95%CI	P	n	%	95%CI	P
Gender								
Male	72	21.0	(15.4-27.8)	0.888	162	43.5	(37.1-50.0)	0.158
Female	4	19.5	(6.5-45.7)		25	32.6	(21.0-46.8)	
Residence								
Urban	35	20.6	(13.4-30.3)	0.938	75	39.3	(30.8-48.4)	0.565
Rural	41	21.0	(14.3-29.7)		112	46.2	(36.5-50.0)	
Education level completed								
Less than primary level	35	15.6	(9.6-24.2)	0.037	131	42.5	(35.7-49.5)	0.608
Less than O level	25	30.1	(19.3-43.6)		40	42.9	(30.4-56.4)	
O level and higher	16	34.3	(17.2-56.7)		15	31.1	(15.7-52.3)	
Employment of the respondents								
Employed	68	21.0	(15.3-28.0)	0.805	152	40.6	(34.3-42.7)	0.008
Unemployed	6	23.6	(8.9-49.3)		25	67.2	(47.7-82.2)	
Is smoking allowed inside your home?								
Allowed	31	18.3	(10.5-29.9)	0.002	98	46.0	(38.2-53.9)	0.441
Not allowed	16	12.0	(6.5 - 21.0)		52	38.2	(28.6-48.8)	
No rules	28	61.4	(25.8-53.3)		36	38.4	(26.1-52.3)	
Indoor smoking policy at the workplace								
Allowed	1	3.1	(0.4-20.7)	0.034	10	85.5	(60.1-95.8)	0.007
Not allowed	19	43.9	(24.7-65.1)		17	37.0	(19.6-58.6)	
No policy	8	43.3	(31.8-78.6)		8	34.6	(15.9-59.7)	
Gifts/special discounts on buying cigarettes								
Yes	3	45.0	(12.9-81.9)	0.171	7	88.9	(62.6-97.5)	0.000
No	72	20.2	(14.8-27.0)		179	40.8	(35.0-46.9)	
Advertisements/promotions for cigarettes								
Yes	14	25.1	(11.9-45.4)	0.571	11	20.1	(9.8-37.0)	0.005
No	62	20.2	(14.6-27.2)		172	44.6	(38.7-50.8)	

Expenditure of >UGX 1000 on cigarette purchases is more likely among those smokers with $\geq$ O levels of education (69.9% 95% CI 56.4-80.70. Such smokers are associated with no-smoking rules at home (61.6 95% CI: 47.7-73.9), they are unemployed (67.2, 95% CI: 47.7-82.2), and their workplaces have no indoor smoking policies (34.6 95% CI 15.9-59.7) as shown in Table 1. Furthermore, adult smokers spend $\geq$ UGX.1000 (AOR=2.278 95% CI: 1.150-4.513) were associated with receiving gifts and discounts on other products after their last purchase of cigarettes Table 3.

Heavy addiction to nicotine was associated with no-smoking rules at home (AOR=4.269 95% CI: 1.572-11.595) as shown in Table 2. Adult smokers in Uganda who were highly addicted spent $\geq$ UGX.1000 (AOR= 2.278 95% CI: 1.150-4.513). The heaviness of the smoking index was also associated with noticing adverts and promotions within tobacco stores in the last 30 days (AOR= 2.800 95% CI: 1.117-7.016) Table 3.

Multivariable associations with the amount spent daily on tobacco and addiction (HSI) among Ugandan adults.

Factors associated with spending and HSI were noticing advertisements/promotions for cigarettes in the last 30 days, having or no indoor smoking policy at the workplaces, receiving gifts/special discounts on other products after buying cigarettes, and whether smoking was allowed in respondents' homes. Respondents who received gifts and discounts on other products after purchasing cigarettes were highly addicted to cigarette smoking and spent more on tobacco. On logistic regression model 1, heavy addiction to tobacco (AOR= 2.512 95% CI: 1.212-5.209) as shown in Table 2, was significantly associated with spending >UGX.1000 per day (AOR=2.278 95% CI: 1.150-4.513), $P < 0.030$), as shown in Table 3. Having no-smoking rules in a home was also significantly associated with spending >UGX.1000 (AOR=4.269, 95% CI: 1.572-11.595) as shown in Table 2.

Table 2: Multivariable Logistic Regression Model 1 of factors associated with income spent daily on tobacco

	Spending >1000 daily on tobacco (Uganda shillings) AOR(95%CI)
Smoking inside a home	
Allowed 1(Ref)	1.00
Not allowed	0.931 (0.317-2.73)*
No rules	4.269 (1.572-11.595)*
Addiction to tobacco use	
Low 1(Ref)	1.00
Moderate/High Addiction	2.512 (1.212-5.209)

* $P < 0.05$

On logistic regression model 2, spending $\geq$ UGX.1000 per day AOR 2.278 [1.150-4.513] was highly associated with moderate/high addiction to nicotine in Uganda (Table 3). Noticing advertisements and promotions in stores where cigarettes were sold, this factor was statistically significant to moderate/heavy addiction (AOR=2.800 95% CI: 1.117-7.016) Table 3.

Table 3: Multivariable Logistic Regression Model 2 of factors associated with HSI (n=319)

<i>Moderate/High Addiction</i>	
<i>AOR (95%CI)</i>	
Noticing adverts and promotions on cigarettes in stores	
No 1(Ref)	1.00
Yes	2.800 (1.117-7.016)
Amount spent daily on tobacco	
100-999 1(Ref)	1.00
>1000	2.278(1.150-4.513)

*In the last 30 days, have you noticed any *advertisements or signs promoting* cigarettes in the following places? In stores where cigarettes are sold? *P < .05*

Discussion

Spending on tobacco use is related to education and employment status [2]. Tobacco use is on the rise in Uganda [1]. Education influences expenditure on tobacco in Uganda among adults aged 15 years and older. Using the 2013 Global Adult Tobacco Surveys which measures tobacco use and prevalence among adults, the study found no statistically significant difference between gender and residence of the respondents who participated in the survey. Most adult smokers are unemployed and spend more than one thousand shillings per day on buying tobacco (manufactured cigarettes). There are no-smoking rules at home and no indoor smoking policies at the workplace. Adult smokers, who receive gifts and discounts after buying cigarettes on other products, and/or noticed advertisements in tobacco stores where cigarettes are sold, were highly addicted to tobacco use. There is an urgent need for the government to provide tobacco cessation services in primary health care (PHC) clinics in Uganda.

The least employed are likely to be impoverished by smoking in Uganda. An adult smoker who is unemployed, and highly getting addicted to tobacco is a threat to the economy of Uganda. It is estimated that the annual cost spent on treatment of a smoker in Uganda compared to a non-smoker was UGX 3,697,225 (USD 1,422) versus UGX 1,619,309 [USD 623] (CTCA, 2017), this is three times higher in comparison. With the increasing number of smokers in Uganda getting addicted, if no interventions are taken, the Government of Uganda is likely to spend even more on treating NCDs related to tobacco (Ndugwa *et al.*, 2016). When tobacco cessation services are incorporated into Primary Health Care (PHC), the amount spent daily on tobacco can be used to provide health insurance in Uganda, to reduce the cost of treatment currently borne by the Government.

Those with $\geq$ O levels of education spend $\geq$ UGX 1000 per day on tobacco. Since not low levels of education are associated with spending highly on tobacco, these findings do not correlate with a study conducted in India, where it was observed that lower smoking rates were associated with low education (Bidyut *et al.*, 2017). However, the other work-related factors such as having no indoor smoking places are associated with expenditure on tobacco. Receiving gifts and special discounts on other products after buying cigarettes was highly associated with spending on tobacco in Uganda. Using the theory of competing advantage (Pampel and Rogers, 2004). It can be noted that though some smokers spend <UGX.1000, their smoking lifestyles and choices should also be regarded as they might accumulate

additively. The more they buy cigarette sticks, the higher the chances of addiction.

These secondary data analyses were performed on an available public use data set using complex samples, the data was validated, and the study could be novel in Uganda, with grey scientific insights, especially on how smoking is associated with addiction. These are some of the study strengths. However, the data could have been misreported in the initial survey. There were a few limitations to the study, but most importantly to note is the fact most of the data on the age of the respondents interviewed during the initial survey was missing in the GATS data set. The study could therefore not measure the association between age and amount spent on tobacco against the heaviness of the smoking index. The study has also been conducted based on self-reported data. Though the study has been conducted three years after the Tobacco Control Act was enacted in 2015, the findings still support the major aspects of the law, especially the ban on Tobacco Advertisements, Promotion, and Sponsorship which could scale down addiction levels if well enforced.

Conclusion

Tobacco addiction is on the rise in Uganda after smokers notice advertisements and promotions about cigarettes. The levels of addiction are even heavier when smokers receive gifts and discounts on other products after buying cigarettes. The relationship between education levels completed against spending on tobacco (manufactured cigarettes) is demonstrated, and these findings add to the existing stock of knowledge and evidence that adult smokers in Uganda who completed O level and higher spend more on tobacco. The study did not find a significant difference between gender and residence versus tobacco use. However, further insight is provided into the association between amounts spent daily on tobacco about addiction (HSI). The need to incorporate tobacco cessation services in Primary Health Care clinics and conduct more primary research studies to assess the implementation and effect of Uganda's Tobacco Control Act of 2015 is recommended.

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Conflict of Interest

The author has indicated there is no potential conflict of interest to disclose.

References

- Ali A.Y.M, Safwat T, Onyemelukwe G, Otaibi M.A.A., Amir A.A, Nawas Y.N., Aouina H, Afif M.H, Bolliger C.T. (2012). Smoking Prevention and Cessation in Africa and Middle East Region: A Consensus Draft Guideline for Healthcare Providers – Executive Summary. *Respiration*, 83:423-432.
- Bidyut K.S, Lion S, Monika A, Jasjit S.A, Srinath K, and Robert W. (2017). The Social Gradient of Tobacco Use Does Not Generalize to Low-Income Urban Communities in India: Findings from a Census Survey. *Nicotine & Tobacco Research*, 1516–1520.
- Center for Tobacco Control in Africa. (2017). *The health cost of tobacco use in Uganda*. Kampala Uganda: Makerere University Press.
- Centre for Human Rights and Development - CEHURD (2013). *The burden of tobacco use in Uganda*. Kampala, Uganda: CEHURD.
- Joy de B, Chris L, Ayda Y. (2011). Tobacco and Poverty. *Tobacco Control*, 10:210–211.
- Ministry of Health. (2013). *Global Adult Tobacco Survey Fact Sheet*. Kampala: Ministry of Health.
- Ministry of Health - MoH. (2014). *Uganda Non-Communicable Disease Risk Factor Baseline Survey Report*. Kampala: Ministry of Health Uganda.
- Ndugwa S.K; Sheila N, Mutungi G, Wesonga R, Bahendeka S.K and Guwatudde D. (2016). Tobacco use and associated factors among adults in Uganda: Findings from a nationwide survey. *Tobacco Induced Diseases*. DOI: <https://doi.org/10.1186/s12971-016-0093-8>, 14:27.
- National Institute on Drug Abuse - NIDA. (2016, February 25). *The heaviness of the Smoking Index*. Retrieved from USA National Institute on Drug Abuse: <https://datashare.nida.nih.gov/instrument/heaviness-of-smoking-index>
- Pampel F.C and Rogers G.R. . (2004). Socioeconomic Status, Smoking, and Health: A Test of Competing Theories of Cumulative Advantage. *Journal of Health and Social Behaviour*. , doi.org/10.1177/002214650404500305.
- Ravi B.P.K, Shankar R.D, and Rao A.R. Kuppaswamy's. (2013). Socio-Economic Status Scale – A Revision of Economic Parameter. *International Journal of Research & Development of Health*., Vol. 1(1):2-4.
- Siahpush M, Borland R, Scollo M. (2013). Smoking and financial stress. *Tobacco Control*, 12:60–69.

Siahpush, M; McNeill, A; Hammond, D and Fong G.T. (2006). Socioeconomic and country variations in knowledge of health risks of tobacco smoking and toxic constituents of smoke: results from the 2002 International Tobacco Control (ITC) Four Country Survey. *Tobacco Control*, DOI: 10.1136/tc.2005.013276.

United States Department of Health and Human Services - USDHHS (2014). *The health consequences of smoking—50 years of progress: a report of the Surgeon General*. 17 Atlanta, GA: US Department of Health and Human Services, Center for Disease Control and Prevention, National Center for Chronic Disease Prevention. Atlanta USA: United States Department of Human Health Services.

World Health Organisation - WHO. (2006). *Survey on Tobacco and Health Inequality*. Geneva Switzerland: World Health Organisation.

World Health Organisation WHO. (2022, May 24). *World Health Organisation International Newsroom*. Retrieved from Tobacco: Key facts: <https://www.who.int/news-room/fact-sheets/detail/tobacco#:~:text=Tobacco%20kills%20more%20than%208,%2D%20and%20middle%2Dincome%20countries>.

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- iii. *Standard Methods for the Examination of Water and Wastewater* (1998). 20th edn, American Public Health Association/American Water Works Association/Water Environment Federation, Washington DC, USA.
- iv. Sobsey M. D. & Pfaender F. K. (2002). *Evaluation of the H₂S method for Detection of Fecal Contamination of Drinking Water*, Report WHO/SDE/WSH/02.08, Water Sanitation and Health Programme, WHO, Geneva, Switzerland.
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