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Does responsibility accounting in public universities matter?

Philip Owino[1]*, John C. Munene[2] and Joseph M. Ntayi[3]

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*Corresponding author: Philip Owino, Faculty of Education, Department of Educational Planning and Management, Kyambogo University, Kampala, Uganda
E-mail: phowino@yahoo.com

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Additional information is available at the end of the article

Abstract: Responsibility accounting is an administrative accounting method that measures the results of each responsibility centre. The concept of responsibility accounting is vested in costs and revenues performance. Managers are evaluated based on what is under their control. Hence, the purpose of this paper is to examine if responsibility accounting matters in Ugandan public universities. The paper adopted a cross-sectional survey that included both quantitative and qualitative approaches to find out if responsibility accounting matters. The qualitative data supplement quantitative data. The findings indicate that there is a system of responsibility accounting. Costs and revenues are managed at respective departments. Heads of department have authority to manage their budget-allocated estimates. They are responsible for their decisions against their budgets or votes. Costs and/or revenues are accumulated and reported upward from departments and faculties to university authorities. This study signifies that responsibility accounting follows hierarchical patterns in public universities.

Subjects: Technology; Social Sciences; Arts & Humanities

Keywords: responsibility accounting; hierarchical structure; academic departments; public universities; Uganda

ABOUT THE AUTHORS

Philip Owino, MBA, is a lecturer at the Department of Educational Planning and Management Faculty of Education, Kyambogo University, Uganda. He is a PhD candidate at Makerere University. His teaching and research interests are in Management Accounting, Hierarchical Structure and Responsibility Accounting.

John C. Munene, PhD, is a director of PhD programme, Faculty of Graduate Research Makerere University Business School. In addition to his academic role, Munene provides consultancy services in Organisational Development, Human Resources and Institutional Development.

Joseph M. Ntayi, PhD, is a professor of Procurement, Logistic and Transport Management at Makerere University Business School Uganda. In addition to his academic role, Ntayi provides consultancy services in Microfinance, Savings and Credit Cooperatives, Insurance, Project Management and Organisational Restructuring.

PUBLIC INTEREST STATEMENT

The implementation of responsibility accounting is quite recent and has come about as a response to the managers' need for better way to control operations. Responsibility accounting provides financial information useful for evaluating managers or heads of department's performance on what is under their control. Each layer of management is held responsible for all their actions. The primary objective of responsibility accounting is to motivate lower level managers and workers who tend to be motivated by a system of measurement that emphasises their individual performance. However, controlling costs and/or revenues in practise is a fundamental task. It is not always easy to decide whether a particular item of costs and/or revenues is controllable or not under hierarchical arrangements. Persons with position of responsibility need to be liable for activities under their control. The present paper examines the essence of responsibility accounting in public universities.

1. Introduction

The purpose of this paper examines whether responsibility accounting matters in Ugandan public universities. The concept of responsibility accounting is rooted in the idea that individuals or groups should be charged for (or given credit for) only those things that they can control or significantly influence (Ferrara, 1986). For this reason, several authors have discussed whether making managers responsible only for what they can control is in the best interest of the company (Antle & Demski, 1988; Choudhury, 1986; Simon, 2005). Broadly speaking, responsibility accounting denotes a system through which managers are made accountable for a specific set of activities or objectives and through which their actual performance can be measured and evaluated. However, practitioners have attempted to implement responsibility accounting through budgets. Budgets act as a benchmark against which the performances of individuals responsible are measured. Therefore, budgets seem commonly regarded as the cornerstone of responsibility accounting (Garrison, Noreen, & Brewer, 2009).

So far, much of the scholarly debate on responsibility accounting revolves around the controllability principle. The controllability principle emphasises that managers should be made responsible only for those activities or outcomes which they can control or influence. However, the application of the controllability principle still remains problematic in practise since it is not clear which managers should be made responsible for (Larmande & Ponssard, 2007). Bevan and Messner (2008) raise a question "what should managers be made responsible for?" while Horngreen, Sundem, and Stratton (1999) pose "when do organizations actually use responsibility accounting?"

This paper contributes to scholarly debate on what managers should be made responsible for. We therefore argue that planning, control, feedback and decision-making are moderate predictors of responsibility accounting. Scholars who have ventured in responsibility accounting research are few (Cools & Slagmulder, 2009). In addition, the issue of controllability principle in responsibility accounting continues to be the subject of much scholarly debate in accounting and control literature (Ocansey & Enahoro, 2012). The dimensions developed to conceptualise responsibility accounting are based on responsibility centres. For instance, cost centre for cost performance, revenues centre for revenue performance or profit centre for profit performance (Drury, 2008). The conceptualisation of cost or revenue performance is insufficient and seems not adequately captured in the accounting and control literature; yet, the concept of responsibility accounting is central to any effective profit planning and control system. This requires further investigations.

In Uganda, public universities' control hierarchy exists at department, faculty, institute, school or college, at the finance management committee level, finance committee of council and council levels (Ministry of Finance Planning & Development [MFPD], 2009). Heads of academic department and faculty deans are vote controllers on behalf of the accounting officer and as such taking personal responsibility for supervising the operations and transactions in their departments/faculties. Furthermore, they are personally responsible for ensuring that all financial commitments of the departments or faculties are within the commitment limits of cash received and available. This should be in line with approved budgets linked to work plans and procurement plans (Kyambogo University, 2013) as performance measures for performance evaluation. According to Garrison et al. (2009), decentralised organisations need responsibility accounting systems that link lower level managers' decision-making authority with accountability for the outcome of those decisions.

2. Literature review

Responsibility accounting has been an accepted part of traditional accounting control device for many years. The aims are to motivate lower level managers and workers who tend to be motivated by a system of measurements that emphasises their individual performance. Responsibility accounting model includes aspects of planning, control, feedback and decision-making. Based on planning, control, feedback and decision-making, responsibility accounting provides useful financial information in assessing efficiency and effectiveness of managers or department heads' financial performance directly under their control (Horngreen, Datar, & Foster, 2006). To date, responsibility

accounting is an administrative accounting method that measures the results of each administrative position (Meda, 2003). Responsibility accounting follows administrative systems and links the reports of the individuals' performance with the principals of the different administrative units/responsibility positions. This makes it possible to know the extent of the achievement of these responsibility positions against their objectives (Rajbi, 2004). In effect, responsibility accounting personalises accounting information by holding individuals responsible for revenues and/or costs. It involves handling of financial records with an emphasis on who is responsible for each cost and/or revenue item.

So far, responsibility accounting has been identified as a tool of administrative accounting method that controls performance and links expenditures and/or revenues to organisation structure. Planned budgets are a cornerstone of responsibility accounting. Performance is compared with the plan of every position to detect any deviation (Tahan & Mohammad, 1995). It is an accounting method that gathers and prepares periodic reports about the information regarding the costs and/or the revenues of every position of responsibility in an organisation to enable the higher administration to plan and control the performance of these positions of responsibility (Abo & Mohamad, 2010). We refer to responsibility accounting as a method of accounting that records costs and/or revenues according to position of responsibility. Any deviation from costs and revenues estimates is identified with the person responsible (Drury, 1992). As a way of controlling operations in an organisation, someone must be held responsible for each cost or else no one will be responsible and the cost will inevitably grow out of control (Yang & Modell, 2012). Zimmerman (2011) argues that responsibility accounting system is part of the performance evaluation system used to measure the operating results of a responsibility centre. Therefore, responsibility accounting dictates that the performance measurement system measures the performance that results from the decision rights assigned to the responsibility centre. The decision rights are planning, control, providing feedback and decision-making.

Planning and control are aspects of responsibility accounting that are used as if they have same meaning. This is not true. Planning and control are complementary and not synonymous. Planning embroils the development of objects, putting in place various budgets to accomplish those planning (Nawaiseh, Zeidan, Falahat, & Qtish, 2014). Lucey (2009) argues that planning establishes the objectives, formulates, evaluates and selects policies, strategies, tactics and actions required to achieve these objectives. Preparing planning budgets of responsibility positions is an important aspect of responsibility accounting. Budgets are prepared and used for control and performance evaluation of each responsibility centre (Odum, 2006). Control as an aspect of responsibility accounting emerges due to variety of managerial levels in an organisation. It is difficult for one person to perform all activities and control at the same time. However, control through performance reports (feedback) is considered the most important method of modern administration since it pursues actual performance from the previously planned form, while objective control attempts to guide the achievement of the general goals of the units. We can therefore raise the following questions:

Is planning an aspect of responsibility accounting (RQ1)?

Is control an aspect of responsibility accounting (RQ2)?

In our context, responsibility accounting measures the plan, budget, actions and actual results of each responsibility centre. According to Kermit and Barbara (1996), successful implementation of responsibility accounting in an organisation requires: first, establishing responsibility centres; second, establishing performance measures; third, evaluating performance; and fourth, defining reward systems. Human factors and reporting principles are critical in evaluating performance. Behavioural principles are: first, managers of responsibility centres should have direct input in the process of establishing budget goals; second, the evaluation of performance should be based entirely on matters that are controllable by the manager being evaluated; third, top management should support the evaluation process; fourth, the evaluation process must allow managers to respond to the evaluation; and finally, the evaluation should identify both good and poor performance through regular reports. These performance reports allow comparisons between actual performance

and budget expectations. The comparisons enable management to evaluate an individual's performance with respect to the responsibility centre's objective and companywide objectives and make the necessary decisions. We can therefore formulate the following questions:

How is feedback connected to responsibility accounting (RQ3)?

How is decision making an aspect of responsibility accounting (RQ4)?

Overall, responsibility accounting represents a system which specifies a set of activities or objectives through which managers are held responsible for actual performance against the set objectives (Bevan & Messner, 2008). Responsibility accounting is designed to report costs, revenues and/or profit by individual levels of responsibility. At each level of responsibility, a manager is charged only with the costs and/or revenue that he or she is responsible for and over which he or she has control (Fowzia, 2011). Managers are responsible for functions and activities for specific areas under their control. Therefore, responsibility accounting is a management control system designed to make various responsibility managers accountable based on the principles of delegation and location of their responsibility. The authority and responsibility is based on responsibility centres (Fowzia, 2011).

In Uganda, public universities' control hierarchy is organised at department, faculty, institute, school, college, finance management committee and university council levels (MFPD, 2009). Heads of academic department and faculty deans are vote controllers on behalf of the accounting officer and as such take personal responsibility for supervising the operations and transactions in their departments/faculties. They are also personally responsible for ensuring that all financial commitments of the departments or faculties are within the commitment limits of cash received and available in line with approved budgets linked to work plans and procurement plans (Kyambogo University, 2013) as performance measures for performance evaluation. Garrison et al. (2009) say decentralised organisations need responsibility accounting systems that link lower level managers' decision-making authority with accountability for the outcome of those decisions. Revenues and/or costs are assigned to the persons having pertinent responsibility. These raise an issue:

Does responsibility accounting matter in public universities (RQ5)?

The finding of this hypothesis is on managerial performance which is restricted to actions taken by a manager. Only those items which are controlled by a manager are considered at the operational management level. Cost and revenues centres subsist at the operational management level. A manager may be held responsible for and evaluated against costs performance and/or revenues performance in his or her area of responsibility. Responsibility accounting provides a means of costs and/or revenues control. Control is a personalised affair. Responsibility accounting helps in improving the overall performance in an organisation. Therefore, successful implementation of responsibility accounting involves: first, establishing responsibility centres; second, establishing performance measures; third, evaluating performance; and fourth, defining the reward system.

3. Methodology

3.1. Research design, population and sample

This study used a cross-sectional survey research design using both quantitative and qualitative approaches. Multiple sources of evidence were considered and used in order to facilitate the development of a "converging line of inquiry", by which the process of triangulation is ensured (Yin, 2003). This triangulation provided the opportunity for achieving construct validity. This was because the multiple sources of evidence essentially provided multiple measures of the same phenomena (Yin, 2003) on the status of responsibility accounting at academic departments. The study population consisted

of 256 heads of academic departments from five public universities. A sample size of 202 heads of academic departments was drawn (Krejcie & Morgan, 1970). The public universities were: Makerere, Kyambogo, Gulu, Mbarara and Busitema. The study unit of analysis was academic departments and unit of inquiry was heads of academic departments in the public universities. Heads of academic departments constituted the main respondents who were chosen because they are the categories of officials that occupy major administrative areas where financial performance measures are conducted within a university hierarchy based on budget estimates. Deans of faculties were purposively sampled as key informants to supplement quantitative data for triangulation purpose. The heads of academic departments were selected by a systematic sampling procedure in order to avoid bias.

3.2. Measurement and instruments

Responsibility accounting variables were measured using 20 items adapted from an instrument developed by Simon, Kozmetsky, Guetzkow, and Tyndall (1954). The respondents were asked to indicate their opinions on cost or revenue items over which they exercise control. The authority they have is on planning, control, feedback and decision-making of cost or revenue items in Ugandan public universities. Self-administered close-ended questionnaires were used for quantitative data collection while structured interviews for qualitative data collection. The question items were anchored on a six-point Likert scale to measure personal attitude, and ranged from 6 (extremely true) to 1 (extremely untrue). This scale was meant to reduce the likelihood of making a choice without considering the items of measurement. Chomeya (2010) argues that the scale forces respondents to consider for a while or a level before committing themselves to either the positive or negative end of the scale.

3.3. Validation of research instruments

The questionnaire was validated through interview by a panel of practitioners. This was meant to ensure that the questionnaire items were clear. The content validity index (CVI) for responsibility accounting was .82. This result indicates that the content of the instrument represented the domain of the constructs being studied. Saunders, Lewis, and Thornhill (2006) say that a CVI of .70 or more is considered good. Further test covered the reliability of the instrument and Cronbach's α values for responsibility accounting for pre-test and final study were .91 and .95, respectively.

3.4. Data management and analysis

A principal component analysis was performed to identify patterns in data and to reduce data to a manageable level (Field, 2009). The analysis produced four components of responsibility accounting, accounting for 67.62%.

Common method biases were addressed in this study by collecting data from different heads of academic departments in different faculties from Ugandan public universities and sourcing most of the data relating to dependent variable (responsibility accounting) from documentary evidence. This approach is supported by Podsakoff, MacKenzie, Lee, and Podsakoff (2003), who contend that one way of controlling common methods variance is to collect the measures of criterion variables from different sources. Efforts were made to reduce the potential effects of response pattern biases by incorporating negatively worded or reverse-coded items on the questionnaires (Hinkin, 1995). Hinkin further explains that reverse-coded items are like cognitive "speed bumps" that require respondents to engage in a more controlled, as opposed to automatically, cognitive process. Also common method biases were controlled using questionnaire items' Likert scales of six instead of five and different scale anchors or values. This was to avoid "not decided" and meant to encourage careful thought from the respondents.

Data for this study were checked for data entry errors, out-of-range values, missing values, presence of outliers and assumptions of parametric data. Missing completely at random, a (MCAR) test and multiple imputations were conducted to establish the presence and the extent of missing values. Both tests revealed that there were no missing values. The rating scale was a six-point Likert scale. All values had discrete values of 1, 2, 3, 4, 5 or 6. This scale is practical and interesting, does

not have a mid-point and in that sense forces a choice (Worthen, White, Fan and Sudweeks cited in Kagaari, 2010). The six-point Likert scale was adopted in anticipation of respondents' likelihood to score the mid-point. The data screening exercise aimed at establishing the distribution of data to assess whether the assumptions of parametric data were tenable. Specific assumptions tested were: normality of the distribution of data; homogeneity of variance; linearity of the data independence of errors; and multicollinearity. Collinearity diagnostic test was conducted and results revealed that tolerance factors were below .2 signifying that the items were distinct for the constructs under measurement (Field, 2009).

4. Results

Data were collected from 202 heads of academic departments in the following five public universities: 74 from Makerere, 41 Kyambogo, 30 Gulu, 26 Mbarara and 31 Busitema. The results reveal 33.7% of the respondents were from Makerere; 22.5% Kyambogo; 16.9% Gulu; 14.6% Mbarara; and 12.4% Busitema. Since all the public universities were well represented, it gives a wide coverage of responses. The experience as heads of academic departments in years: less than 2 years were 57 representing 28.2%, 2–5 years 95 representing 47%, 6–10 years 47 representing 24.3% and above 10 years 1 representing 5%. The majority of the respondents [145 (71.8%)] were male while the rest 57 (28.2%) were females.

4.1. Correlation analysis

Table 1 summarises the means, standard deviations and zero-order correlations. Table 1 shows that all the aspects of responsibility accounting (planning, control, decision-making and feedback) were significantly and positively correlated with responsibility accounting.

Table 1 reveals that planning significantly correlates with responsibility accounting ($r = .417$, $p \leq .01$). Control is a predictor of responsibility accounting ($r = .348$, $p \leq .01$). Decision-making correlates with responsibility accounting ($r = .522$, $p \leq .01$). Feedback and responsibility accounting are positively related ($r = .246$, $p \leq .01$). Additionally, Table 1 reveals that respondents agreed with existence of planning (M = 4.64, SD = .953), control (M = 3.64, SD = .941), decision-making (M = 4.97, SD = .911), feedback (M = 3.70, SD = 1.108) and responsibility accounting (M = 3.98, SD = .980).

Table 1. Zero-order correlation

Predictor variable	M	SD	1	2	3	4	5
Planning	4.64	.953	1				
Control	3.64	.941	.739*	1			
Feedback	3.70	1.108	.405*	.449*	1		
Decision-making	4.97	.911	.284*	.310*	.227*	1	
Responsibility accounting	3.98	.980	.417*	.348*	.246*	.522*	1

*Significant level at $p \leq .01$.

Table 2. Multiple regression

Model	Unstd. Est	S. E	Std. Est	*t*-value	Sign
Constant	−.002	.067		−.026	.979
Planning	.283	.044	.417	6.488	.000
Control	.272	.052	.348	5.250	.000
Feedback	.501	.075	246	6.648	.000
Decision-making	.546	.062	.522	8.644	.000

Notes: $R = .522$ $R^2 = .272$ Adjusted $R^2 = .269$.

4.2. Regression analysis

Table 2 shows the predictive potential of the components that constitute responsibility accounting. In this study, the relationship between planning, controlling, decision-making, feedback and responsibility accounting is significant.

Consistent with RQ1, the results indicate a significant positive relationship between planning and responsibility accounting ($\beta = .417$, $p \leq .01$). This means that positive changes in planning are associated with positive changes in responsibility accounting. Costs and/or revenues budgets are carried out at the academic departments.

Results from RQ2 show that control is a positive and significant predictor of responsibility accounting ($\beta = .348$, $p \leq .01$). This means that positive changes in controls are associated with positive changes in responsibility accounting. This implies that control of costs and/or revenue is exercised at academic departments in Ugandan public universities.

Consistent with RQ3, results reveal that the relationship between feedback and responsibility accounting is positive and significant ($\beta = .246$, $p \leq .01$). This means that positive changes in feedback are associated with positive changes in responsibility accounting. There is feedback or reports on how well costs and/or revenues are managed at academic departments.

Results from RQ4 indicate that decision-making and responsibility are positive and significantly related ($\beta = .522$, $p \leq .01$). This means that positive changes in decision-making are associated with positive changes in responsibility accounting. Decisions for managing costs and revenues are exercised in academic departments.

5. Discussion and conclusion

Results from RQ1 indicate that planning is significant and positively related to responsibility accounting ($\beta = .417$, $t = 6.488$, $p \leq .01$). This suggests that planning is an aspect of responsibility accounting. Preparing planning budgets is an important aspect of responsibility accounting. Costs and revenues estimates are prepared at departments in public universities. To this effect, respondents expressed that: "Heads of academic department develop and prepare work plans, procurement plan and budgets for their departments (Faculty Deans of public Universities)". This finding is supported by Garrison et al.'s (2009) assertion that budgets are commonly regarded as the cornerstone of responsibility accounting. The finding is also in line with Odum's (2006) conclusion that effective implementation of responsibility accounting requires comparison between actual performance and planned results of each responsibility centre.

Results from RQ2 reveal that control is a significant predictor of responsibility accounting ($\beta = .348$, $t = 5.250$, $p \leq .01$). This implies that heads of academic departments have authority and responsibility to control or influence costs and/or revenues performance in their departments. The primary objective of responsibility accounting is costs and/or revenues control via budgetary control for each position of responsibility at the beginning of the period and comparing with the budgeted ones for the purposes of evaluating position of responsibility. Departmental budget estimates are compared with budget reports for comparative purpose in public universities.

However, qualitative results reveal that: "Heads of academic department verify and sign teaching, invigilation, examination marking and research supervision claim forms due for payments against budget estimates; without their signatures no payment may be effected (Dean of a Faculty), and heads of department recommend a certain number of students to be admitted in their departments and this determine revenues base, initiate and develop market-driven programmes that target revenues for the departments and university as whole (Faculty accountants)".

These narratives signify that heads of academic departments occupy administrative areas or position of responsibility where financial performance measures are conducted in public universities. Costs and/or revenues are financial performance measures used at the departments. Budget estimates are used for control and performance evaluation at respective academic departments in public universities in Uganda.

These results are supported by Lin and Yu's (2002) finding that responsibility accounting has an influence in improving the control over costs in the Chinese market, in reducing the cost of production, motivating employees and helping the company in achieving its objectives. Empirical studies show that responsibility accounting is a controlling device by which costs and revenues are traced to individual managers under their control (Fowzia, 2011).

Results from RQ3 show that feedback is significant and positively related to responsibility accounting ($\beta = .246$, $t = 6.648$, $p \leq .01$). This suggests that feedback is connected to responsibility accounting. Costs and/or revenues are accumulated and reported from department, faculty to the university authority. Deviations or variances from budgets are examined and corrective measures are addressed accordingly. However, summary from interviews from the respondents reveals that: "There are regular budget performance reports how well votes or budgets have been managed. The reports provide opportunities to heads of department to prioritise transactions and activities in their departments according to university goals (Faculty accountants)".

Results from RQ4 indicate that decision-making is significant and positively related to responsibility accounting ($\beta = .522$, $t = 8.644$, $p \leq .01$). This implies that decision-making is an aspect of responsibility accounting. Decision for managing costs and/or revenues is made at the departmental level. Qualitative data reveal that: "the heads of academic department make decisions on operational cost and/or revenues items for their respective departments. They are held responsible for costs and/or revenues performance (Faculty accountants)".

These results are supported by Gerald's finding that application of responsibility accounting increases efficiency. Managers draw more satisfactions from decision-making, an aspect of responsibility accounting.

Results from RQ5 indicate that responsibility accounting matters in public universities. Costs and revenues performance follow public university control hierarchy. Each position of responsibility manages or controls its cost and/or revenues items. Responsibility accounting is not a change of the accounting theory or principle; rather, it is a tool to control costs and/or revenues based on "who was responsible for what".

The study concludes that responsibility accounting matters in Ugandan public universities. Heads of academic departments are mandated to manage costs or revenues at their respective departments. They manage their budget-allocated estimates. They are equally responsible for their personal decisions against their budget lines or votes. It is incumbent upon them to ensure that the costs or revenues are accumulated and reported upwards from departments and faculties to university authority. This signifies that responsibility accounting follows public university hierarchical patterns. This is evidenced by definite hierarchy of authority areas (departments and faculties), the presence of systematic preparation for budgets by each authority area and delegation of authority in public universities.

This study contributes to managerial performance in Ugandan public universities. Control at public universities is necessarily a hierarchical structure exercise because it is not practical for a single person to control all functions and activities of public universities.

5.1. Implications

At the theoretical level, the study contributes to the development of literature relating to responsibility accounting at academic departments in Ugandan public universities. It emphasises the need to develop theoretical frameworks that can predict responsibility accounting in an organisation.

There is need to push for triangulation using both quantitative and qualitative approaches. These facilitate experiences in responsibility accounting at lower level of management in organisations.

It is useful for managers who want to adopt responsibility accounting as a management control device. Therefore, responsibility accounting at different management levels as a control device should be supported by the central authority.

Managers of public universities in Uganda should regularly produce performance reports to enable response to efficiency evaluation. Persons with delegated authority and responsibility should to be liable for activities under their control.

5.2. Limitations

This study examined whether responsibility accounting matters in Ugandan public universities. The focus was mainly cost and/or revenue performance within a typical public university hierarchy from the point of view of planning (budgeting), control, decision-making and feedback. However, this study is cross-sectional; it is possible that the views held by individuals may change over the years and is confined to public universities in Uganda. Although the constructs that have been used for measuring responsibility accounting have been defined as precisely as possible by drawing upon relevant literature and been validated by practitioners, the measurements used may not appropriately represent all the dimensions. The implication is that the constructs used may not fully be measurable. Future studies could use the basic questions but implement in terms of longitudinal rather cross-sectional design. The longitudinal study would need to correct changes in the data relative to the time element.

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Author details
Philip Owino[1]
E-mail: phowino@yahoo.com
John C. Munene[2]
E-mail: Kigozimunene@yahoo.com
Joseph M. Ntayi[3]
E-mail: ntayius@gmail.com
[1] Faculty of Education, Department of Educational Planning and Management, Kyambogo University, Kampala, Uganda.
[2] Faculty of Graduate Research, Makerere University Business School, Kampala, Uganda.
[3] Department of Procurement, Logistic and Transport Management, Makerere University Business School, Kampala, Uganda.

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