

Indirect Controls and Performance of Public Universities in Nigeria

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Abstract

The persistent challenges of inefficiency, underperformance, and perceived inappropriate procedures within Nigeria's public organizations necessitate executives to employ management control system techniques. This is to align the employees' goals with organizational objectives, to minimize the risks of waste, fraud, and mismanagement of public resources. In place of the stated, this study appraised the effects of personnel and cultural control on the performance of public universities in Nigeria. Using PLS-SEM to analyze the data obtained through administration questionnaires to 1,178 experienced personnel from 12 selected universities in Southwestern Nigeria, findings revealed that both personnel and cultural control are positively and significantly related to public universities' performance in Southwestern Nigeria. The study concludes that personnel and cultural control procedures, if wellarticulated, are capable of transforming the performance of the public universities in Nigeria. The study recommends that; the recruitment process and other personnel control techniques should be objectively structured and not based on political favours. Universities management should also intensify efforts to implement the universities' Perceptiveness and objective into the institution's code of conduct as the source of cultural control.

1. Introduction

Globally, the success and development of any nation is greatly influenced or distorted by the level of her university educational system, as it provides the apex form of knowledge acquisition platform. Universities train the workforce, breed the leaders, groom the business, and bring innovation and inventions of much-needed tools for social, economic, and political desires. In a bid to deliver this enormous task, it will employ many masses and consume huge flows of resources. Therefore, the university's survival and performance are of great importance to her country, since it has been established that less efficient output from any country's higher institutions of learning translates to a disastrous future for such nation on intellectual capital, economic, social, and political development (Mahmud, 2020), (Seeber, et al 2020). Moreover, it is been widely accepted that "destroying any nation requires reducing the quality of their education and by so doing patients die in the hand of doctors, buildings collapse in the hand of engineer, government policy summersaults in the hand of the economist, justice are lost in the hand of judges" (Nurudeen, et al 2023).

Universities administrations and management have changed to performance-driven in Singapore, India, Brazil, and other developing nations. These reforms in management led the universities to treat their stakeholders; students, personnel, research grantors, and funding associates in a competitive manner (Nurudeen, 2022). This reform was instituted by the New Public Management (NPM) implementations, with the management

control system procedure as the most essential attribute of this restructuring (Heinicke & Guenther, 2019), (Nurudeen, et al 2021). Management control systems entail objectives attainment, performance strategies, and employee motivations; these have attracted more emphasis in leading universities recently.

According to statista (2023), there are a total of 29,347 universities in the world as of October 2023, with over 2,100 in Africa; Nigeria had not less than 170 universities from the available total for Africa. Recognizing the need for performance measurement of these apex institutions of learning, there are several ranking bodies globally available assigned to these, including Times Higher Education (THE), Academic Ranking of World Universities, and QS World University Rankings, which remain the most famous. These ranking bodies centered their ranking requirements on four major objectives of university establishment, namely, research efforts, teaching qualities, community impact, and transfer of knowledge. "THE" in 2023 ranked 2,673 and came out with the result that only 7 out of the ten topped-performing universities are from the United States of America, while the remaining 3 are from England. However, only 36 out of the 170 universities in Nigeria managed to have their names surfaced on the ranking list, which somehow called for the rejuvenation of the Nigerian university system.

Covenants University was rated first in Nigeria among the class of 801- 1000 of the world, against the position 401-500 attained by the University of Ibadan in 2021 as Nigeria's best university. Somehow, Nigerian universities are not performing as impressively as they should be, while the ranking has gained momentum of acceptance as an indicator of the quality delivery of educational services in higher institutions of learning to prospective students, funding organizations, and other stakeholders. There have been calls for action on the state of public universities in education in Nigeria; in Nigeria, public university managements and administrators have witnessed a series of reforms and schemes to restore to glorious past days. The role of the National University Commission (NUC) was also expanded, all in a bid to attain the optimum performance from the nation's apex institutions of learning.

The desired results appear to be at odds with various performance rankings and studies. Global university rankings such as THE World University Rankings 2023, Webometrics 2019, and World Education Studies 2017, as well as national assessments like those from the National University Commission (2020), have consistently shown the subpar performance of Nigerian public universities (Nurudeen et al. 2023), (Stutern, 2018). Furthermore, several studies have highlighted persistent issues within these institutions. Studies (Ekpo, et al 2020); (Nurudeen & Garuba, 2022) pointed to inefficient control systems as a major concern. Some research findings by Johnes (2018); Okebukola (2019); Moed et al. (2018) emphasize the problem of ineffective resource management. Another study by Sanni et al. (2020) corroborates these findings, identifying these issues among other systemic challenges plaguing Nigeria's public universities.

Impliedly, the relatedness of the management control system and organizational performance in Nigerian public universities, especially those prevaricating, need to be appraised. The indirect controls (personnel & culture) are meant to equip and motivate the employee toward optimum performance. These control elements are very essential aspects of the management control system. According to the findings of Baid (2017), Berend et al (2018), and Wangari (2017), the management control system is described as a series of techniques and procedures established by an organization to motivate or guide employees to behave rightly to improve such an organization's performance. Therefore, employing control techniques to improve employee delivery in public universities should effectively attain the vision and mission of the university establishment. Meanwhile, the performance report of the Nigerian public universities in the last few decades has been consistently poor. According to a particular report by Nurudeen & Garuba (2022), substantial fortune has been eroded from Nigeria due to this abysmal performance; Nigerians in the United States of America alone spent well over one hundred and ninety billion naira on university education in 2021.

Nigerian public universities are perceived to be operating with insufficiency, underqualified, and unmotivated personnel. This was, however, buttressed as studies (Abu et al. 2022) and (Nurudeen et al. 2021) revealed that lack of motivation and inadequate on-the-job training are negatively influencing the quality of teaching in these institutions. Furthermore, in Okebukola (2019), it was stated that the available numbers of academics are far below the requirements by the NUC standard. Despite the weighty responsibility of the academics, they are not adequately compensated concerning the remunerations and working environments. In addition, Okebukola (2019) there is claims that Nigerian public universities lost the competition with foreign universities in terms of recruiting Nigerians with the highest levels of expertise. This was ascribed to lopsided appointments of key university heads, nibbled meritocracy, favoritism, godfatherism, political scores, and other factors.

In an appraisal of the academic culture, Afolabi et al. (2019) revealed that seminars, conferences, mentorship, symposiums, and workshops do not significantly influence staff behavior and productivity within their local environment and the nation at large. Furthermore, the research found that only 40.6% of Nigerian universities have achieved research effort recognition in reputable platforms such as Scopus. This is a testament to why the research efforts of universities in Nigeria are not effectively contributing as expected to the country's socio-economic development, technological advancement, and business growth.

From the above background, two questions were raised to achieve the research objective:

- i. What are the effects of personnel control on the performance of public universities in southwestern Nigeria?
- ii. What is the effect of cultural control on the performance of public universities in southwestern Nigeria?

2. Literature Review

The management control system is a very wild concept that has engaged robust intellectual contributions, which entails categorizing the control techniques into direct and indirect control techniques by Merchant and Van der Stede (2007). The object of control framework of Merchant and van de Stede stated that the results and action control are direct control, while personnel and cultural control are classified as indirect controls these allow employees to "control and motivate themselves" (personnel control) or lead to mutual monitoring through organizational culture. This study chooses indirect controls as they require less influence from external persons or bodies; however, they look evasive, but they are the most effective in the education sector (Heinicke & Guenther, 2019); (Nurudeen & Garuba, 2022). Table 2.1 provides details of the categories of controls, following the object of control framework of Merchant and Van de Stede (2007).

Table 1 Categorizations of control elements

Category	Results control	Action control	Personnel control	Cultural control
Mode of control	<i>Direct</i>	<i>Direct</i>	<i>Indirect</i>	<i>Indirect</i>
Definition	Enforce target achievement through monitoring and rewarding outputs	Prevention of undesired behaviour, promotion of desired behaviour for task accomplishment	Fulfilment of job requirements	Control through establishment of shared values, social norms and beliefs
Notion of Control	Control of outputs through management	Control of behaviour through management	Exercise of self-control by individual employees	Group control among organisational members
Examples of control techniques	Performance measurement (e.g. ROE, net income, inventory control, quality). Budgeting. Reward structures. Report of achievements	Procedure guide. Operating manuals. Supervision of rules. Physical or administrative restrictions (e.g. expenditure approvals, passwords)	Recruitment policies. Training programmes. Job design. Provision of sufficient resources for the job.	Codes of conduct. Group based rewards. Interaction. Manager serves as a role model

Source: Merchant and Van da stede (2012).

2.1 Personnel Controls

These are the control techniques and procedures that focus on staff capability and all it entails to equip staff to carry out their duties. From his work, Okojie (2017), personnel control can be achieved through the provision of essential requirements, selection, and placement, as well as job design and training. Also, Schneider and Preckel (2017) aid employees in performing their jobs successfully by capitalizing on people's intrinsic need to manage themselves and ensuring that individuals possess the essential attributes (intelligence, qualifications, and experience) as well as the resources to perform the required task. Moreover, Heinicke and Guenther (2019) state that employee selection processes, job training, and educational programs are examples of personnel control. While employee selection processes and placement is choosing the appropriate personnel to do a specific job, training ensures a vast understanding of the task and management expectations while creating an occupation in a seamless manner to permit easy delivery of the job design.

The goal of selection and placement is to find the appropriate person for a particular job, while training is to ensure the personnel acquire more skills and understand how to deliver the job as the management desires. Personnel control ensures occupations are not clumsy or poorly designed. It advocates for prompt recognition of each individual, unit, and department's outputs, which is an organizational expectation; thereby, competency and autonomy are reinforced. Autonomy and competence are thought to 'catalyze' higher levels of intrinsic motivation in employees (Berend et al, 2018). Authors Baid (2017), Berend (2016), Heinicke and Guenther (2019), and Sutton and Brown (2014) maintained academic requirements for each level, promotions, and workshop and workload maintenance are some examples of personnel controls in the universities.

2.2 Cultural Controls

Cultural controls are a reflection of an organization's mission statements and fundamental values that are instituted by senior executives; they can also be considered feedback mechanisms among employees (Merchant and Van de stede, 2007). Similarly, Collin (2012), describes culture as a set of shared values, social conventions, and beliefs that guide the behaviors of members of an organization. Therefore, cultural controls are techniques used by the executive to ensure that the organization members are aligned with established norms; however, individuals often exercise cultural controls over one another. Social controls are another name for cultural restrictions. In other words, the culture of an organization or department can be mutually monitored and influenced through an established cultural control system (Nurudeen & Garuba, 2022).

Based on the foregoing, this study concludes that cultural controls are designed to increase employees' feelings of "relatedness" through strengthening emotional relationships with other employees in the business or within the same department. These links can be formed with coworkers or formed with the organization's overall ideals and norms. Conference and seminar presentations, mentorship, as well as the rank of accepted journals, are part of the cultural controls in universities (Agyemang & Broadbent, 2015; Heinicke and Guenther, 2019).

2.3 University Performance

Like other organizations, universities are now faced with market pressure and alarming competition, which has challenged the university's management style globally. There has been a positive change in the universities in terms of student satisfaction and efficient relationships with industrial sectors (Ahmed et al., 2018). In the bid to achieve the standard performance required, management controls play the essential role of motivating employees' deliveries, thus, efforts to determine how strong the commitments of the universities to stay ahead of others leads to a rating table, otherwise known as universities ranking (Berend, et al 2019) and (Alli, et al 2020)

It is almost impossible to measure university performance accurately; the leaders in the universities are not appointed on profit maximization skills or management excellence traits; they were chosen based on their vast knowledge in the chosen area of discipline (Nurudeen, 2023) and (Sanni et al. 2020). Moreover, the two main outputs of the university system, teaching quality and research efforts, have a significant effect on the nation's socio-economic advancement, while their quality can only be reliably attested to by the captain of industries and publishers (Orga et al. 2023). The number of university ranking bodies keeps growing, while the Times Higher Education Ranking, World University Ranking, Quacquarelli Symonds World University Rankings, and Ranking Web of Universities (Webometrics) are the most prominent platforms that report the overall performances and rank the universities globally (Ahmed et al. 2018). A thorough review of these ranking bodies choosing parameters (including research efforts, teaching quality, and community development performance) revealed that the academic personnel's performance dictates the university's overall performance.

2.3.1 Research Performance

Research performance is a primary and important metric in evaluating university performance, reflecting an institution's commitment to knowledge creation and innovation. Recent studies have explored various aspects of research efforts and their impact on university rankings, funding, and overall prestige (Nurudeen, et al 2023). Research effort encompasses a range of activities, including publication output, grant acquisition, and research impact (Nurudeen, 2022). From another dimension, Abramo and Ciriaco (2014), define research effort as the resources invested in research activities, both in terms of time and funding. Measuring research effort, however, presents challenges due to its multifaceted nature. Moreover, Moed et al. (2018) proposes a comprehensive framework that includes bibliometric indicators, research funding, and collaboration metrics to quantify research effort.

The relationship between research efforts and university rankings has been well-documented in recent literature. Meanwhile, studies by Nurudeen (2022) Okebukola (2019), Seeber et al. (2020) found a strong positive correlation between research output and university rankings across various global ranking systems. Furthermore, Johnes (2018) demonstrated that research performance significantly influences an institution's reputation and ability to attract high-quality students and faculty. Research effort continues to be a critical performance index for universities, influencing rankings, funding, and institutional prestige. As the higher education landscape evolves, institutions must navigate the challenges of maintaining high research productivity while balancing other academic responsibilities.

Despite its importance, sustaining high levels of research effort presents several challenges. Tight (2019) also identified workload pressures, administrative burdens, and the need to balance teaching responsibilities as key obstacles to research productivity. Additionally, Kwiek (2018) highlighted the growing stratification in research efforts among faculty members, with a small percentage of highly productive researchers

contributing disproportionately to overall institutional output. In an attempt to mitigate these challenges, universities are implementing various strategies to boost research efforts. The study of Horta and Santos (2020) emphasizes the importance of creating a supportive research environment, including mentoring programs and research incentives. Meanwhile, Fitzgerald et al (2016) argue for the development of interdisciplinary research centers to foster collaboration and increase research impact. A cursory review of these efforts reveals they are within the scope of the management control system.

2.3.2 Quality of Teaching Performance

The quality of teaching has emerged as a crucial performance indicator for universities globally, reflecting the institution's ability to impart knowledge and skills to students effectively. Recent studies have highlighted the multifaceted nature of teaching quality and its impact on university performance. Teaching quality is among the complex construct that encompasses various dimensions. It can also be described as the degree to which instruction enhances student learning, critical thinking, and problem-solving skills (Serdyukov, 2017). However, measuring teaching quality presents challenges due to its subjective nature. In their efforts, Steinhardt et al. (2017) propose a multidimensional framework that includes student evaluations, peer assessments, and learning outcomes to provide a comprehensive measure of teaching quality.

Universities increasingly recognize teaching quality as a critical factor in their overall performance and rankings. In analyzing the impact of teaching quality on university rankings, it was discovered that institutions with higher teaching quality scores tend to perform better in global rankings (Berend, 2016). This underscores the growing importance of teaching excellence in the competitive higher education landscape. Also, the relationship between teaching quality and student outcomes has been well-established in recent literature. A meta-analysis by Schneider and Preckel (2017) found a strong positive correlation between high-quality teaching and student achievement across various disciplines. Furthermore, there are results from Akareem and Hossain (2016) and El Filal and Mohammed (2018) demonstrated that students' perception of teaching quality significantly influences their satisfaction and academic performance.

Despite its importance, maintaining high teaching quality presents several challenges. Workload pressures, lack of professional development opportunities, and insufficient resources as key barriers to teaching quality (Bai & Hudson, 2018). Universities are implementing various strategies to address these challenges to enhance teaching quality. The study Subbaya & Vithal (2017) emphasizes the importance of robust faculty development programs in improving teaching skills. Meanwhile, Baid (2017), Berend (2016), Berend et al. (2019), and Nurudeen et al. (2021) believed that the management control system has the potential to lead higher institutes of learning to the attainment of higher quality teaching. Therefore, this study will test the effect of a control object on the performance of universities in Nigeria.

2.3.3 Community Development Performance

In recent years, community development has emerged as a significant performance indicator for universities, reflecting their commitment to social responsibility and engagement with the broader society. Community development in the context of university performance encompasses a wide range of activities aimed at improving the social, economic, and cultural well-being of the immediate host communities (Nurudeen et al, 2023). In another study by Benneworth (2018), it is defined as the process by which universities collaborate with local stakeholders to address community needs and foster sustainable development. This concept has gained prominence as universities increasingly recognize their role as anchor institutions within their communities (Ehlenz, 2018).

While traditional university rankings have focused primarily on research output and teaching quality, there is growing recognition of community engagement as a performance indicator. In a few studies, Hazelkorn (2017) notes the emergence of new ranking systems that incorporate measures of social impact and community engagement. This shift reflects the increasing importance of universities' "third mission" alongside teaching and research. Community development initiatives often involve student participation, which can enhance their learning experiences and employability. A study by Hebert (2015) found that students involved in community engagement activities demonstrated improved critical thinking skills and civic responsibility. Similarly, another work Kilgo et al. (2015) observed positive effects on students' intercultural competence and social justice orientation.

Despite the benefits, universities face several challenges in implementing effective community development programs. In their efforts, Ntlhou and Singh (2020) identify resource constraints, lack of institutional support, and difficulties in sustaining long-term partnerships as key obstacles. Additionally, Fitzgerald et al. (2016) highlight the need for better alignment between community development activities and institutional missions and strategies. Universities are adopting various strategies to strengthen their community development initiatives. Research Harkavy et al. (2016) advocate for the integration of community engagement into core

academic activities through service-learning and community-based research. Meanwhile, studies by Okebukola (2019) and Subbaye & Vithal (2017) emphasize the importance of reciprocal partnerships that benefit both the university and the community.

Relating to the strategies for achievement of the three performance indexes as discussed, it is evident that the strategies embraced by the universities are directed toward improving the performance of academics. Meanwhile, academic personnel are the drivers of the three main performances of the universities (Nurudeen & Garuba, 2022). This position is supported by (Ogbudinkpa, 2017); (Ogar, et al 2023). This implies that the performance of the university can be influenced by the academic personnel's conduct. To appraise the effect of the management strategies and techniques that are part of the management control constructs on the reported University's performance, there is a need to assess the effect of indirect control on the University's performance. Therefore study two hypotheses are stated in null form:

- i. Personnel control has no significant effect on the performance of public universities.
- ii. Cultural control has no significant effect on the performance of public universities.

2.4 Theoretical Review: Theory of Planned Behaviour

This study is hinged on "The Theory of Planned Behavior (TPB), developed by Icek Ajzen in 1985 and re-modified in 1991. This theory is a general model for the prediction and explanation of behaviors and assumptions that behavior is determined by intention and certain circumstances described as behavioral control. TPB introduces another causal factor of intentions to the Theory of Reasoning Action construct, which is perceived behavioral control. Moreover, Mahew and Leandre (2017) state that behavioral intention consists of a sum of subjective norms, perceived behavioral control, and attitudes toward the behavior.

The focus of personnel control is to ensure effective delivery from the employee through the improvement of competencies and efficient utilization of resources. This results in competence and autonomy, which are major constructs in the Theory of Planned Behavior. Training is used to elicit feelings of competence by teaching people how to master their tasks, which is consistent with the theory's view of subject norms. Moreover, self-determination theory also asserts that the 'need for relatedness' can be satisfied when a person relates to others and is cared for by others; in the organization, the sense of belonging will develop and ignite intrinsic motivation. According to Self-Determination Theory (SDT), meeting employees' demand for 'relatedness' promotes intrinsic motivation and increases the delivery rate Berend et al, (2019).

Deducing from the theory assumption, performance, which is an attribute of behavior, depends to a certain extent on one's actual behavioral control (capacity) to perform the task, such as authority; acceptance and support from colleagues increase the chances of an individual in behavior (Nurudeen, 2022). Furthermore, perceived behavioral control refers to a person's perception of benefits or sanctions and the ease or difficulty of taking a course of action of interest. This theory assumption implies that should an individual have the capability in terms of resources and freedom as well, he will take an action, to certainly perform if there is a perceived benefit or detriment to a choice of action. Deducing from the above theory, having the right employee and providing the appropriate resources (control techniques) will lead to better performance and otherwise where there is no control over recruitment and organization culture. Therefore, the performance of the universities depends on the personnel and culture in place the universities.

2.5 Link between Personnel and Cultural Control on Performance

Several empirical attempts, Agyemang and Broadbent (2015), Heinicke and Guenther (2019), Joaquim and Patricio (2019), Laura (2021), and Mark (2020) examined the impact of management control systems on the performance of universities empirically, with the exception of Mark whose study adopted a balanced scorecard. All studies indicated that the management control system is significant and positively related to the performance of universities.

Research by Berend (2016) investigated the effect of a management control system on organization performance in line with the object of control framework. The study employed the PLS-SEM to analyze the data obtained from the administration of questionnaires. It was discovered that the four Objects of the control frameworks are significantly related to the performance of the organization. It was further revealed that the two indirect controls, Personnel, and cultural control, have a higher impact on the performance with moderation from motivation effects.

The study by El Filali and Mohammed (2018) examines the effects of personnel and action controls on an organization's future growth. The study employed exploratory factor analysis for construct validation. Also, the model testing was based on a survey conducted in Sweden from high-growth firms. The result shows that personnel control is strongly related to future growth as it affects its present status.

Also, another study by Abu et al. (2022) investigated the relationship between culture control and organizational performance. Data obtained through purposive sampling techniques was processed with a Partial

Least Square (PLS). The results indicated that culture control is significantly associated with organizational performance. It was also revealed that culture control mediated the relationship between the business strategy and organizational performance.

Using the Object of Control framework to determine the most efficient control element in teachers' student performance; the Baid (2017) study uses a total of 58 school-level summated scores; findings reveal that action control is the most vibrant control for students to perform is action control while personnel control was found to be prominent for the teachers.

In another work by Berend et al. (2019), the relationship between management control, motivation, and academic performance was examined. The primary data was obtained from 105 units of public organizations. Findings indicated that the indirect controls related positively to the employees' motivation. Moreover, both extrinsic and intrinsic motivations are related to performance positively.

Similarly, the links between the management control system and university performance in Nigeria, reviewed by Okojie (2017) concludes that efficient performance in Nigerian universities depends on the effectiveness of the management control system. Meanwhile, a study by Nurudeen et al (2021) examined the nexus between the management controls system and university performance in Nigeria. The study used the research output as only a performance index. The study concludes that the performance of higher education institutes significantly relies on the management control system effectiveness. This finding was corroborated by another study's empirical work (Nurudeen & Garuba, 2022), where the Quality of teaching was tested against the influence of the management control system. Having tested the control package on each performance unit, we need to establish the effect of each (Indirect and direct) aspect of control on the university's performance. This study, therefore, appraises the effect of indirect controls on the three university performance indexes.

3. Methodology

The cross-sectional research design was employed to examine the effect of indirect controls on the performance of public universities located in the southwestern region of Nigeria. The research design provides the study with a comprehensive understanding of the variables, being an explanatory research based on a description of the variable behavior.

This study was conducted on the 12 public universities situated in southwestern Nigeria as of January 2023. The primary data were obtained from the personnel from the twelve [12] aforementioned universities. There are 153 deans of faculties, 850 heads of departments, and 175 heads of non-academic units at the selected universities. These are a team of experienced academics who have, in one way or another, influenced the management control system or are in charge of implementations of management control policies at the moment. This sampling frame makes a total of 1,178 as the working population for the study.

The sample size was determined using the Yamane (1967) approach to ensure quality and representativeness.

$$n = N / [1 + N(e)^2]$$

Where: n is the sample size; N is the population size; e is the level of precision; $n = 1,178 / [1 + 1,178(0.05)^2]$; $n = 1,178 / [1 + 1,178(0.0025)]$; $n = 1,178 / [1 + 2.945]$; $n = 1,178 / [3.945]$ $n = 298$.

The sample size of two hundred ninety-eight (298) respondents was found suitable for the study was administered. These responses were analyzed using Partial Least Squares - Structural Equation Models (PLS-SEM) inferential statistics. The Structural Equation Model (SEM) is considered the best method for analyzing unobservable, latent, and difficult-to-measure variables among second-generation multivariate data analysis tools. It can run complex models with multiple predictors. Moreover, it has the ability to test for model errors (Hair et al., 2017).

The [11] regression model was adopted to examine the relationship and effect of indirect control systems on the performance of universities and consequently specified as follows.

$$\text{PERFU} = f(\text{MCS})$$

Where: PERFU = Performance of Universities; MCS = Management Control System; Using the Levers of Control as management control parameters.

The model was adopted and modified to object of control frameworks

$$\text{PERFU} = f(\text{PC}, \text{CC})$$

$$\text{TQP}_i = \alpha + \beta_1 \text{PC}_i + \beta_2 \text{CC}_i + \mu_i$$

$$\text{CDP}_i = \alpha + \beta_1 \text{PC}_i + \beta_2 \text{CC}_i + \mu_i$$

$$\text{RP}_i = \alpha + \beta_1 \text{PC}_i + \beta_2 \text{CC}_i + \mu_i$$

Where:

TQP = Teaching Quality Performance (Dependent Variable)

CDP = Community Development Performance (Dependent Variable)

RP = Research Performance (Dependent Variable)

PC = Personnel Controls (Independent Variable)

CC = Cultural Controls (Independent Variable)

4. Data Presentation and Result Analysis

4.1 Descriptive Statistics of the Constructs

The study adopted the five-point Likert scale. Therefore, measurement of dispersion is necessary. The two fundamental descriptive statistics, mean and standard deviation, were tested in Table 2.

Table 2 Mean and standard deviation of the variables

Constructs	N	Mean	Standard Deviation
Personnel Control	296	3.91	.716
Cultural Control	296	3.72	.722
Teaching Quality Performance	296	3.78	1.09
Community Development	296	3.25	1.10
Performance	296	3.77	1.12
Research Publication Performance			

Author's Computation 2023

Personnel control has the higher mean with (M = 3.91, SD = .716). Cultural control has (M = 3.72, SD = .722) and dependent variable that was proxy by the three main performance indexes of the universities; Quality of Teaching performance has a means of 3.78 and standard deviation of 1.09. We have 3.25, 1.10, and 3.77, 1.12 as mean and standard deviation for Community Development Performance and Research Publication Performance, respectively. Overwhelmingly, all the variables were in the high-level range. This indicates most of the responses agree with the positions of the variables. As the SD were all above the threshold of 0.5, the results were said to be moderate and fit. However, the more the figure of SD is closer to 1, the better it is for decision-making.

4.2 Normality and Multicollinearity

This study also tested the normality of the variables used in the analysis and found that all constructs were at acceptable values from the threshold of -3 and +3 set by (Hensler et al, 2015). Table 3 presents the maximum kurtosis value of (1.0) and the extreme value for skewness (-1.3).

Table 3 Results of skewness and kurtosis test

Constructs	Skewness	Std Error	Kurtosis	Standard error
Personal Control	-1.390	160	1.068	319
Cultural Control	-0.814	160	0.632	319
University Performance	-0.863	160	0.905	319

Source: Author's Computation 2023

The study also conducted the multicollinearity and discovered no problem of multicollinearity on the data. Table 4 presented a minimum value of 0.448, which exceeded 0.20 as the tolerance value. While it presents 2.232 as the maximum for the VIF values that have a recommended cut-off of 5. Also, the values presented as exogenous construct correlations were considerably below the threshold values of 0.9. This indicates that personnel control and cultural control were not highly correlated.

Table 4 Multicollinearity test (Tolerance and variance inflated factor value)

Constructs	Items	Tolerance	VIF
Personal Control (PC)	6	0.552	1.811
Cultural Control (CC)	6	0.448	2.232

Source: Author's Computation (2023)

4.3 Reliability and Validity

The result of internal consistency with composite reliability (Fornell & Larcker, 1981) and Cronbach's alpha (Cronbach, 1951) indicates the study instrument achieved a desirable reliability level, as presented in Table 5, as the VIF results are not higher than 5.

Table 5 Summary of measurement model (Convergent validity of the constructs)

Constructs	Items	Loadings	Cronbach Alpha	Composite Reliability	AVE
Cultural Control	CC1	0.72	0.769	0.843	0.519
	CC2	0.742			
	CC3	0.682			
	CC4	0.761			
Personnel Control	PC1	0.691	0.803	0.859	0.505
	PC2	0.708			
	PC3	0.687			
	PC4	0.758			
Teaching Performance	TP1	0.752	0.806	0.862	0.512
	TP2	0.62			
	TP3	0.734			
	TP4	0.64			
Community Service Performance	CS1	0.820	0.866	0.567	
	CS2	0.786			
	CS3	0.812			
	CS5	0.634			
	CS6	0.692			
Research Performance	RP1	0.767	0.887	0.629	
	RP2	0.755			
	RP3	0.704			
	RP4	0.801			
	RP5	0.801			
	RP6	0.688			

Source: Author's Computation, 2023

The study has a composite reliability coefficient between 0.810 and 0.887, and AVE was between 0.505 and 0.519, the result above the acceptable level of 0.70 and 0.4 minimum as recommended (Hair et al, 2017). Also, the study attained internal consistency from 0.769 to 0.806 for the Cronbach's Alpha coefficient values. The minimum threshold of 0.7 is also achieved for individual variables to attain internal consistency.

4.4 Path Coefficients Results for Research Questions 1 (Q1)

Research question one seeks to know if personnel have any effects on or predicts university performance. This inquisitiveness serves as the foundation for hypothesis H01 throughout the study. Table 6 and Fig, 1 demonstrate that all correlations were significant. Personnel control achieves the greatest impact on research performance ($\beta = 0.523$; $t = 7.937$; $p < 0.001$), next to it, is community service performance ($\beta = 0.343$; $t = 5.768$; $p < 0.001$), and the least effect is on teaching quality ($\beta = 0.473$; $t = 5.768$; $p < 0.001$).

Table 6 Hypothesis

	B	Std Error	T-Value	P Values	Confidence Interval	
					2.50%	97.50%
PC -> CSP	0.343	0.060	5.768	0.000	0.231	0.423
PC -> TQ	0.473	0.073	6.525	0.000	0.334	0.576
PC -> RP	0.523	0.066	7.937	0.000	0.384	0.617

Source: Author's Computation, 2023

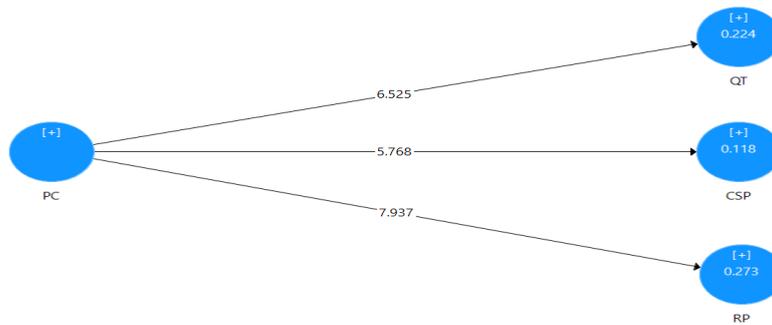


Fig. 1 Structural model for research objective 1 (RO1)

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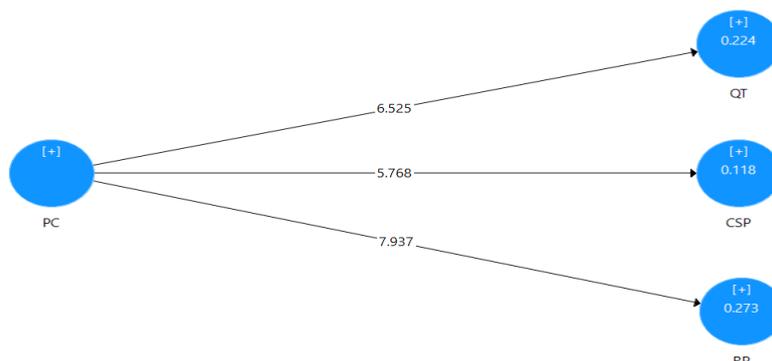


Fig. 1 Structural model for research objective 1 (RO1)

Fig. 1 reveals that the t-value is the one on the line while the R2 is the value on the circles. The reason for low R2 is the fact that there are three dependent variables tested on the independent variable, while there are four other independent variables in the same model. The figure attests to the validity of the Table 6.

4.5 Path Coefficients Results for Research Questions 2 (Q2)

4.6 Path Coefficient

The objective is to determine the effect of indirect controls on the university's performance. Table 8 presents the relationship between the independent and dependent variables of the study.

Table 8 Result of the direct relationship and hypothesis testing

Relationship	Beta	Se	T-value	P Values	Decisions	BCI-LL 5%	BCI-UL 95%
Personnel Control -> University Performance	0.133	0.058	2.291	0.029	Supported	0.028	0.164
Cultural Control -> University Construct	0.229	0.061	3.729	0.000	Supported	0.055	0.253
University Performance				R- Square Value (R ²)			.686

Note: BCI-UL – Confidence Interval Bias Corrected-Upper limit; BCI-LL - Confidence Interval Bias Corrected-Lower Limit

Author's Computation 2023

4.7 Hypothesis Testing

From Table 8, we have a statistical analysis result that supports hypothesis one's assumption. It presented a significant and positive relationship between personnel control and university performance. Therefore, ($\beta = .133$; T-value = 2.291; P=.029) proved the H₁ is supported. The second hypothesis (H₂) was also supported statistically with the result presented in Table 4.6, the relationship between cultural control and university performance was proved to be positive and significant ($\beta = .151$; T-value = 2.417; P=.016). Therefore, H₂ is positively supported.

4.7.1 Coefficient Determination (R2)

Further analysis presents the coefficient determination of the study as 69%. This indicates that 69% of the variance of the University performance variance was collectively dictated by the sets of exogenous latent variables under the study. This (69%) is categorized as a substantial criterion (Falk & Miller, 1992). Therefore, the endogenous latent variables of the study had an acceptable level of R² values.

4.8 Discussion of Findings

Table 8 presents the statistical evidence of the relationships of the studied variables. Personnel control is significant and related positively to the university performance with a $\beta = .133$; T-value = 2.291; P=.029. Therefore, this study's preposition of H₁ was supported by the finding that the value of R² showed 69%, which, by rule of thumb, categorization was substantial (Falk & Miller, 1992). This study's assumption and H₁ are supported. This result corroborated the findings of studies; (Baid, 2017) and (Berend, et al, 2019); and (Nurudeen, 2022).

The findings support the study's prior expectation and the postulation (Ouchi, 1979) that institutions such as schools, research laboratories, and public service establishments must be focused on implementing (personnel control) their employees who directly affect the establishment's performance. Theoretically, the behavior of university employees is said to be carefully planned around attitude towards (their qualifications) behavior, Subjective norms, and perceived behavioral controls (on-the-job training). Drawing from the theory of planned behavior postulations, the behavior of employees shall be compromised if not controlled towards the organization's objectives, and once it is guided by efficient personnel control, the behavior will be tilted towards the set objectives and attainment of the expected performance. Impliedly, this study suggests that public universities in Southwestern Nigeria can enhance their performance through effective personnel control, free of undue influence from political offices and external agencies.

Concerning cultural control, the result in Table 4.7 indicates a positive and significant relationship between cultural control and the performance of universities. In essence, it denotes that cultural control affected the

university's performance with $\beta = .151$; T-value = 2.417; P=.016. This finding supports the study's prior expectation and is consistent with earlier studies Benneworth, et al (2018) and Berend et al (2019). It also reaffirms the findings (Merchant & Van de stede, 2017) and (Ouchi, 1979) that an organization should engage its employees in instilling its vision and mission (rituals and ceremonies) to establish norms and values (cultural controls), improve performance, and serve the organization's best interests.

Theoretically, this finding suggests that employee performance behavior in the selected universities is controlled by subjective norms; employees consider their organization's culture and norms before taking action. According to the theory of Planned Behavior, every behavior must have an attitude toward behavior, subjective norms, and perceived behavioral restrictions. Activities that increase performance have been implemented at universities as a norm; thus, this study confirms that cultural controls have a positive effect on university performance.

Also, using the Beta coefficients to evaluate the independent variables coefficient strengths of cultural control was found to have the largest Beta Coefficient, (0.229) this indicates that one increase to the standard deviation of cultural control will yield an increase of 0.229% on the overall university performance should other variables remain constant.

The Beta Coefficient of personnel control is (0.133). Therefore, a one standard deviation increase in personnel control will lead to a 0.133% increase in the predicted university performance if the other variables were held constant. Overall, the results revealed that indirect controls, consisting of personnel and cultural control have a strong effect on the overall performance of the public Universities in Nigeria. This study revealed that if the personnel and cultural control system is well implemented and effectively complied with, there will be a positive influence on university performance.

5. Conclusion and Recommendations

This study revealed that variances in control structures determine a substantial variety of functions performed by the employees in the selected public universities of southwestern Nigeria. In line with the findings, the study concluded that Personnel control procedures improve service delivery in public universities. This demonstrates that should the management continue to hire on merit, provide on-the-job training, maintain a job design, ensure an efficient workload, and provide prompt remuneration payments to the personnel employees, there is a certainty of positive and improved service delivery. Impliedly, having the university staff union battling the government over insufficient facilities and incessant failure of the government to honor the remuneration agreement signed will lead to poor performance and lower the nation's education standard. Moreover, public universities' performance was found driven by cultural control techniques. This suggests that the usage of research groups, mentorship, and the incorporation of the institute's aim and objectives into the code of conduct increases the performance in public universities. Meanwhile, if the university governing councils and management fail to uphold the institution's vision and mission by inculcating it into the practices, then the personnel will be directed through wimps and caprices, which will lead to an untenable performance for the institution and adverse effect.

From the findings and conclusions of this study, the following recommendations were made: Personnel control has a substantial effect on the university's performance. As a result, the study recommends that the university management should improve the control processes on recruiting, training, compensating, and other personnel management tasks to motivate employees to perform more. A shortage of personnel control available at the moment will harm performance. Cultural control was also found to be influencing university performance. It is therefore proposed that the management should enhance the efforts in mentorship, promote the seminary, fund yearly conferences, and support other activities that are focused on the universities vision and mission statement.

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Conflict of Interest

Abdulfatai Olanrewaju Nurudeen hereby declares that there is no conflict of interest regarding the publication of this paper.

Author Contribution

The author confirms sole responsibility for the following: the study conception and design, data collection, analysis and interpretation of results, and manuscript preparation.

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