Transformational leadership for sustainable productivity in higher education institutions of Cameroon

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Abstract

This study investigates the need for transformational leadership in the sustainable development of the productivity in higher education institutions (HEIs) in Cameroon. While institutions always request additional funding, the need for effective allocation and utilization of existing resources is relevant for sustainability. Participants for this study included teachers from state and private HEIs in Cameroon. Correlation and regression models were used to assess the impact of transformational leadership on sustainable productivity grounded in Michael Fullan's (2011) six secrets of educational change theory. A positive and significant relationship was observed between transformational leadership and the productivity of HEIs. While the practice of transformational leadership was observed more in state-owned HEIs, the impact was more in private than in state HEIs. The mean value for intellectual stimulation for sustainable productivity of higher institutes of learning is higher for the private as compared to that of state institutions showing that intellectual stimulation is more used in private HEIs to improve their productivity than in state-owned HEIs in Cameroon. While the correlational analysis showed that intellectual stimulation has the strongest correlate effect on sustainable productivity, the regression analysis showed that inspirational motivation has more added value to productivity. Based on these findings, we recommend a leadership model for sustaining organizational productivity, where the essence of the effective practice of transformational leadership is collaboration, especially in the change process.

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Introduction

Higher education institutions (HEIs) play a pivotal role in economic and social development (Filho et al., 2023; Islam et al., 2024; Shyiramunda & van den Bersselaar, 2024; Vergani, 2024; Fia et al., 2023). They are viewed as a powerful means to build a knowledge-based society and form the basis for innovation, technical transformation, and social change (Gerhard et al., 2022), which are the main pillars of sustainable development. As such, major changes in society are introduced and effected through higher education institutions (Schofer et al., 2021). This makes higher education (HE) critical for developing new systematic and transformative solutions for societal challenges (Purcell & Handock-Fraser, 2023) and for the continuous improvement of its productivity. This explains why universities in Cameroon since the 1960s, under the Ministry of Higher Education, have undergone a major transformation through reforms, including the adoption of the principles enshrined in the Bologna Process to harmonize programmes and policies of HE (Vuban, 2018). This calls for effective leadership, which is identified as one of the major challenges for quality assurance in HE (Parvin, 2019).

In today's competitive environment, leadership has become increasingly important for university transformation (Bebbington, 2021). In addition, effective leadership is identified as one of the major indicators for the attainment of the Sustainable Development Goals (SDGs), (International Institute for Sustainable Development (IISD), 2018), of which HE is at the core, captured in SDG4 (Milton, 2021). This has increased the demand for academic leadership and training, especially at the level of the department, to improve the effectiveness of higher education (Soderhjelm et al., 2016). Most often, in organizational management, the blame for low productivity or failure is on the lower or middle-level managers. Leaders need to understand that their relationships with all stakeholders can either make or mar organizational productivity. They need maximum collaboration with followers, and they also need to provide what it takes for followers to do what is expected of them. Reasons why Fullan and Scott (2009) suggest turnaround leadership for Higher Education Instiutions (HEI) to easily adapt to change and handle the challenges.

This study argues that transformational leadership (TL) plays a crucial role in the sustainable production of both quality and quantity of output in higher education. Organizations manage three major resources: human, material, and financial. The management of human resources is crucial as it utilizes the other resources (material and financial) to achieve the organization's goals and objectives. According to Blaga (2020), human resource management is relevant for improving the production capacity of an organization. This gives leadership relevance in organizational management and sustainability. However, organizations do not just need leaders; they also need leaders who can lead.

The major human resources that determine organizational productivity in education are teachers, because they are at the center of the transformation process. The quality of the process (teaching and learning) determines the quality of outputs. Teachers are the principal guarantors of this quality; they are at the center of change in every educational institution. As such, teachers are usually blamed for the failure or poor performances of schools, while little attention is given to leaders who are responsible for providing what teachers need to be productive. For example, the advent of COVID-19 required educational institutions, from basic to higher education, to move from face-to-face to online (Béché, 2020). Considering the case of Cameroon, where schools, even higher education institutions, were using the face-to-face approach, this change process was challenging for teachers as they were the major implementers of this policy. As regards online teaching and learning, the government did not take into

consideration the level of students' and teachers' preparedness in terms of the skills and didactic materials suitable for online education (Etomes, 2022). The administrators and managers of higher education simply gave instructions to teachers who had little or no knowledge of online teaching and learning with little or no support in terms of training, material, and financial resources, but expected results. Unfortunately, the swift spread of the pandemic did not provide enough time for the training of teachers and students, which was a major obstacle. However, it signaled the need for the transformation of HE leadership for sustainability (Bebbington, 2021).

While there are many approaches and styles of leadership, Alqatawenh (2018) emphasizes that transformational leadership is considered one of the main leadership styles that influence organizational and individual outcomes to achieve competitive advantage. This is supported by Aspirations 3(2) of the African Union's Africa We Want by 2063, which states that Africa must have capable institutions and transformational leadership in place at all levels to achieve its development agenda (African Union, 2015). Transformational leaders easily manage change and lead followers to effect change in the organization. With our ever-changing world prone to conflicts, crises, and pandemics, the role of transformational leaders cannot be overemphasized for organizational productivity. There are, however, significant knowledge gaps in the documentation and operationalization of transformative leadership in HEIs in Cameroon. Based on this background, we investigate the need for transformational leadership in the sustainable productivity of HEIs in Cameroon.

Four major components (idealized influence, inspirational motivation, intellectual stimulation, and individualized attention) define a transformational leader (Burns, 1978; Warrilow, 2012). As such, this study focuses its investigation on the four components of transformational leadership and the extent to which they sustain the productivity of higher education in Cameroon. In its specific objectives, we examine the extent to which (a) idealized influence affects sustainable productivity of higher education, (b) inspirational motivation affects sustainable productivity of higher education, (c) intellectual stimulation affects sustainable productivity of higher education, and (d) individualized attention affects sustainable productivity of higher education. The aforementioned objectives suggest that the productivity level in any organization is determined by the leadership team, which aims to achieve transformational leadership. Among others, the theoretical groundwork of Fullan (2008) and Koeslag-Kreunen et al. (2021) establishes the framework for these objectives. Enhancing employees' performance and fostering understanding of the organization's mission and vision are outcomes of transformational leadership. For instance, Tran and Nghia-Warrilow (2012) recognized charisma or idealized influence, inspirational motivation, intellectual stimulation, and personal and individual attention as the key elements of transformative leadership. According to Zacher and Johnson (2015), the use of transformational leadership methodologies provides collaborators the chance to exceed their anticipated performance levels. We therefore statistically test the lead hypothesis that there are no significant effects of transformational leadership on the sustainable productivity of HE in Cameroon. Specifically, we test to establish whether individualize consideration, inspirational motivation, intellectual stimulation, and idealize drive sustainable productivity of higher institutes of learning. We selected teachers from state and private HEIs in seven regions of Cameroon and employed regression analysis to evaluate the lead hypothesis.

The Nexus of transformational leadership and productivity of higher education

Among the countries in Sub-Saharan Africa, Cameroon has been at the forefront of HE reforms that address the human capital needs of the economy. Higher education in

Cameroon, as defined by Law No. 005 of 16 April 2001, to structure HE, touches on all the post-secondary training courses taught by state HEIs and private education institutions approved by the state as HEIs (Cameroon, 2001). Article 2 assigns the HE realm the basic mission of producing, organizing, and disseminating scientific, cultural, professional, and ethical knowledge for development purposes. This supports the objectives of HEIs as agencies of knowledge production. For the goals and objectives of HE education to be attained, governance policies are of relevance, and reforming policies in the changing environment is required for sustainability.

According to Knight (2018), the impact of leadership on organizational productivity through their behaviours, values, and ability to establish a sustainable performance-enhancing culture is one major area of productivity that has not been given serious thought. The level of productivity in any organization is primarily determined by the leadership team, from the top level to floor-level management. Most often, especially in large organizations, the accountability for productivity is usually pushed down to middle management; meanwhile, the behaviour and culture of top leadership have spillovers on the productivity of every individual and group in the organization (ibid.). Leaders, especially at the top of management, should focus on the engagement of every human resource in the organization for optimal productivity.

Transformational leadership is defined as a leadership process that enhances employees' performance beyond expected levels by creating awareness of the mission and vision of the organization, providing them with the necessary support, and inspiring them to higher performance (Northouse, 2010). This definition makes transformational leadership relevant for organizational productivity. Bakr and Alfayez (2021) found a positive correlation between transformational leadership and the psychological empowerment of teachers. This is because teachers' professional well-being is relevant to the sustainable development of HE (Si, 2023). In this regard, Ruan et al. (2023) recommend that HE managers practice more leadership than management roles. Innovation is a core component of TL that triggers goal-oriented behaviours, promotes organizational change, and fosters a spirit of trust that stimulates higher performance (Al-Hussseini & Elbeltagi, 2016). According to Zacher and Johnson (2015), such practices of transformational leadership provide an opportunity for collaborators to perform beyond their expectations; they encourage knowledge sharing and individual creativity, which are the core drivers of innovation (Zhang et al., 2017). It is worth noting that teachers, who are at the center of implementing change in HE, may find it difficult to accept transformation (Stack & Wallace, 2023), which calls for the need to train leaders to be able to transform educators. Tran & Nghia, Warrilow (2012) identified four components that are relevant to TL, including charisma or idealized influence, inspirational motivation, intellectual stimulation, and personal and individual attention. This supports the assumptions of Burns (1978), who introduced the concept of transformational leadership. Burns emphasized that a leader can be described as transformational if he or she engages with followers and raises one another to higher levels of motivation and morality, which are defined in the four components of TL. This stimulates a higher level of individual and organizational performance (Burns, 1978).

Idealized influence requires leaders to act as role models by displaying convictions and taking stands that provide a sense of mission and vision for followers' trust and respect. Exhibiting such attributes will enable followers to identify with their leader, which enhances employee engagement (Maina et al., 2021). Inspirational motivation requires the leader to show optimism about followers' abilities, create a sense of purpose and shared vision, and encourage team spirit, which is essential for achieving sustainable innovation

(Koeslag-Kreunen et al., 2021). Intellectual stimulation requires that leaders challenge assumptions, take risks, and help followers think outside the box (Koeslag-Kreunen et al., 2021). They provide stimulation, creativity, and innovation in organizations or institutions. Leaders entertain new ideas and easily adapt to new situations. This stimulates creativity in followers (Bakker et al., 2022). Personal and individual attention requires leaders to acknowledge every follower's needs, provide support and empathy, and consider the individual's talents, background, and situation. This creates a sense of belonging, self-confidence, and self-worth. Applying this theory to a school system, Abbasi and Zamani-Miandashti (2013) found a positive correlation between transformational leadership, organizational learning, and the performance of teachers. A similar study by Alzoraiki et al. (2023) revealed a positive effect of transformational leadership on teachers' commitment and sustainable teaching performance, while the research by Nurtjahjani et al. (2019) recommends transformational leaders function as role models and build confidence and pride in staff to inspire them to higher productivity.

Sustainability examines the continuous improvement of a system in all its aspects, taking into account the organization's goals and objectives. The Brundtland Report of the World Commission on Environment and Development (1987) defines sustainability as "the development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs." Therefore, sustainability may be considered a catalyst for meaningful change in higher education (Purcell &Haddock-Fraser, 2023). But higher education must be transformative and focus on sustainability to lead effective change Martic et al., 2023). There are three major pillars of sustainability: environmental, economic, and social sustainability (Streimikiene et al., 2020). This study focuses on the economic sustainability of higher education, which is determined by indicators associated with the quality of studies, research, and outreach. Higher education is also linked to innovation through its role in the sustainable development (SD) education and implementation process, economic diversification, and knowledge production and transfer. Building innovative cultures within HEIs is essential for restructuring and transforming HE to embrace sustainability (Al-Mansoori & Koç, 2019). Productivity is an economic concept that measures production efficiency. Productivity is commonly defined as the ratio between the volume of inputs and output (Knight, 2018). In this light, sustainable productivity in higher education examines how effective management of the system meets the current and future needs of major stakeholders in higher education in terms of its major objectives of teaching, research, and outreach.

The theoretical framework which guides our study hinges on the works of Fullan (2008), Koeslag-Kreunen et al. (2021), Knight (2018), Carlyon and Branson (2018), and Burner (2018), amongst others. One of the major assumptions of TL is to enable leaders to handle change and sustain growth in employees, which is captured in Fullan's Six Secrets Theory on Educational Change. The six secrets provide ways in which leaders can help organizations survive and thrive, bearing in mind that change is inevitable. Therefore, this study employed the six secrets of educational change to explain how leaders effectively implement change in higher education with respect to the four components of transformational leadership (idealized influence, inspirational motivation, intellectual stimulation, and personal and individual attention). These include (1) loving their staff, (2) connecting peers with purpose, (3) promoting capacity building, (4) creating a learning environment, (5) imbibing the transparency rule, and (6) systems learning (Fullan, 2011). According to Fullan (2008), these secrets can help leaders bring about large-scale and substantial change in education reform in universities. The purpose of educational change is to improve institutions (Burner, 2018), which is most often determined by society's changing needs. Amanchukwu and Daminabo (2014) have previously used Fullan's six secrets of educational

change in Nigeria's school system. They observed that there were complexities in the change process that impacted the effectiveness and quality of education. Further research was conducted by Carlyon and Branson (2018), using Fullan's theory to show how educational leaders in primary schools can successfully lead change with an emphasis on the bottom-top approach. They observed that teachers identify elements of transformational leadership as the leadership approach required in the change process. These include the need for school leaders to be aware of perceptions and demands that exist and be responsible for actively providing the necessary support to overcome any challenges that may result; to be aware of and understand some challenges that teachers face in the change process; to have good communication and transparency; and to provide teachers with sufficient time and opportunities that they need to effectively handle change (ibid.).

Methodology

Research design

This study employed a correlational survey with a quantitative approach, which enabled the researcher to collect data from a larger population. This increased the possibility of generalizing the findings to a larger population (Dawadi et al., 2021). This approach provides a better understanding and examination of the research problem, as well as answers the research questions and objectives.

Sample population

Academic Departments are the technical units of every higher education institution (Wald & Golding, 2019). This is where planning is done to explore new and innovative ways to transform teaching and learning to respond to national and global trends. As such, transformational leadership practices are relevant for Heads of Departments (HODs) for effective implementation of the change process. Education systems need to be built upon strong, up-to-date curricula used in the design of classroom activities based on cutting-edge knowledge of what drives human learning. As such, teachers were relevant to test the transformational leadership skills of the Heads of Department. The sample population consisted of 2745 teachers from state ($n=1692$) and private ($n=1053$) HEIs in Cameroon. Although private HEIs ($n=53$) were more populated than state HEIs ($n=7$), the state HEIs are far more populated with larger student numbers, and most of the teachers in the private HEIs are from state HEIs who provide part-time teaching and adjunct lectureships. This study covers 7 out of the 10 regions of Cameroon, considered the non-crisis region. Data was collected between October 2022 and February 2023. Only accredited private HEIs and state HEIs that have been functional for at least 5 years were considered for the study. Also, only teachers with at least 5 years of teaching experience were selected. This is because experience is pertinent for participants to be able to provide the relevant information for the study. As such, a majority of the teachers sampled ($n=837$) have been teaching for 8–10 years; $n=630$ teachers have been teaching for 5–7 years; and $n=576$ teachers have more than 10 years of teaching experience. We used proportionate sampling to represent HEIs in each region of the study and to determine the number of teachers in each institution. Purposive and snowball sampling techniques were used to select each teacher.

Instrumentation

A Researcher-Designed Questionnaire with 37 closed-ended questions was used to collect data from teachers. This enabled the researchers to test specific sub-indicators of the variables under investigation. This made it easier to analyze and compare the results. The instruments were written in both French and English languages because Cameroon has English, French, and bilingual HEIs. A pilot study was carried out on 100 teachers in the Douala III sub-division, which is part of the population of the study but was not part of the sample population to test for the reliability of the instruments. This was to assess the comprehension and reaction of teachers to make sure that indicators were appropriately assessed. The Cronbach alpha reliability test and the content validity index were used to test for reliability and validity, respectively. Statistics from the reliability analysis show that the internal consistency of participant responses was satisfactory for all variables, with Cronbach coefficient values ranging from 0.811 to 0.897. The overall reliability of the instrument is 0.827, above the recommended threshold of 0.7. Based on this, it was concluded that the questionnaire was good and the findings were reliable.

Empirical analysis

The quantitative data (mostly from closed-ended questions) were analyzed using the statistical package for social science (SPSS) version 25.0, frequency counts, and percentages. Results from the test of normality show that data for all variables were approximately normally distributed (p-value>0.05) except for internal auditors' competence (p-value>0.05). Therefore, using Spearman's test (non-parametric) over the Pearson test (parametric) in finding out the relationship between the sub-variables of transformational leadership and sustainable productivity in higher education was wholly appropriate. A logistic regression model was then used to analyze the factors of transformational leadership that influence the sustainable productivity of higher education institutions. This model has been used by Deaton, Sholz, and Lipka (2019) when the dependent variable is binary as in the current study.

Following Gujurati (1995), the functional form of the logit model is specified as follows:

$$P(Y_1 = 1) = \frac{1}{1 + e^{-(\beta + \alpha X)}} \tag{1}$$

For ease of exposition, the probability for the sustainable productivity of a higher institute of learning is expressed as follows:

$$P(Y_i = 1) = \frac{1}{1 + e^{-z}} \tag{2}$$

where $P(Y_i=1)$ is the probability that a higher institute of learning is productive, and Z is a function of a vector of n explanatory variables.

Given $\frac{P(Y=1)}{1-p(y=1)} = e^z$ taking natural log on both side yield:

$$Z = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 \beta_4 X_4 + u \tag{3}$$

where Z is the dependent variable which takes the value of 1 if the university is sustainably productive and 0 otherwise, b_0 is an intercept, and b_1 to b_4 are slopes of the model. The explanatory variables X_1 to X_4 represent the determinants of the sustainable productivity

of the higher institute of learning where X_1 = intellectual stimulation, X_2 = individualized consideration, X_3 = inspirational motivation, and X_4 = idealized influence, all measured as binary variables.

Ethical consideration

Participants' consent was solicited before participation. We did not put pressure on participants to participate, as they explicitly read the consent form and gave their consent to participate in the survey. We gave participants a minimum of 1 week and a maximum of 2 weeks to complete the survey. This gave them ample time to read the information sheet and consent form and make their decision whether to participate or not. We ensured the anonymity of participants by excluding their names and personal information from the results presentation. In addition, a letter of authorization and ethical clearance was given by the University of Buea's Division for Research and Publication, where the researchers are attached, to carry out this research project. This guaranteed access to other higher education institutions.

Findings and discussion

The results of teachers' characterization on transformational leadership are presented concerning the four major indicators, that is, idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. We further present a comparative analysis of the practice of transformational leadership in state and private higher education institutions. This comparison is evidenced through descriptive, statistical, correlational, and regression analysis.

Descriptive analyses

Idealized influence

Idealized influence requires leaders to act as role models through the display of convictions and taking stands that provide a sense of mission and vision for followers' trust and respect. Exhibiting such attributes will enable followers to identify with their leader. In the appendix, we collate results (Appendix Tables 4, 5, 6, 7, 8, 9, 10, 11 and 12) that demonstrate the key drivers in the operationalization of transformational leadership for sustainable productivity As shown in Appendix Table 4 majority of the teachers (n = 2529 or 92.2%) reported that the HODs promote mutual respect within the department despite their diversity in culture and abilities, and always make an effort for all staff to understand the goals of the department (n = 1872). While the HOD always discusses the results of staff members on departmental projects (n = 1566), teachers (n = 1764) agreed that the HOD always has a listening ear and promotes self-sacrifice by all, which encourages staff to carry out a task in diverse ways.

In addition, the HOD makes efforts to understand the constraints that teachers face and devise strategies to overcome them. As surmised in Appendix Tables 4, overall 60.4% of teachers indicate that their HOD often acts in an idealized influence manner, while 29.1% report that their HODs sometimes portray such leadership behaviour. Only a few, 8.3%

of teachers, indicate that their HODs rarely portray such leadership behaviour, with 2.2% indicating never. However, while 60.4% of teachers agreed that their HOD practice idealized the influence attribute, this has a slight variation with institutions.

Comparing the teachers' characterization of HOD idealized influence by type of HEIs, teachers from state HEIs (62.2%) rated their HOD to often display idealized leadership behaviours slightly more than those from private HEIs (57.6%) (see Appendix Table 5). This implies that, on average, approximately 60% of HODs in private and public HEIs practice ideal influence. Collaborative decision-making with a sense of mission, trust, and respect provides the opportunity for the leader to understand and promote the professional well-being of teachers for organizational sustainability (Si, 2023). Teachers' engagement is one of the factors that enhances organizational productivity, and HEI leaders must be aware of the organizational context in which teachers can thrive (Van den Hende & Riezebos, 2023). This is more relevant for future academic staff, who are the future of the organization (Bakr & Alfayez, 2021). It provides a sense of belongingness, which encourages constructive participation. This supports Fullan's secret one (love your employees), which requires leaders to be empathic (Fullan, 2008). Maina et al. (2021) indicate a relatively strong correlation ($R = 0.548$) between the practice of idealized influence and employee engagement. Therefore, leaders should demonstrate greater enthusiasm towards their staff, provide them with the necessary support to complete assigned tasks, actively understand their constraints, and collaboratively devise strategies to overcome them.

Inspirational motivation

Inspirational motivation requires the leader to show optimism about followers' abilities, create a sense of purpose, share a vision, and encourage team spirit. The findings in Appendix Table 6 reveal that HODs inspire teachers ($n = 2385$) by providing the relevant materials for them to perform an assigned task, as well as praising hard-working staff ($n = 2358$). The majority of teachers ($n = 2196$; 80%) reported that it is easy to discuss their challenges with the HOD, and he or she uses the success stories of other staff members to inspire them to work hard. Other ways in which HODs inspire teachers are by providing information and opportunities for conferences, study leave, etc. for professional growth ($n = 1368$) and organizing workshops or seminars for teachers to understand and implement new changes ($n = 1260$). In aggregate, findings showed that 38.4% of teachers said their HODs often motivate their staff, whereas 34.4% said sometimes, with 17.5% indicating rarely and 9.7% never (see Appendix Table 6).

Even though 72.8% of the teachers agreed that the HOD often and sometimes inspires teachers, this varies with private and state HEIs. Comparing the teachers' characterization of HOD inspirational motivation by institutions, teachers from State HEIs (39.5%) rated their HODs to often display such transformational leadership behaviours slightly more than those from private HEIs (36.5%). On average, as shown in Appendix Table 7, 38% of HODs use inspirational motivation. This implies that there is less attention given to individual teachers' growth.

Even though the extent of the practice is below average (i.e. 38%), research has shown a significant positive relationship between the inspirational motivations of transformational leadership and organizational performance (Idiko & Obah, 2023). Providing an atmosphere where teachers can easily discuss their challenge with the HOD may help teachers to overcome challenges. By the nature of human beings, recognizing and appreciating the efforts of collaborators motivates and sustains their energy to work harder. This stimulates staff

commitment, which is a major determinant of change implementation (Stack & Wallace, 2023). Also, providing opportunities for staff development is relevant to building self-efficacy in teachers. This reinforces the third secret of educational change, as stated by Fullan (2011), which is that change cannot be effective without the continuous capacity building of staff.

Intellectual stimulation

This requires that leaders challenge assumptions, take risks, and help followers think outside the box. They provide stimulation, creativity, and innovation in organizations or institutions. Leaders entertain new ideas and easily adapt to new situations. This also stimulates creativity in followers. Findings in Appendix Table 8 show that a majority of teachers (69.7%) indicated that their HODs often or sometimes provide opportunities for intellectual stimulation to improve staff productivity. This is mostly done by involving teachers ($n=2484$) in solving departmental problems such as issues relating to teaching and research. While teachers ($n=2250$) are encouraged to use diverse ideas in solving problems in the performance of their duties, HODs encourage group tasks that stimulate critical thinking. To a lesser extent, teachers ($n=1017$; 37%) also have opportunities for professional development, such as participation in a colloquium and academic debate, especially at the departmental level. However, the practice of intellectual stimulation among teachers differs between state and private HEIs. Teachers from state HEIs (38.2%) rated their HODs as often displaying such transformational leadership behaviours slightly more than those from private HEIs (31.2%). On average, only 34.7% of HODs engage in intellectual stimulation and leadership with their teachers (see Appendix Table 9). However, involving collaborators in decision-making provides an opportunity for them to share their ideas, which may contribute to organizational productivity while also supporting individual development.

Previous research has shown that continuous learning improves teachers' performance (Abbasi & Zamani-Miandashti, 2013) and prepares teachers to handle challenges and change effectively and efficiently. According to Fullan (2011), leaders should engage teachers in a learning culture for continuous improvement of practice (secret four). Continuous learning provides opportunities to develop many leaders, which enhances continuity for system improvement (Fullan, 2008).

Individualized consideration

The personal and individual attention of a leader provides support to followers and also acknowledges individual talents. This provides strong connection between the followers and the organization. The findings in Appendix Table 10 revealed that most of the teachers (75.1%) experienced individualized consideration and leadership behaviour from their HODs. This is done by encouraging teachers ($n=2322$) to solve problems relating to completing assigned tasks as a team while they ($n=2269$) receive all the support they need to work effectively.

HODs can encourage teamwork in other ways, such as by organizing social events for staff to interact ($n=1530$) and encouraging coaching activities ($n=1962$) as needed. Most teachers (81.6%) reported that HODs typically recognize and value individual efforts, and they also identify and appreciate individual talents (74.1%). However, this varies with institutions.

Comparing teachers' characterization of HODs with individualized consideration by type of HEIs, 38.6% of teachers from state HEIs and 38.0% of teachers from private HEIs rated their HODs as often displaying such transformational leadership behaviours. On average, 38.3% of HODs practice the individualized consideration form of transformational leadership with their teachers (see Appendix Table 11).

Identifying and appreciating individual talents while encouraging teamwork for collaborators to solve problems or complete assigned tasks is relevant to sustaining the productivity of teachers. According to Fullan (2011), Secret Two for implementing educational change provides the opportunity for employees to connect with a sense of purpose, which supports school improvement. Teamwork fosters socialization among teachers and has the possibility of developing new skills and knowledge. This also provides leaders with the opportunity to identify and benefit from the expertise of team members. This provides insights to effectively organize coaching activities to improve the knowledge and skills of team members, which goes a long way toward sustaining their productivity. Team leadership behaviour encourages team learning, which builds skills in team members to easily handle change and complex tasks (Koeslag-Kreunen et al., 2021). This leads to the construction of new knowledge and solutions, which is key to achieving sustainable innovation (Koeslag-Kreunen et al., 2021).

Econometric analysis

Results from the correlation analysis show that idealized influence significantly, strongly, and positively correlates with sustainable productivity in higher education institutions (R-value$=0.501^{**}$, p-value $0.000 < 0.05$). The results also showed that inspirational motivation significantly, strongly, and positively correlates with sustainable productivity in higher education (R-value$=554^{**}$, p-value $0.000 < 0.05$). In the same trend, the results also showed that individualized consideration significantly, moderately, and positively correlates with sustainable productivity in higher education (R-value$=0.441^{**}$, p-value $0.000 < 0.05$). Finally, the results also showed that intellectual stimulation significantly, strongly, and positively correlates with sustainable productivity in higher education (R-value$=0.589^{**}$, p-value $0.000 < 0.05$) (Table 1).

Thus, the hypothesis that transformational leadership affects sustainable productivity in higher education was accepted. However, intellectual stimulation has the highest impact on sustainable productivity, followed by inspirational motivation, idealized influence, and lastly, individualized consideration. However, as shown in the Appendix Table 12, the descriptive analysis revealed that, on average, HODs practice idealized influence (23%) more than the other indicators. This supports the findings of Idiko and Obah (2023), who observed a significant positive relationship between idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration of transformational leadership and organizational performance. Kadiyono et al. (2020) also found a positive and significant relationship between the practice of transformational leadership and teachers' performance in Indonesia. Table 2 shows the summary statistics of the regression variables.

From Table 2, the mean value of sustainable productivity for state HEIs is 0.807, which is less than the mean value for private HEIs in Cameroon (0.867). This finding shows that the management of private HEIs in Cameroon is more sustainable as compared to state HEIs. Also, the mean value for intellectual stimulation for the sustainable productivity of higher institutes of learning is higher for the private (0.776) as compared to that of the state (0.740), showing that intellectual stimulation is more used in private HEIs to improve their productivity than in the state-owned HEIs in Cameroon.

Table 1 Relationship between indicators of transformational leadership on sustainable productivity in higher education

	Variables		Sustainable productivity in higher education
Spearman's rho	Idealized influence	R-value	0.501[**]
		p-value	0.000
		N	2745
	Inspirational motivation	R-value	0.554[**]
		p-value	0.000
		N	2745
	Intellectual stimulation	R-value	0.589[**]
		p-value	0.000
		N	2745
	Individualized consideration	R-value	0.441[**]
		p-value	0.000
		N	2745

**Correlation is significant at the 0.01 level (2-tailed)

Table 2 Summary statistics of regression variables

Variables	Combined sample	State HEIs	Private HEIs
Outcome variables			
Sustainable productivity of universities (1/0)	0.849 (0.357)	0.807 (0.394)	0.867 (0.55)
Control variables			
Intellectual stimulation (1/0)	0.740 (0.438)	0.7074 (0.455)	0.776 (0.96)
Individualized consideration (1/0)	0.826 (0.379)	0.978 (0.146)	0.884 (0.41)
Inspirational motivation (1/0)	0.879 (0.326)	0.911 (0.284)	0.889 (0.22)
Idealized influence (1/0)	0.926 (0.261)	0.802 (0.398)	0.967 (0.09)

Standard deviation in parentheses

More so, individualized influence for sustainable productivity of HE in Cameroon is higher for private HEIs (0.967) as compared to that of state HEIs (0.802). This finding implies that the use of individual influence to improve the productivity of higher learning institutes is more common in private HEIs than in state HEIs. Meanwhile, the mean value of inspirational motivation for sustainable productivity of higher institutes of learning is higher for the state (0.911) as compared to that of the private HEIs (0.889). This finding shows that the use of inspirational motivation to improve the productivity of higher institutes of learning is more common in state HEIs than in private HEIs.

Again, the mean value for individualized consideration for the sustainable productivity of higher institutes of learning is higher for state HEIs (0.978) as compared to that of private HEIs (0.884). This result shows that individualized consideration is more effective in improving the productivity of state HEIs as compared to private HEIs in Cameroon. Furthermore, the mean value of idealized influence for private HEIs is 0.967, while that of state HEIs is 0.802. This suggests that private HEIs in Cameroon use idealized influence more frequently to boost higher education productivity than do state HEIs.

Table 3 presents the results of the main factors that influence the sustainable productivity of higher institutes of learning in Cameroon. The coefficient of individual consideration for the combined sample (0.914) is positive and it is statistically significant at the 1% level of probability. The findings imply that an increase in individualized consideration will lead to an increase in the sustainable productivity of higher institutes of learning in Cameroon. These findings indicate that a 1 unit increase in individualized consideration will increase the probability of sustainable productivity in universities by 0.914. For private and state universities, their coefficients are positive (1.559) and (1.050), respectively, and statistically significant at the 1% level of probability, indicating that individualized consideration has a significant probable effect on the sustainable productivity of both universities.

The coefficient of inspirational motivation (0.472) is positive and statistically significant at the 1% level of probability for the combined sample. These findings imply that inspirational motivation has a positive effect on the sustainable productivity of universities in Cameroon. This also indicates that a 1 unit increase in inspirational motivation increases the probability of the sustainable productivity of universities by 0.472. For private and state universities, the coefficients are positive (0.932) and (1.056), respectively, and statistically significant at the 1% level of probability.

Again, the intellectual stimulation coefficient (0.378) is positive and statistically significant at the 1% level of probability for the combined sample. These findings imply that an increase in intellectual stimulation increases the sustainable productivity of universities in Cameroon. This also indicates that a 1 unit increase in intellectual stimulation will increase the probability of the sustainable productivity of universities by 0.378. For the private universities, the coefficient (0.477) is positive and statistically significant at the 5% level of probability, while for the state universities, the coefficient (1.214) is positive and statistically significant at the 1% level of probability. These findings show that intellectual stimulation has a greater impact on state universities as compared to private universities in Cameroon.

Table 3 Logistic regression results of the factors that influence the sustainable productivity of higher institutes of learning in Cameroon

Variables	Combined sample	State universities	Private universities
Individualize consideration	0.914***	1.549***	1.052***
	(0.122)	(0.423)	(0.201)
Inspirational motivation	0.472***	0.932**	1.056***
	(0.142)	(0.467)	(0.383)
Intellectual stimulation	0.378**	1.214***	0.477**
	(0.159)	(0.414)	(0.235)
Idealize influence	2.077***	-0.502	0.571**
	(0.170)	(0.415)	(0.225)
Constant	− 1.584***	1.534***	− 1.601***
	(0.216)	(0.501)	(0.443)
LR test	331.270	29.710	49.880
Prob > chi2	0.000	0.000	0.000
Pseudo $R2$	0.140	0.084	0.044
Observations	2699	1637	1062

***, **, and * indicate statistical significance at the 1, 5, and 10% critical levels, respectively

More so, the coefficient of idealized influence (2.077) is positive and statistically significant at the 1% level of probability for the combined sample. These findings indicate that an increase in idealized influence will lead to an increase in the sustainable productivity of universities in Cameroon. For private universities, the coefficient (0.571) is positive and statistically significant at the 5% level of probability. This implies that for private universities in Cameroon, a 1 unit increase in idealized influence increases the probability of higher sustainable productivity by 0.571. For the state universities, the coefficient is negative and not statistically significant.

While the correlational analysis showed that intellectual stimulation has the strongest correlation effect on sustainable productivity, the regression analysis showed that inspirational motivation has more value-added for productivity. This suggests that HODs can sustain productivity by acknowledging and praising teachers' efforts, ensuring they have the necessary resources for their tasks, and offering staff development opportunities like conferences, study leave, workshops, and seminars. While teachers are motivated when acknowledged and praised, opportunities for staff development improve the knowledge and skills of teachers to perform their job effectively and efficiently. However, the descriptive analysis showed that a lesser percentage of HODs (38%) practice the inspirational motivation form of transformational leadership, yet it has a higher impact on sustaining productivity. This supports the work of Al-Hussseini and Elbeltagi (2016), who found that TL practice improves innovation in public and private HEIs. However, leaders need continuous professional development for a successful outcome (Tran & Nghia, 2020).

Based on our findings, we therefore propose a leadership model summarized in Fig. 1 for sustaining productivity. We suggest collaboration to be at the heart of effective transformational leadership practice. Collaborative practices are the strength of any organization that can easily adapt to inevitable change. Rather than providing solutions to all problems, leaders are called to create opportunities for collaborators to effectively participate in decision-making while respecting the diversity of culture, knowledge, and skills. This requires a leader to share their vision with followers, motivate them, provide a strategy for sustaining change, create a feeling of trust in followers, ensure effective communication, and provide workers with what it takes (i.e. relevant resources and training) to effect change. This also provides an opportunity for leaders to identify relevant skills in followers that can be integrated for optimal productivity within an organization. The application of the four indicators of transformational leadership is in the order (1–4) of their impact on sustainable productivity, which emanates from the findings of this study.

The PPC/O framework identified in Fig. 1 provides a conducive environment for staff to participate in decision-making, especially in implementing change. Team decisions encourage members to actively contribute to their achievement. Additionally, leaders can identify varied skills in staff through effective collaboration, ensuring optimal utilization of available human resources. However, this presents numerous challenges due to the diverse nature of human resources. Given the lack of formal training for leaders in Cameroon's higher education institutions and the increased responsibilities that accompany their appointment, it is crucial to provide them with training to ensure optimal productivity. In addition to undergoing training, leaders must continuously train their staff to maintain their productivity. Teachers' productivity in any educational institution determines the overall system's productivity. Therefore, developing a strategy to maintain teacher productivity will improve the quality of education provided. This increases access to quality education (SDG 4.3) as well as a sustainable increase in relevant skills in learners (SDG 4.4).
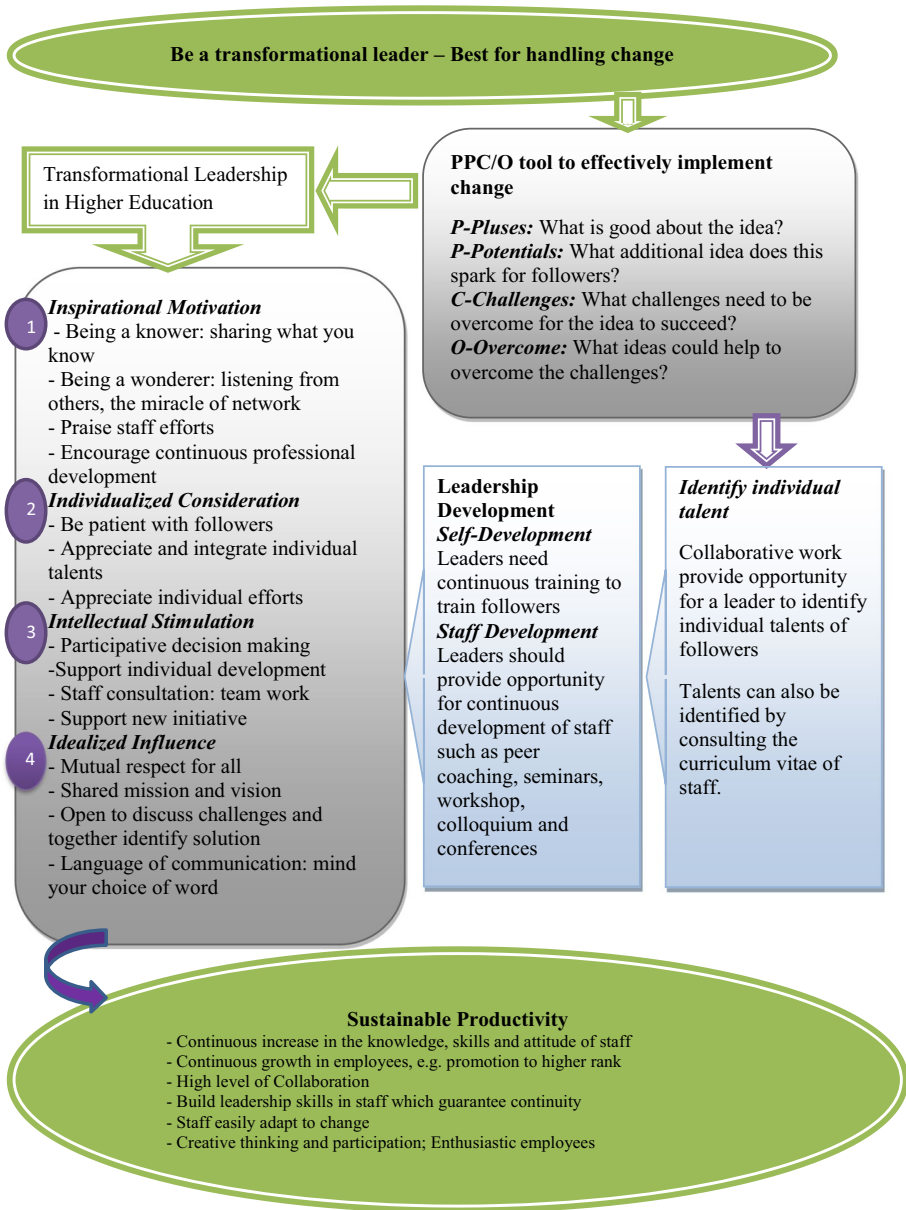
Be a transformational leader – Best for handling change

Transformational Leadership
in Higher Education

PPC/O tool to effectively implement change

P-Pluses: What is good about the idea?
P-Potentials: What additional idea does this spark for followers?
C-Challenges: What challenges need to be overcome for the idea to succeed?
O-Overcome: What ideas could help to overcome the challenges?

1 *Inspirational Motivation*
 - Being a knower: sharing what you know
 - Being a wonderer: listening from others, the miracle of network
 - Praise staff efforts
 - Encourage continuous professional development
2 *Individualized Consideration*
 - Be patient with followers
 - Appreciate and integrate individual talents
 - Appreciate individual efforts
3 *Intellectual Stimulation*
 - Participative decision making
 -Support individual development
 - Staff consultation: team work
 - Support new initiative
4 *Idealized Influence*
 - Mutual respect for all
 - Shared mission and vision
 - Open to discuss challenges and together identify solution
 - Language of communication: mind your choice of word

Leadership Development
Self-Development
Leaders need continuous training to train followers
Staff Development
Leaders should provide opportunity for continuous development of staff such as peer coaching, seminars, workshop, colloquium and conferences

Identify individual talent

Collaborative work provide opportunity for a leader to identify individual talents of followers

Talents can also be identified by consulting the curriculum vitae of staff.

Sustainable Productivity
- Continuous increase in the knowledge, skills and attitude of staff
- Continuous growth in employees, e.g. promotion to higher rank
- High level of Collaboration
- Build leadership skills in staff which guarantee continuity
- Staff easily adapt to change
- Creative thinking and participation; Enthusiastic employees

Fig. 1 Proposed leadership model for sustaining organizational productivity

Conclusion

This study investigated how HODs' transformational leadership practice sustains the productivity of higher education institutions in Cameroon. The departments, as the university's technical unit, call for HODs to be transformational leaders. We investigated the four components of transformational leadership, which include idealized influence, inspirational motivation, intellectual

stimulation, and individual. The findings revealed that all four components of transformational leadership had a positive and significant correlation with sustainable productivity in public and private higher education institutions. While this practice is relatively more common in public than private institutions, inspirational motivation has a greater impact on productivity, followed by individualized consideration, intellectual stimulation, and lastly, idealized influence.

The practice of transformational leadership improves individual and organizational growth; it provides an opportunity for individuals to learn and grow at work. The effective practice of transformational leadership enhances continuous growth in followers, which can be seen in their behaviour, knowledge, and skills at the individual and team levels. In transformational leadership, leaders are expected to answer one big question: What has changed since I was appointed to my current position? Therefore, we recommend that higher education institutions utilize the prescribed model in Fig. 1 to enhance their transformational leadership practices for continuous improvement. The results of ourstudy are relevant to HE leaders and administrators in terms of the various ways of handling change. Leaders are able to understand not only the need to train leaders for sustainable productivity, but also how to use existing human resources for optimal productivity.

This study was, however, limited to the four components of transformational leadership and sustainable productivity in higher education institutions in Cameroon which pose a limitation for generalization. Other variables that can possibly affect productivity were not controlled which is a limitation because it would have provided more information for recommendations and suggestions for further research. Research to test other leadership models is relevant for a comparative analysis. This can be done in Cameroon and similar economies.

Appendix A. Tables of operationalization of all indicators of transformational leadership and sustainable productivity

Table 4 Teachers characterization of HOD idealized influence attributes

Items	Often	Sometimes	Rarely	Never	n
The HOD promotes mutual respect within the department taking into consideration our different background and abilities	1926 (70.2%)	603 (22.0%)	171 (6.2%)	45 (1.6%)	2745
My HOD makes efforts for all staff to understand goals of the department	1872 (68.2%)	684 (24.9%)	162 (5.9%)	27 (1.0%)	2745
The HOD promotes self-sacrifice by all	1629 (59.3%)	729 (26.6%)	342 (12.5%)	45 (1.6%)	2745
The HOD always has a listening ear	1764 (64.3%)	720 (26.2%)	216 (7.9%)	45 (1.6%)	2745
My HOD discusses and consults staff members on departmental projects	1566 (57.0%)	882 (32.1%)	162 (5.9%)	135 (4.9%)	2745
Lecturers are encouraged to carry out tasks in diverse ways	1449 (52.8%)	945 (34.4%)	315 (11.5%)	36 (1.3%)	2745
The HOD understands constraints, and work out strategies to overcome	1404 (51.1%)	1026 (37.4%)	234 (8.5%)	81 (3.0%)	2745
Multiple Response Set (MRS)	**11,610 (60.4%)**	**5589 (29.1%)**	**1602 (8.3%)**	**414 (2.2%)**	**19,215**

Table 5 Comparing teachers' characterisation of HOD idealised influence by institution

Type of HEIs		Idealised influence by heads of department				Total
		Often	Sometimes	Rarely	Never	
State	N	1052	436	161	43	1692
	%	62.2%	25.8%	9.5%	2.6%	
Private	N	607	362	68	16	1053
	%	57.6%	34.4%	6.5%	1.5%	
Total	N	1659	798	229	59	2745

Table 6 Teachers characterisation of HOD inspirational motivation

Items	Often	Sometimes	Rarely	Never	n
It is easy to discuss challenges with the HOD	1440 (52.5%)	756 (27.5%)	351 (12.8%)	198 (7.2%)	2745
The HOD praises hardworking staff	1350 (49.2%)	1008 (36.7%)	279 (10.2%)	108 (3.9%)	2745
The HOD recognizes the efforts of all staff members	1341 (48.9%)	1044 (38.0%)	270 (9.8%)	90 (3.3%)	2745
The HOD ensures all necessary materials are available to perform assigned tasks	1125 (41.0%)	1161 (42.3%)	378 (13.8%)	81 (3.0%)	2745
The HOD uses success stories as examples to inspire staff	981 (35.7%)	918 (33.4%)	585 (21.3%)	261 (9.5%)	2745
The HOD provides opportunities for conferences, study leave, etc. for the professional growth of staff	630 (23.0%)	738 (26.9%)	747 (27.2%)	630 (23.0%)	2745
The HOD organizes seminars/workshops for teachers to understand and implement new changes	504 (18.4%)	981 (35.7%)	756 (27.5%)	504 (18.4%)	2745
Multiple Response Set (MRS)	**7371 (38.4%)**	**6606 (34.4%)**	**3366 (17.5%)**	**1872 (9.7%)**	**19,215**

Table 7 Comparing teachers' characterisation of HOD inspirational motivation institution

Type of HEIs		Inspirational motivation by heads of department				Total
		Often	Sometimes	Rarely	Never	
State	N	669	562	284	177	1692
	%	39.5%	33.2%	16.8%	10.5%	
Private	N	384	382	197	90	1053
	%	36.5%	36.3%	18.7%	8.5%	
Total	N	1053	944	481	267	2745

Table 8 Teachers opinion of HOD intellectual stimulation

Items	Often	Sometimes	Rarely	Never	n
I participate in solving problems (teaching, research, etc.) in the department	1629 (59.3%)	855 (31.1%)	144 (5.2%)	117 (4.3%)	2745
New ideas are usually welcome in solving problems related to performing tasks	1215 (44.3%)	1035 (37.7%)	360 (13.1%)	135 (4.9%)	2745
The HOD support lecturers to take opportunities for self-development (e.g., education and training)	999 (36.4%)	1008 (36.7%)	504 (18.4%)	234 (8.5%)	2745
The HOD encourages group tasks which stimulates critical thinking	990 (36.1%)	1089 (39.7%)	459 (16.7%)	207 (7.5%)	2745
The HOD with the staff/lecturers evaluates the outcome of a project/activity to make recommendations for improvement	990 (36.1%)	954 (34.8%)	567 (20.7%)	234 (8.5%)	2745
The HOD provides learning resources to lecturers for self-development	666 (24.3%)	963 (35.1%)	738 (26.9%)	378 (13.8%)	2745
The HOD organizes a colloquium/debate for professional growth of staff	333 (12.1%)	684 (24.9%)	1062 (38.7%)	666 (24.3%)	2745
Multiple Response Set (MRS)	**6822 (35.5%)**	**6588 (34.3%)**	**3834 (20.0%)**	**1971 (10.3%)**	**19,215**

Table 9 Comparing teachers' characterisation of HOD intellectual stimulation by institution

Type of HEIs		Intellectual stimulation by heads of department				Total
		Often	Sometimes	Rarely	Never	
State	N	646	526	323	197	1692
	%	38.2%	31.1%	19.1%	11.6%	
Private	N	329	417	221	86	1053
	%	31.2%	39.6%	21.0%	8.2%	
Total	N	975	943	544	283	2745

Table 10 Teachers opinion of HOD individualised consideration

Items	Often	Sometimes	Rarely	Never	n
Team work is encouraged for teachers to solve problem or complete assigned tasks	1332 (48.5%)	990 (36.1%)	261 (9.5%)	162 (5.9%)	2745
My efforts are usually appreciated by the HOD	1242 (45.2%)	999 (36.4%)	351 (12.8%)	153 (5.6%)	2745
Individual talents are identified and appreciated	1116 (40.7%)	918 (33.4%)	486 (17.7%)	225 (8.2%)	2745
Staff members receive all the assistance they need to perform their functions effectively from the HOD	1026 (37.4%)	1242 (45.2%)	360 (13.1%)	117 (4.3%)	2745
The HOD organizes social events to encourage team-building amongst staff	711 (25.9%)	819 (29.8%)	756 (27.5%)	459 (16.7%)	2745
More knowledgeable staff usually coached the less knowledgeable ones as the need arises	891 (32.5%)	1071 (39.0%)	522 (19.0%)	261 (9.5%)	2745
Multiple Response Set (MRS)	**6318 (38.4%)**	**6039 (36.7%)**	**2736 (16.6%)**	**1377 (8.4%)**	**16,470**

Table 11 Comparing teachers' characterisation of hod individualised consideration institution

Type of HEIs		Individualised consideration by heads of department				Total
		Often	Sometimes	Rarely	Never	
State	N	653	599	268	172	1692
	%	38.6%	35.4%	15.9%	10.2%	
Private	N	400	409	187	57	1053
	%	38.0%	38.7%	17.8%	5.4%	
Total	N	1053	1008	455	229	2745

Table 12 Sustainable productivity in higher education

Items	Strongly Agree	Agree	Disagree	Strongly Disagree	n
I have the relevant knowledge and skills to perform my duties (teaching and research)	2079 (75.7%)	630 (23.0%)	27 (1.0%)	9 (0.3%)	2745
I am enthusiastic in performing my tasks which has improved students' outcomes	2025 (73.8%)	648 (23.6%)	72 (2.6%)	0 (0.0%)	2745
I easily adapt to changes with respect to policy development and implementation	1368 (49.8%)	1215 (44.3%)	126 (4.6%)	36 (1.3%)	2745
Collaboration among colleagues have built relevant knowledge and skills in teachers	1368 (49.8%)	1143 (41.6%)	162 (5.9%)	72 (2.6%)	2745
There is continuous growth of teachers in the department in terms of knowledge skills in performing assigned tasks	1071 (39.0%)	1269 (46.2%)	306 (11.1%)	99 (3.6%)	2745
I am involved in many research activities in and out of the department/institution	1062 (38.7%)	1215 (44.3%)	360 (13.1%)	108 (3.9%)	2745
Staff in my department after meeting all requirements easily gets promoted to higher grades (e.g., Lecturer, Professor, etc.)	990 (36.1%)	1035 (37.7%)	477 (17.4%)	243 (8.9%)	2745
There is significant increase in publications among teachers	801 (29.2%)	1071 (39.0%)	621 (22.6%)	252 (9.2%)	2745
Multiple Response Set (MRS)	**10,764 (49.0%)**	**8226 (37.5%)**	**2151 (9.8%)**	**819 (3.7%)**	**21,960**

Declarations

Conflict of interest The authors declare no competing interests.

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