

Research Article

Evaluation of the effectiveness of the collegiate system of administration at Kwame Nkrumah University of Science and Technology, Ghana

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In order to ensure synchronization, decentralization, and democratization of operations as well as the devolution of power, the collegiate system of administration was implemented in the Kwame Nkrumah University of Science and Technology (KNUST). It is anticipated that it will assist in the decision-making and execution processes to combat the bureaucratic issues related to the faculty system of administration. The study seeks to evaluate the effectiveness of the collegiate system of administration and the challenges associated with it. The study used a mixed method to solicit data. Data was gathered using a structured questionnaire, interviews (Provost, Deans, Heads of Department, Deputy registrars, Accountants, and Librarians) as well as data from secondary sources. Data from each source were analysed descriptively. The study revealed that the collegiate system had cultivated a strong feeling of engagement, and the system has helped towards academic and administrative leadership that deserves a more concentrated focus, and the style of administration has been successful in increasing the scope of operations in the colleges. Appropriate recommendations have been given to reduce the challenges identified.

Introduction

As a public sector reform strategy, decentralizing administration has drawn significant interest on a global scale. The majority of nations have taken official action in the last ten years to encourage governmental institutions and organizations to adopt the idea of decentralization as a means of

assisting those institutions and organizations in achieving their stated aims. (Smoke,2015). The decision to decentralize an institution's administrative system has received support in Sub-Saharan Africa because it is seen as an effective, efficient, accountable, and democratic system of administration (Gershberg & Winkler, 2004). Additionally, a decentralized administrative system may eliminate the bureaucracy, inefficiencies, and financial waste of a centralized administrative system and provide a structure that leads to greater accountability, responsiveness, and transparency. The majority of decentralization choices, according to critics, are made with the purpose of dispersing financial responsibilities (Hanson, 1997).

It is necessary to constantly monitor the system in place to ensure an equal impact on our social, economic, and political structures and organizations. The institution or organization may become irrelevant to the circumstances of the day and eventually fail if it does not adapt to the demands of a complex, quickly changing society (Stembert & Dykes 2018). Every academic institution's performance is mostly dependent on two factors: the effectiveness of the management system and the standard of instruction. Due to these factors, every educational institution strives to provide effective and efficient services to its stakeholders (Kelly, 2010). Public universities, like any other organization, constantly search for more effective ways to carry out their administrative duties in accordance with these principles. Therefore, the majority of well-known public universities throughout the globe are switching from the conventional centralized style of administration to a more decentralized system, which is why certain public institutions in Ghana have implemented the collegiate system (Hanson, 1998).

The collegiate system is a common administrative practice found mostly in the system of administration in higher education. A collegiate system means that a university is split into a number of different colleges that form smaller academic communities. Each college has its own distinctive character and opportunities, which offers students a deep sense of identity and community whilst at university. All staff and students become members of a college when they join the University. College administration plays an important role in the long-term development of colleges and universities. The collegiate structure fosters a deep sense of identity by drawing together leading scholars and students from various disciplines and year groups, as well as from various cultures and nations (Billups and Ed, 2011). Since colleges are comparatively limited in number, the direct and positive personal focus may be given to individual students' academic growth and well-being (Leithwood *et al.*, 2007). Effective decentralised higher education administration, as epitomised under the collegiate administrative set-

up, not only gives full play to the value of university resources, but also makes the implementation of the rules and regulations effective (Zhou et al. 2020).

However, from the current point of view of Zhou et al., (2020) many universities as a higher education system, are undergoing a series of contextual changes. The main trends are the expansion and diversification of the systems of teaching and learning, student heterogeneity, incorporation of new technologies, new forms of governance and financing, and redefinition of the competency of graduates. Additionally, there is a growing demand for accountability, as well as the development of global networks for student mobility and collaboration, and inter-agency cooperation within the framework of globalization (Atria, 2012). Many universities in Ghana had a faculty or a centralised system of administration. However, due to the new trends, expansion and diversification of the university system, there was a need for the decentralisation of the administrative system. It is in this regard that the Kwame Nkrumah University of Science and Technology (KNUST) decided to institutionalise the collegiate system of administration.

The Kwame Nkrumah University of Science and Technology succeeded the Kumasi College of Technology, which was created on October 6, 1951, by a Government Ordinance. Until it became a full-fledged university in 1961, the university expanded and underwent significant changes, with the establishment of the School of Engineering and the Department of Commerce in 1952. The Departments of Pharmacy and Agriculture were also established in 1953, the Department of Architecture, Town Planning and Building in 1957, and later the Faculty of Applied Science in 1965 (Essel and Lamptey, 2020). As the college grew in size, the government agreed to transform it into a pure science and technology institution. As a result, the Kumasi College of Technology was elevated to the status of a university. Among the primary goals were to promote teaching, learning and research, as well as to produce the required and requisite manpower for Ghana's science and technological advancement. According to Essel and Lamptey, 2020, the university operated under the Departmental and Faculty based administration from 1965 to 2004 before the establishment of the collegiate system. The then university structure in terms of teaching, learning, and science infrastructure could not match the upsurge in the university's enrolment. The attending problems range from academic, administrative, and financial challenges, hence, the need to be pragmatic with administrative systems that are decentralised in order to meet the demands of the increasing student population. To achieve synchronization, decentralization, and democratization of operations as well as the devolution of power, the collegiate system of administration was formed at KNUST.

The collegiate system of administration was adopted by KNUST in December 2004 under Professor Kwasi Andam's administration as Vice-Chancellor. One of his visions after assuming office as Vice-Chancellor of KNUST in October 2002 was to restructure and re-organise the university's faculties into six (6) colleges, to enable them to become more effective and focused in the conduct of university business. Prior to the implementation of the collegiate system, a situational evaluation was performed to determine the university's strengths and weaknesses. The main weaknesses were insufficient funding and inefficient budget distribution for academic programmes. As a result, facilities, remuneration and operating conditions for workers, housing, staffing, and inter-faculty cooperation have all been affected.

The KNUST Strategic PLAN2K14 aimed to streamline the university into six compact and focused colleges (KNUST Strategic PLAN2K14-25). The collegiate system took effect officially, in December 2004, and the Plan aimed to address the university's academic and administrative challenges. These colleges included Agriculture and Natural Resources, Architecture and Planning, Art and Social Sciences, Engineering, Health Sciences and Science. As stated in the PLAN2K14, the colleges are "the building blocks of the university". They constitute the main pillars for the realisation of the university's strategic objectives, which are human resource development, training, research and innovation, physical infrastructure development, expansion and application of ICT, and financial resource mobilization and management.

Administrators at colleges and universities play an important role in administrative management and development (Billups and Ed, 2011). Effective management not only maximizes the efficiency of university services but also ensures that laws and regulations are followed. University administrators have long had mixed emotions about the success of the collegiate structure and its significance in the university environment. Some administrators believe the collegiate system has received little to no priority in the university environment (Billups and Ed, 2011; Of *et al.*, 2012). The University had decentralised its composite administrative tasks out of necessity. After fifteen years of implicit decentralization, this collegiate system that promotes the granting of autonomy to different colleges is worth investigating. In order to assess the innovation and development of university administration, it is necessary to conduct a thorough study of the collegiate system of the university with the aim of assessing the efficiency of the system in KNUST.

The success of the collegiate system and its significance in the university setting has long been the subject of conflicting opinions in the university administration. KNUST was the first university in

Ghana to have started the collegiate system of administration. Currently, there are other public universities, like the University of Ghana, and the University of Cape Coast, that have opted for the collegiate systems. Studies by Ogunsanwo (1983), Ogunmodede (1985), and Olutade (2005) showed that research on university administration has centred mostly on isolated administrative styles, such as the use of the committee system and other systems approach, among others. There has been little or no thorough investigation on the administrative process evident in the collegiate system in the universities that have operated the system since its introduction in 2005 in Ghana.

Therefore this study seeks to evaluate the effectiveness of the collegiate system of administration in KNUST by assessing its ability to accelerate the decision-making and implementation process and identifying challenges that impede its improvement. The significance of this study lies in its potential to provide recommendations for improving the administrative system for management in universities and other educational institutions and regulatory bodies in Ghana, such as the Ghana Tertiary Education Commission. Furthermore, this research will aid policy development for higher education in Ghana by providing solutions to the issues present in the general administration of universities and will act as a reference point for public and private universities, including university actors, in maintaining an effective collegiate administrative system.

Literature Review

The collegiate system, which originated in Western Europe (Coban, 1975), is extensively used in universities worldwide (Tianxiang *et al.*, 2018). The collegiate system is so popular because the system enhances the adherence and vitality of the institution and provides practitioners with a unique viewpoint on managing student services (Tianxiang *et al.*, 2018). The collegiate system is an innovative educational reform approach that is more consistent with the development of students' potential and abilities (Tianxiang *et al.*, 2018). Collegiality is a current, efficient and practical form of administration that interacts with other modes of administration (Sahlin and Eriksson-Zetterquist, 2016). According to Sahlin and Eriksson-Zetterquist (2016), some parts of the collegiate system include the formal framework that makes up a collegial decision-making system, which involves the function of academic leaders and how they are selected, as well as the use of peer review for advancement, research funding, and publishing.

The universities of Oxford and Cambridge, England's two historic universities, both began without colleges. A review of the University of Oxford's college system reveals that it is one of the many

distinctive and exceptional elements of student life at Oxford. Oxford's colleges are self-governing and autonomous, with a federal relationship with the University. This collegiate structure is crucial to the University's success. The colleges offer assistance, resources, and membership in a welcoming and exciting student environment. Through the collegiate system, this connection between students and academic tutors has shown to be a successful and useful source of support for the students' academic lives (Oxford-University, 2021).

Faculties, Departments, and Colleges are also key parts of the University of Cambridge's structure. The Colleges operate under their own set of rules and regulations. Students interact in 31 independent Colleges at the University. This methodology, according to the University, allows students to experience College supervision and small group teaching sessions, which are recognized as one of the greatest teaching models in the world (Cambridge University, 2021). Each College has its own internal processes that are governed by university policies. Admission of both undergraduate and postgraduate students is one of these processes. (Cambridge University, 2021). The University of London also operates as a federal university with 17 constituent institutes. Most practical functions, ranging from admissions to finance, are handled by the member colleges on a semi-independent basis, with several awarding their own degrees while being part of the federal university. (University of London, 2021). The University of London additionally maintains three Central Academic Bodies: The School of Advanced Study, the University of London Institute in Paris (ULIP), and the University of London Worldwide, which are not colleges but are under the direct jurisdiction of the central University (University-of-London, 2021). This system has significantly aided the university's expansion.

According to Urbanek, (2020), One of the most significant developments in the reforms of the Polish higher education system has been the redefining of the function of the university's governing bodies under the collegiate system. The system has been shown to strengthen the rector's position and uphold the idea of institutional autonomy, which implies that universities can freely develop chosen components of their system, particularly those linked with the principles of basic unit functioning (Urbanek, 2020). Tianxiang *et al.*, (2018) are of the view that the Collegiate system has shown to be beneficial in certain institutions, however, some residual issues persist in the collection and manipulation of student information which render the system ineffective. Despite the fact that big data and artificial intelligence are rapidly developing, the increased number of departments and staff members under the system makes it difficult to manage and even reduces administrative efficiency. Again, Okoli and Orinya (2021) state that, there appears to be a tradition of management-faculty

relationships that undermine the collegial culture, weakening institutional autonomy and academic freedom.

Burnes and Wend (2015), are of the view that a new form of collegiality for the twenty-first century should be developed in order to create a win-win situation in which administrators can implement their decisions more effectively. Collegialism, which relates to the concept of peer academic leadership, is one of the most renowned and cherished values of the university community in Nigeria (Okoli and Orinya, 2021). This serves as an operational concept in a perfect university, where professors and academia have a vested interest in institutional decision-making.

Methodology

The target population for the study comprised the Provosts, Deputy Registrars, Deputy Finance Officers, Deputy Librarians, Deans, and Heads of academic departments in the university. The target population were 151 (Provosts – 7, Deputy Registrar – 20, Deputy Finance Officer – 6, Deputy Librarians, – 3, Deans – 18, Heads of Department – 97). The sample for this study was selected using a purposive sampling technique. A questionnaire was designed to solicit respondents' opinions on the effectiveness of the collegiate administrative structure in decision-making, policy execution, coordination of relevant disciplines, decentralization of operations, and the scope of activity in the college. In addition to the questionnaire, interviews were conducted. 5 (Provosts, Deputy Registrars, Deputy Finance Officers, Deputy Librarians, and Deans) of the targeted respondents were interviewed to gain an in-depth understanding of the situation. The information gathered was analyzed using frequency counts, ratios, means, standard deviation and chi-square. A questionnaire was pre-tested on five registrars for validation.

Analysis and Discussion

The section focuses on the analysis and discussion of the results of the study. The main objective of the study is to review the effectiveness of the collegiate administration framework as a tool for decision-making and also identify challenges that are impeding the improvement of the university collegiate administration system. A formal questionnaire was administered, and there were 32 respondents from the survey. Out of the 32 respondents, 26 were males representing 81.3%, while the female respondents were only 6 representing 18.8%.

Table 1 below gives a 2-by-2 contingency table or cross-tabulation of staff category and gender. The results indicate that 50% of male respondents were teaching staff, and 31.25% were non-teaching staff. Of the female respondents, 3.125% were teaching staff, while 15.625% represented non-teaching staff.

	Teaching Staff	Non-Teaching Staff	Total
Males	16(50%)	10(31.25%)	26(81.25%)
Females	1(3.125%)	5(15.625%)	6(18.75%)
Total	17(53.125%)	15(46.875%)	32(100%)

Table 1. 2 by 2 Contingency table

() = relative frequency

Fig. 2 shows a graph of the educational qualification of respondents. The results indicate there were more PhD respondents, which is 53.1%. However, none of the respondents had their highest educational qualification to be a bachelor's degree or HND. This is typical in a university setting since most of those in authority and administrative positions are professional and academic staff with master's and doctoral degrees.

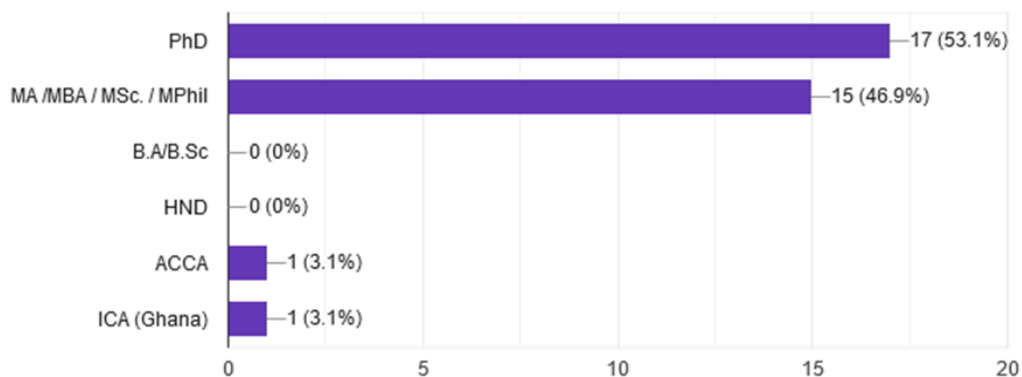


Fig. 1. Graph of Educational Qualification

Fig. 3 gives a pie chart of the respondents' colleges. The results indicate that more administrators from the health sciences responded to this survey.

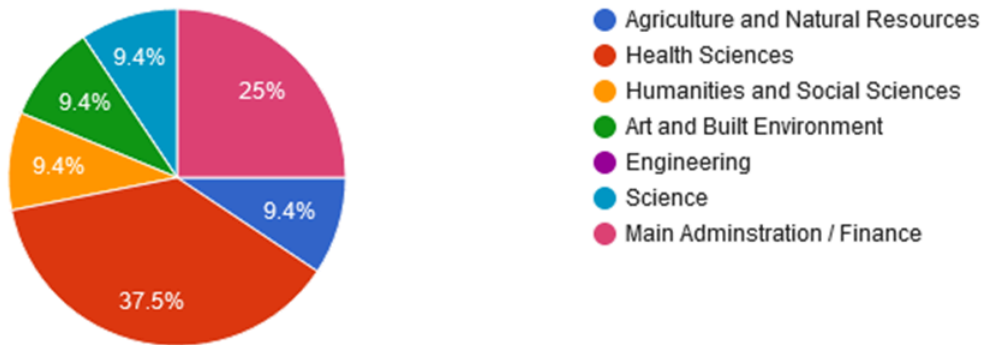


Fig. 2. Pie Chart of Respective Colleges in KNUST

Effectiveness of the collegiate system of administration

The questionnaire solicited information on the effectiveness of the collegiate system of administration

1. Effectiveness of decentralisation and authority in KNUST

The decentralization of university operations and delegation of authority and responsibility are effective as per the responses gathered, whereas the devolution of powers in the collegiate system is fairly effective per the results indicated in Figure 3.

2. Decision

There is fair effectiveness in accelerating the process of decision-making in the collegiate system of KNUST. However, implementation of the decisions taken is effective, as shown in the graph indicating more response in that regard.

3. Enhancement of the image of the University

The collegiate system in KNUST shows more effectiveness in enhancing the image of the respective colleges and the university at large in order to achieve the vision of KNUST. Hence attracting more students to the university and then building the leadership and administrative structure of KNUST.

4. Pursuit of academic objectives of the university

KNUST aims to provide an environment for quality teaching, relevant research and entrepreneurship training in Science and Technology for the industrial and socio-economic development of Ghana and beyond. The collegiate system of administration in the pursuit of this academic objective is very effective as shown in Figure 3. Respondents interviewed also indicated that the “decentralisation has enabled colleges in the university to create efficient laboratories and a conducive environment for teaching, learning and research”.

5. The coordination of various programmes or faculties in the colleges

The results from the graph indicate more effectiveness in the coordination of various programmes or faculties in the colleges since KNUST exists to advance knowledge in science and technology, thereby making every college create and coordinate various programmes in achieving its mission.

6. Management of the finances of the university

The key to the success of most educational institutions is managing the administrative and financial affairs of the institution. It is necessary to have a college finance office to help oversee the growth and advancement of the College in order to ensure the efficient operation of the finance office.

According to Figure 3, the management of finances in the university is effective. However, there are some challenges with regard to the total decentralisation of financial administration in the colleges. Respondents interviewed indicated that the ‘central administration is seen to be in control of the finances in the university’.

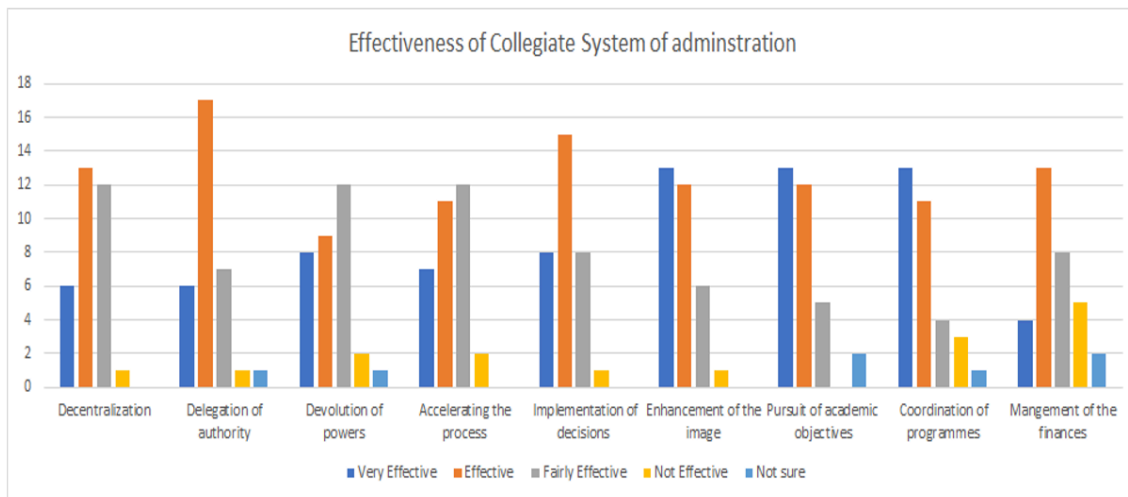


Fig. 3. Effectiveness of the collegiate system

Challenges impeding the collegiate administration structure

The respondents, who are principal officers in the colleges, were asked to describe their experiences with the implementation of the collegiate system administration in KNUST and to identify the difficulties encountered. Four categories of responses are presented,

- Management of finances of the university,
- Coordination of various programmes or faculties in the colleges,
- Implementation and Accelerating the process of decision,
- Devolution of powers and Delegation of authority and responsibility

Management of finances of the university

Financial management is the application of management concepts to budgeting, forecasting, managing, and controlling an organisation's financial resources to achieve its strategic objectives. Some of the identified challenges with regard to the management of the university's finances in the context of the collegiate system are as follows:

- Challenges in accessing international student fees and Ghanaian fee-paying by the colleges since it is centralised.
- Limited expenditure ceilings for college management to operate. ie. the inability of the Provost, Deans and Heads of Department/units to procure items or materials beyond their thresholds

- Lack of uniformity in the implementation of financial decisions in the colleges

The coordination of various programmes or faculties in the colleges

- Bureaucratic practice in the processing and approval of new programmes by the university
- Delays in the process of programme accreditation by the regulatory and professional bodies (GTEC, GMDC, NMC, etc.)

Implementation and Accelerating the process of decision

- Delay in decision caused by bureaucratic procedures and processes of approvals for implementation of decisions

Devolution of powers and Delegation of authority and responsibility

- Human resource development in the areas of recruitment, promotion, and training
- Lack of financial autonomy
- Centralised admission process

From the discussions above, it is evident that the Colleges in KNUST have invested heavily in facilities, including extensive infrastructure, resources and services. Decision-making in the administrative system has improved. Previously, decisions affecting units like the library, audit, procurement, and estate affairs in the faculties (as was the case) were taken by the faculty board in most cases with no representation from the units. With the adoption of the collegiate system, the College unit representatives serve on the college boards and have input on decisions taken at that level. Now, the College unit matters have been brought to the fore and are now considered among top priorities in the agenda of all faculties and colleges. The improvement has also affected the budgetary allocation of the units. The collegiate system over the years has triggered a series of restructuring and expansion works. This has affected the provision of services in the colleges to support teaching, learning and research. This evaluative research reveals that the system has gained roots, structures continue to be improved, and challenges are being overcome.

Conclusion

Higher education is a comprehensive process that includes providing college students with adequate support to identify the courses that meet their requirements. It also includes helping students with time management, fee management, and ensuring that their college education is completed without any issues. The collegiate system of approaches has helped toward academic and administrative leadership that deserves a more concentrated focus. The collegiate style of administration is successful in increasing the scope of operations in the colleges. After 15 years in existence, the collegiate system in KNUST has been effective, as was the vision of the former Vice Chancellor, Prof. Andam, who instituted it.

Recommendations

The collective achievement of the colleges spells out the achievement of the university. It is, therefore, important that each college define its role in the context of the university strategic plan and position itself to contribute towards the realisation of the goals of the university. The recommendations given are that support is needed for periodic review of the collegiate system. Such reviews will assist in ensuring that most created and anticipated impediments are managed and resolved.

Firstly, total decentralisation, especially in financial autonomy suggests that each college should have control over its financial resources and be responsible for its budget. This would enable the colleges to plan and implement their programs effectively without having to rely on the central administration for funding. It would also ensure that the resources allocated to each college are used judiciously and in accordance with the strategic plan of the university. Moreover, standardisation of administrative and financial procedures and processes within the colleges, and the university as a whole seeks to promote uniformity and consistency in administrative and financial procedures across the colleges and the university. Standardisation would ensure that all colleges operate in accordance with the same guidelines, and that resources are utilised efficiently and effectively. It would also promote transparency and accountability, making it easier to track and monitor the progress of each college.

In addition, efficient communication and coordination of activities between the colleges and the central administration is crucial for the success of the collegiate system of administration. This recommendation emphasises the need for regular communication and collaboration between the colleges and the central administration, to ensure that the activities of the colleges are aligned with

the strategic objectives of the university. This would help to avoid duplication of efforts and promote synergy among the different colleges. Also, the improvement of infrastructure and facilities at the college highlights the need for the colleges to have adequate infrastructure and facilities to support their activities. The provision of quality infrastructure and facilities such as laboratories, libraries, lecture halls, and office spaces would improve the quality of teaching and research, and make the colleges more attractive to students and staff. This would also enhance the image of the university and help to attract funding and partnerships from local and international organisations.

Again, more devolution of power, especially in terms of decision-making and financial planning and management. The recommendation for more devolution of power seeks to empower the colleges to take more ownership of their affairs, particularly in decision-making and financial planning and management. This would enable the colleges to respond more quickly and efficiently to the needs of their stakeholders, and to implement innovative ideas and programmes without having to seek approval from the central administration.

Lastly, devolution of further powers to the college by the central administration, for example, reinstatement of students and appointment of external examiners to the colleges. This recommendation highlights the need for the central administration to delegate more powers to the colleges, particularly in the areas of student affairs and academic programmes. This would enable the colleges to respond more effectively to the needs of their students and to attract and retain quality staff. It would also enhance the academic autonomy of the colleges and promote innovation and creativity in the delivery of programmes.

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Ethical Procedures

- The paper should highlight clearly the ethical procedures utilized in the work and informed consent was obtained from all human participants during the interview and the distribution of the questionnaire.
- All the above-listed authors have no competing interests or biases.

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