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The Pre-reform Conundrum of the Gambia Public Higher Education System: A Quantitative Examination

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Abstract
This study examined the Gambia public higher education system in the period before the 2018 higher education reform, as referenced in the National Development Plan 2018-2021. The study relied on a sample size of 239 staff members out of the target population of 391 staff members of the four subvented public tertiary and higher education institutions in The Gambia, the Ministry of Higher Education, Research, Science and Technology and the National Accreditation and Quality Assurance Authority. Using both descriptive and inferential statistics in the analyses, findings revealed poor performance of all the sampled institutions in relation to governance, staffing, instructional quality and relevance, research and development and financing.

Key words: National development; Higher education reform; Human capital formation

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1. INTRODUCTION
National development has a correlating effect on human capital formation (Okemakinde & Olaniyan, 2008), especially when governments plan their education systems to meet the requirements of their socio-economic advancements. This is to proffer the argument that nations become self-reliant and socio-economically advanced if they can create and utilise the knowledge base for productivity. In fact, in most countries, universities are agreeably created for institutionalised knowledge creation and dissemination; and play reforms targeting higher education to achieve national socio-economic advancement. It can therefore strongly argued that higher education investments go a long way in creating desirable public and private rates of return for both the national economy and the individual development processes. The World Economic Forum (2010) report indicates that "quality higher education and training is crucial for economies that want to move up the value chain beyond simple production processes and products".

In the face of these realities, a development paradigm that fails to ensure investment in higher education, especially in quality and relevance of higher education systems, would only result in high dependence on foreign financial and expert assistance for their development initiatives, and such countries would lose to themselves. In contrast, countries such as Korea, Ireland and Finland who chose to invest in their higher education systems (Foxley & Sossdorf, 2011) eventually realised higher socio-economic development.

Providing a sustainable human capital stock for socio-economic development in low-income countries has become more elusive, given the limited quality and relevant conditions. Evident in the OECD paper by Lammersen and Roberts (2015) are the major challenges of domestic productivity and adequate market access, attributable to product standardisation, caused by absence of educated professionals in production. To expand growth in developing countries, there is need for the infusion of higher-level scientific and technology-related knowledge and skills.

Today, societies and economies have already embraced education systems that are open to a "globalisation and ever-changing technological scenario", which has led to "increased mobility for labour and capital", bringing along "new modalities for education and training" (Chakroun, Holmes & Marope, 2015), hence the need for our out-dated education systems to be reviewed. Also tied to this fact, is the age distributions observed, which when projected in developed and developing countries from 2010 to 2050, indicates that Sub-Saharan Africa should prepare a large cohort of youth to enter the workforce. Unless this region creates life-long learning opportunities consistent with the changing educational demands of the industries (Chakroun *et al*., 2015), preferably at higher education levels and with relevance and quality, there will be constant civil unrest.

The government, therefore, must anchor institutional development for responsive, and high productivity on human capital formation and utilisation (GoTG, 2017), and the education sector has, over the years, been working in this direction. For instance, the education sector premised the development of the Education Policy 2004-2015 on Vision 2020 and Poverty Reduction Strategy Paper (PRSP), both of which seek to improve the human capital of the country by reducing the number of people living below the poverty line, thus the theme: 'Rethinking Education for Poverty Reduction' (GoTG, 2004).

Earlier on, The Gambia established its first and only public university education in 1995, through an extension programme of the St Mary's University of Halifax in Canada through the Nova-Scotia Gambia Association (NSGA). Building on this initiative, the government established the University of The Gambia (UTG) as a fully-fledged University in 1999.

That notwithstanding, the failure of policies in The Gambia is evidenced by the mismatch of graduates in the labour market and the inequitable access to quality and relevant higher education (GoTG, 2016; 2017). Against this backdrop, GoTG (2017), in the National Development Plan (NDP), proposed a reform that will focus on inclusive access to quality education and training with an emphasis on demand-side market-relevant skills training, scientific research and technology development.

However, the higher education reform points outlined in the NDP have implications on quality and relevance, as well as its inclusiveness in The Gambia. As reported in both the NDP and the Education Sector Policy (GoTG, 2016; 2017), weak teaching skills and inadequate materials contribute to low education quality. Other factors include thin governance structures, inadequate staffing, unsustainable funding mechanisms, delineated curricula, and insufficient research capacity in both personnel and infrastructure. The National Accreditation and Quality Assurance Authority (NAQAA), with the mandate of regulating all quality aspects of public and private post-secondary institutions in the country (GoTG, 2017), was established to help address these issues. It monitors institutions to ensure compliance with quality standards; a system synonymous to the Observatory earlier referred to in the 2004-2015 Education Policy, which served as an advisory body to promote and maintain academic standards in education, learning and knowledge associated with the University of The Gambia (UTG) or any other national higher learning institution. As stipulated in the NDP 2018-2021, the assessment of quality will use accreditation indicators of institutions and programmes nationally (GoTG, 2017).

Agreeably, developing a national higher education system that adequately responds to workforce needs for national development requires a thorough review of the landscape. In any reform process, the baseline informs the reform policy objectives and strategies. It behoves the researchers to go back in time to review what has been the status of the higher education system before it embarked on the current reform. This is to ensure that the policy makers have not been 'beating a dead horse'. Implicitly, higher education reforms should take a scientific approach.

This study sets out to empirically examine the pre-reform period of the higher education sector along the parameters of governance, staffing, instructional quality and relevance, research and development, and financing. Review of empirical data brought these five parameters or sub-systems typical to successful reform programmes.

2. REVIEW OF LITERATURE

2.1 National Development

Human wellbeing has economic implications. In the case of international organisations like the World Bank and the International Monetary Fund (IMF), countries' economic wellbeing is tied to their economic strength; even though, much is yet to be desirably accepted around these demarcations. These organisations would refer to the income per capita (Renard & Verbeke, 2011). Two methods used along this line are the *Atlas* and the *purchasing power parity* (PPP). However, it is worth noting that need satisfaction is more complicated than assumed, and the power to purchase one's needs is not a function of goods in the traditional markets. Either Atlas or PPP, therefore, does not change the inter-income status landmark; low-income, middle-income, and high-income; and classifications along these lines do not always show countries' economic capacity and progress (Nielsen, 2011).

The United Nations Development Programmes (UNDP) uses a different approach to measure national development. Therefore, the human development index (HDI) addresses the income per capita and poverty controversy by rating countries based on their performance

on life expectancy, education, and income per capita (Foxley & Sossdorf, 2011; & Nielsen, 2011). In short, HDI adds health and education to the economic variable to determine countries' developmental performance.

These categorisations direct attention to vital socio-economic indicators and places some countries low in the development threshold due to their low human development or income per capita indices. However, empirical evidence shows a positive correlation between high income per capita and the non-income human development indicators such as life expectancy and education (Glennie, 2011; & Verbeke & Renard, 2011). Therefore, it is arguable that higher life expectancy and education are possibly outcomes of high income per capita in a country or vice versa.

Both social and economic factors lead to national development (Weber, 1978: cited by Vogler, 2019). Several other researchers associated the development of both economy and society to a modern, rational bureaucratic administration (Pierson, 1996; Ostrom, 2008: as cited by Vogler, 2019); and Vogler (2019) argues that network connections between political and economic entities mean success in one is successful in the other.

2.2 Higher Education Reform

Reformation simply means the changes to something to bring it back to the right path. This is the changing of the *status quo* to conform with the ideal since the *status quo* is not responding to the people's desired aspiration for which the reform is proposed. Implicitly, the people form the centre of reformation, though services are reformed for more significant people satisfaction. Reform may target people's behaviour towards doing the day's businesses, which may be cultural, political, or scientific. However, any reform is a means to an end.

It is therefore understood that reform in the public sector is to make governments more responsive to citizens. It comes with changes relating to governments having reduced grip on sectors of production and introducing bodies outside the leading public sector to control these sectors of production; and by cutting the cost of public spending on social services and placing more support on the private sector or adopting private sector's way of doing things (Eakin, et al., 2011).

In the public sector, governance reform takes centre stage, and this is to ensure that greater capacity is generated and that there is a commitment, among other things, to those relating to the political context (Bunse & Fritz, 2012; Bukenya & Yanguas, 2013: as cited by Joshi & Carter, 2015). According to Joshi & Carter (2015), the objective is to shape organisations' behaviour to change the way institutions function.

However, reform in the higher education sector, especially in Africa, must contend with a colonial legacy, as these are marred with low enrolment and completion rates; mainly attributable to the widespread failure of education policies (Villalón & Tidjani-Alou, 2012: cited by Joshi & Carter, 2015). According to Varghese (2012), as cited in Varghese & Martin (2014), higher education reforms narrow down on training for production, transmission and use of knowledge; and that in Europe, higher education reforms nurture the notion that competitiveness is driven by expertise and this has led to many strategic initiatives such as 'Standards and Guidelines for Quality Assurance in Higher Education' and 'European Network for Quality Assurance' under the Bologna Process (Martin & Anthony, 2007: cited by Varghese & Martin, 2014). A similar trend took off in the Asian countries as elaborated by Varghese and Martin (2014). Similarly, it was to reposition and facilitate the transition to a market economy in the independent commonwealth states. In Africa in particular, it centred on cost-recovery measures such as a reduction in subsidies, fee-paying and new programmes in the bid to move the universities from the state to the market (Varghese & Martin, 2014).

That notwithstanding, the state maintains the supervisory role; and established higher education ministries and related agencies and authorities to mediate between the government and higher education institutions (Varghese & Martin, 2014). They argue that unless there is national policy coherence between players, incremental autonomy and contextualised autonomy policies would suffer setbacks (Varghese & Martin, 2014). This is obvious in Woldegiyorgis's (2014) dichotomy of the two extremes of government-university relationship that see government very stringent on one side making universities operate according to "the interests and choices of the state", controlling access, curriculum, degree structure and requirements, examination system, and even appointment and remuneration of academic staff; while at the other end, the government kept certain critical aspects of the university to help ensure that there are quality and responsiveness in the system; more like a marketisation philosophy. In either case, the state has to have some level of control over the universities even if this would mean carefully threading between the two extremes through the use of incentives and or impositions to make sure universities comply (Woldegiyorgis, 2014).

Some extensive research has been conducted in higher education reform in various parts of the world. However, there is strong justification in the literature that higher education has substantial returns on investment. Students must be adequately prepared during their participation in higher learning to ensure quality and relevance are recognised as existential and therefore indispensable.

Despite the efforts made around embracing marketisation and rigorous curricular reviews, there is little evidence to show that there is no decrease in commensurable jobs for the new graduates, and again very little has been revealed on alternative solutions such

as entrepreneurship. Therefore, it is still assumed that the higher learning institutions, from a national perspective, have not entirely addressed this issue of mismatch. There is a growing need for the higher education systems to further review their reform processes and develop appropriate plans that will make their programmes much more responsive to the industry. Still, the intensity of the exchange between the education providers and the industry may be the missing link.

Therefore, countries should build their higher education capacities (reform the sector to respond to market needs adequately); and most successful countries focused on governance, staffing, instructional quality and relevance, research and development and financing during their reform process.

2.3 Higher Education Reforms and National Development

According to Carnoy (1999), the pay-off for higher education has driven the shift of economic productions to knowledge-intensive products and processes. As provided by the national pool of professionally trained human resources and the knowledge-driven production of goods and services, the strengths underlying international competitiveness increase demand for people educated to higher levels (Varghese, 2009). Therefore, reforms driven by competitiveness ask for improved economic productivity, which translated into expanding the educational attainment of the labour force (Carnoy, 1999).

For economies to gain higher competitiveness, the emphasis is placed on drivers of growth. Based on both the assumption and empirical evidence of higher education's central role in the production, the relationship between the two (- growth drivers and higher education) becomes a very significant agenda in the realm of national policy formulation on development (Hernes & Martin, 2000). Bloom, Canning & Chan (2005) put up a case for Africa by re-echoing that sub-Saharan Africa was 23 per cent below its productivity. They argued that a minimal raise in investment in higher education would raise the continent's output (technological catch-up); and that if this could be sustained, Africa will reach "the world-wide technological or productivity frontier".

Carnoy (2006) equally argues that higher education increases the output of labour forces, and even draws conclusions that different education levels also explain the various economic development levels. Basic education is essential for the agricultural sector, awareness of infectious diseases, planning the family, *et cetera*; however, quality basic education has entered the realm of science and technology and requires advanced training to ensure quality instructional delivery. More so, the delivery of quality health care cannot be divorced from qualitative preparation of those service providers at higher education levels in respective specialisations. The former UN Secretary-General, Kofi Annan, was cited visualising the university as the remedy to Africa's numerous problems; ranging from lack of expertise, weak institutions, governance, conflicts, and human rights abuses, (and more significantly) to the continent's low presence in the global community of scholars (Bloom *et al.*, 2005).

In a similar vein, the World Bank (1994) sees higher education to be contributing to economic growth, given that it is the training medium of professionals who play a central role in the development, adaptation and diffusion of innovations in the economy; and that evidence in research has shown that higher education enrolment correlates with development. A report of UNESCO and the World Bank Task Force on 'Higher Education and Society', as well as the World Bank report on 'Constructing Knowledge Societies: New Challenges for Tertiary Education', have gone the extra mile to emphasise increased investment for higher education in developing countries (cited in Bloom *et al.*, 2005). After all, "productivity is the basis for sustained economic growth and wealth accumulation, (and therefore), higher-level skills, knowledge and technology are indispensable for competitiveness in the global economy" (Chakroun, Holmes & Marope, 2015).

Therefore, it could be argued that higher education is a capital good on the premises that a calculated development of skills is an essential factor in any production activity; and that, human beings are the active agencies in the accumulation of that capital (Olaniyan & Okemakinde, 2008). In the World Bank 1993 report, the East Asian economic boost has been associated to the point that those countries in the forefront of technology have the most educated population (Becker, 1992; & Van-Den-Berg, 2001: cited by Okemakinde & Olaniyan 2008). It could be concluded therefore that, higher education, in its formal context, is a significant factor of human capital and has assumed responsibility in addressing development; specific to which is the level that most affect development and the relevance of the curricula to that agenda.

Livingstone (1997) and Bowles and Gintis (2003) critique the education system, as in the case of human capital theory, as a likely prospect of competitiveness for the more outstanding private enterprises, which mimics a somewhat "intellectual reserve army of labour and the continuing wastage of investment". They refer this "reserve army" as an avenue for the capitalists to maximise profit by exploiting the labour-power of workers and by holding down the value of labour-power. They (Bowles & Gintis, 2003) argue that our education system "forestalls the development of working-class consciousness, and legitimises the economic inequality by providing an open, objective and ostensibly meritocratic mechanism for assigning individuals to unequal occupational positions". Earlier on, Coomb (1970) was more direct when he wrote that a good deal of our education did not appear to produce development-

minded people with the appropriate skills, knowledge, and attitudes to promote national development.

Therefore, the associated failure of the human capital formation may be a failure of the education system. Presumably, human capital formation may not be the overall remedy, but it improves labour standards; and a competitive nation requires greater attention to human capital formation at every level – individuals, family, enterprise and society (Marshall, 2005). Becker, a key proponent of human capital theory, accepts that credentialism exists, but there is little evidence that explains the difference between earning and schooling (Becker, 1992). In his view, the understanding is that the demands of work-life are not in conformity with school life and that the former goes beyond mere academic success. Becker (1992), and later OECD (2012), acknowledge those lower virtues of capital that are generally associated to income gained over time through other factors of production, but place more significance to higher virtues associated to human intellect and wellbeing as a result of quantitative and qualitative increment through investment in schooling and training (Becker, 1992; & OECD, 2012). Moreover, inherent scientific knowledge increases productivity and adds the value of education and training (Becker, 1992).

It could be noted that even during the period of industrialisation as it related to national development, higher learning institutions took up the critical role of creating the knowledge that boosted industrial productivity. Today, new markets have been created for these universities, and we have seen heightened collaboration in the realm of research financing (Woldegiyorgis, 2014). Moreover, accordingly, from a social development point of view, it is evident that governments depend on the commitment of its elites and the widespread support this generates; and these productive forces are created in higher learning institutions and have been seen influencing public opinions on social, and more so, on political matters (Woldegiyorgis, 2014).

There is consensus in that investment in education can increase individuals' labour-power, and that schooling facilitates the extraction of labour-power from an employee. The argument centres around the increase in the labour-power as a cause of increased work skills, or simply through the credentials bagged from schooling; and whether the extraction of labour-power is done through the "class-based structure of incentives" (Bowles & Gintis, 2003). Amid this lack of clarity, recent reforms in the higher education sector have brought human capital formation closer to the industry's demands, which has seen a wave of revised curricula and placed industry and research in the centre of higher education; thus, the need for reform in many places. Central to these reforms is the quality and relevance of the education service delivery which links to the parameters herein outlined for review.

2.4 The Gambia's National Development within the Context of Higher Education Reform

The Gambia, as a nation has been concerned with the development of its people and has gone through several development plans that are geared towards addressing economic and social development.

The country entered a second republic in 1994, which also marked the year of its first specific Strategy on Poverty Reduction (SPA I). This plan suffered implementation setback due to its lack of pro-poor and macro-economic framework advocacy (DoSFEA, 2006), hence in 1996, government developed a highly ambitious long-term vision for socio-economic advancement meant to:

> Transform The Gambia into a financial centre, a tourist paradise, a trading export oriented agricultural and manufacturing nation, thriving on free market policies and a vibrant private sector, sustained by a well-educated, skilled, healthy, self-reliant and enterprising population, guaranteeing a well-balanced ecosystem and a decent standard of living for all, under a system of government based on the consent of the citizenry. (GoTG, 1996).

Vision 2020 illustrates the demand for high competitiveness and transition to a middle-income economy (GoTG, 1996) hinging on acquisition of requisite knowledge and skills in the development sectors. It was not out of place therefore, that The Gambia planned on providing effective and efficient public services, and designed a reform programme for implementation, which centres on institutional capacity building, more in professionalism to implement policies with efficiency and effectiveness (DoSFEA, 2006). However, institutional quality that is meant to lean on sound technical and administrative supports continue to malign the country's competitiveness, and hence, low economic development. For instance, public service has been characterised by high attrition (brain-drain), ineffective training policies, and inadequate human capital (DoSFEA, 2006).

Later, SPA II, also called 'Poverty Reduction Strategy Paper (PRSP I) 2003-2005', was developed after The Gambia was forced into a programme with IMF in 1999, and this later provided the opportunity for a second PRSP (DoSFEA, 2006), implemented between 2007 and 2011. Challenges associated with implementation of PRSP I included human capital formation (DoSFEA, 2006; GoTG, 2011). During these implementation periods, economic development also remained a major challenge, with a characteristic low HDI.

Upon the closure of PRSP II, a new national development blueprint on Programme for Accelerated Growth and Employment (PAGE) was developed, which, like PRSP II, recognised the fact that Vision 2020 echoes the need for transition from a low-income to a middle-income economy (DoSFEA, 2006; GoTG, 2011).

In the National Development Plan (NDP) 2018-2021, a successor to the PAGE, agricultural and natural resources

sector plans prioritising increased agriculture and natural resource outputs and making maximum and balanced utilisation of rain-fed and irrigated agriculture (GoTG, 2017). This is achievable through human capital formation strategies that advocate the provision of extension services, research and development, water resource management, private sector participation, and micro-financing. And in the tourism sector, which is a key player in the country macro-economic framework strategies, increased arrivals and quality standards through human capital formation have been promoted (GoTG, 2011, 2017). The industrial policy, as at 2006, the human capital formation strategies place emphasis on skills training in management, product development and ICT (DoSFEA, 2006, GoTG, 2011; 2017).

It could be noted that while these national strategies recognise the weakness of the factor-driven pillars, mainly in the areas of competencies (human capital), the policies and strategies outlined framework building of these competencies through education and training. Even as these individual strategies do not show focus and consistencies, and the evident deficits in outlining sound capacity building plan, there has been the presence of human capital formation all through. However, capital formation could have ensured consistent productivity and solid foundation base for the efficiency enhancement pillars such as higher education and training; goods and labour market efficiency; financial market development; technology enhancement; and enlargement of market size; but this have not been supported by the higher education system that has been in place over the years.

This background, even in the absence of an empirical review of the status core, necessitated a reform agenda, thus:

> To increase equitable access to quality and relevant science, engineering, and technology programmes to reduce skills mismatch in the country. The government proposed establishing one TVET centre in each of the six administrative regions and rolling out entrepreneurship programmes in TVET institutions. The interventions would include building and refurbishing skills centres, and providing instructional materials, developing and reviewing curricula with emphasis on entrepreneurship. Academic staff will be trained, especially in professionalism, and TVET graduates will be provided seed money to establish their businesses.

The secondary schools in the respective administrative regions would serve as catchment areas of these regional centres, which will in turn supply the degree-awarding higher learning institution of applied science, engineering and technology. The degree-awarding focus would be on increasing access to quality and relevant science, engineering, technology education and training to be implemented through a mentorship programme, and an emerging centre of excellence on science, technology and engineering for entrepreneurship (STEE) to be established.

To also harmonise programmes offered at both Gambia College (GC) and UTG to enhance efficient utilisation of resources, and to improve the quality and relevance of UTG programmes to meet international standards.

This second component of the reform was informed by the Ministry's attempt, over the years, to promote a tertiary and higher education system of reputable institutions that will become centres of excellence. These institutions should produce well-educated and skilled citizens who acquire the requisite competencies to lead fulfilled lives and compete nationally and globally. Interventions would include providing instructional materials such as laboratory equipment and digital technologies to facilitate physical and virtual learning. There would be curricula development and review, consistent with current programmes at both institutions, and career path opportunities leading to degree programmes in education, health and agriculture. All programmes would be harmonised to lead to respective degrees by promoting upward mobility with credit transfer opportunities. Professional training programmes for lecturers would be introduced to build the pedagogical competencies of academic staff. The reform would place a premium on national and international accreditations of programmes. To this end, academic staff would be trained, and mentorship and professional development programmes and technical assistance, especially for administrators, would be provided.

To improve public administration and management programmes for effective and efficient service delivery, especially for the public officials along the tenets designed in the civil service reform programme; and for this reason, Management Development Institute (MDI) would be upgraded to a degree-awarding institution. Interventions would include civil works to expand and refurbish the current structures and provide instructional materials, curricula development and review, and accreditation of programmes nationally and internationally. Capacities of staff would be developed to meet the standards set out for university education, and this will include mentorship, professional development programmes and technical assistance.

To improve tertiary and higher education institutions' quality assurance standards to meet international accreditation requirements. The staff capacity at NAQAA is to be developed adequately to implement the national qualifications framework (NQF). This would go along with the development of the Ministry's capacity so that both NAQAA and MoHERST can execute appropriate supervision and monitoring of institutions.

3. METHODOLOGY

3.1 Research Design

This study adopted a quantitative approach. The Gambia's higher education system before the 2018 reform was analysed, focusing on governance, staffing, instructional quality and relevance, research and development, and financing.

The researchers also used quantitative method to gather and analyse data, which used opinions of staff in relation to the sub-systems identified. This identified the *status quo* of the pre-reform higher education landscape. These are the indicators of governance; staffing parameters such as provision of tools and training and development; instructional quality and relevance, like quality assurance and accreditation; research and development issues and funding opportunities; and the financing abilities of public higher education and, and whether the higher education system in The Gambia had its head above water in all these parameters.

3.2 Area of Study

The area of study is the higher education sector of The Gambia, comprising the MoHERST and NAQAA (being the policymaking institutions of the higher education system); UTG; GC; MDI; and GTTI.

MoHERST and NAQAA are the two institutions responsible for the policy direction in the higher education sector. The policy definition classifies tertiary education institution in The Gambia as those institutions that offer qualifications that can lead to degree programmes, but not including degree programmes; meaning these institutions offer levels three to five of the 1997 ISCED. The policies also define higher education institutions as those that provide degree programmes and therefore have programmes at levels six and above under the 1997 ISCED. However, the MoHERST is mandated to oversee both higher and tertiary education institutions, and by levels the sub-sector comprises of higher education and tertiary education, also referred to as post-secondary level. Programmatically, the sub-sector deals with technical vocational education and training (TVET) in post-secondary institutions, as well as their general programmes.

The assessment of MoHERST and NAQAA, along with the tertiary and higher education institutions, was to determine their implementation capacity of the reform policies in place and whether they are well situated at the levels of governance and staffing.

The four tertiary and higher education institutions had been identified because of the major roles in The Gambia's human capital formation for the socio-economic sectors, and, their direct relationship with MoHERST in terms of subvention and control over their governance systems.

3.3 The Population of the Study

The study population was identified from the institutions' staff, narrowed to selected staff members in active service. The study eliminated those staff members who work as teaching, personal or administrative assistants in any of the selected institutions, and those staff that were not in the system during the period under review. While those in MoHERST and NAQAA are considered administrative staff, both administrative and academic staff were selected in the educational institutions. To this end, a population size of three hundred and ninety-one (391) were identified. These are the officers within the three management categories (senior-level, middle-level and junior-level management) of the institutions and formed the basis for the quantitative design that addressed the objective of the study.

3.4 Sampling Technique and Sample Size

A probabilistic stratified sampling technique was adopted to generate a sample size of two hundred and thirty-nine (239) out of a population of three hundred and ninety-one (391). The study utilised the formula provided by Yamane (1967) to calculate the quantitative sample size, which takes care of the confidence level and the precision required to accommodate the probable sample error. The four subvented institutions responded to items on all the parameters or sub-systems (instructional quality and relevance, research and development and financing, governance and staffing, in socio-demographic component of the respondents). The institutional questionnaire had also been stratified into administrative and academic sub-components and subjected each stratum to Yamane (1967) formula. In contrast, the MoHERST and NAQAA combined responded only to the questionnaire's socio-demographic, governance, and staffing components. The procedure provided a basis for comparing respondents from the different strata; and ensured that the samples taken reflected the proportion as they existed in the population. A simple random sampling technique was used to ensure that no respondent was selected twice or biased.

Table 1
Population and Sample Size Distribution of the Six (6) Institutions

Institution	Area	Pop.	Calculated sample size	Final sample size
MOHERST + NAQAA Staff (Admin)		60	24.00	25
UTG	Administrative Staff	38	19.49	20
	Academic Staff	143	31.26	33
GC	Administrative Staff	13	9.81	17
	Academic Staff	107	29.12	48
MDI	Administrative Staff	20	13.33	13
	Academic Staff	21	13.77	15
GTTI	Administrative Staff	25	15.38	18
	Academic Staff	120	30.00	50
Total (I+M & N)	**Administrative Staff**	***156***	186	239
	Academic Staff	391		

Source: Field work (November 2020).

However, when applied, the Yamane formula presented a sample size of one hundred and eighty-six (186). The researchers anticipated that specific subsets might not meet an appropriate sample size of twenty-five and added more samples to increase the power for inferential analysis, which brought the final sample size to two hundred and thirty-nine (239), constituting 61.1 per cent of the entire population. See the Table 1.

3.5 Research Instruments – Questionnaires

The researchers collected data from a survey using structured questionnaires developed for the purpose. Each respondent was entitled to one questionnaire. The instruments were pretested in a pilot survey, which helped address reliability issues through a test of Cronbach's Alpha and the validity through expert opinions. The design of the questionnaires comprised of six main components meant to extract information on success factors of sub-systems from the respondents:

• Officers' demographic and social details included information on gender, age, qualifications and year of appointment.

• Governance system dealt with the autonomy of the structure in place, transparency and accountability, among others.

• Staffing included opportunities for growth and levels of motivation.

• Instructional quality and relevance looked at the quality assurance systems put in place, among other things, materials for quality teaching and learning, pedagogy (or andragogy) training opportunities and student internships.

• Research and development infrastructure included promoting research and the institutions' relationship with the industry and the capacities and opportunities for staff to research by way of training and funding.

• Financing looked at funding mechanisms in place that could provide sustainability to the programmes and the viability of the higher education system.

3.6 Validity and Reliability of Research Instruments

The researchers measured the validity and reliability of the quantitative data by discussing the items with experts and colleagues in the area of study. The pilot study carried out gave the researchers opportunity to have the comments of the experts on the items and later adopted to improve the study's content validity. Besides, the quantitative data reliability was also verified by testing the Cronbach's Alpha from the pilot responses. Initially, some variables had low Alpha; however, after eliminating those items, the Alpha levels rose; however, the Alpha for the financing items remained low but still, at a level acceptable in social science domain.

While governance and financing observed an increase in the Alpha, the rest suffered some minor drops. Ultimately, the indication was that all the items passed the reliability tests and could be used in the study. A value of point-six-zero (.60) is acceptable in the social sciences. From the table below, all the items passed the test of internal consistency and can therefore be used in the study as acceptable items. The governance questionnaire received the highest internal consistency from the scores, followed by staffing and financing questionnaires. The questionnaire on financing suffered low internal consistency in the pilot, but this shot higher in administering the final questionnaire. The research and development questionnaire suffered low internal consistency in the final administration of the items. Overall, both the pilot and the actual administration indicated convenient high Cronbach's Alphas of point-eight-nine-eight (.898) and point-eight-six-eight (.868), translating to ninety and eighty-seven per cents of consistency of the pilot and the actual, respectively. See the Table 2:

Table 2
The Cronbach's Alpha of the identified

Variable	Alpha Value (Pilot)	Alpha Value (Actual)
Governance	.874	.899
Staffing	.831	.795
Instructional Quality and Relevance	.795	.732
Research and Development	.821	.681
Financing	.643 (.659*)	.782
Overall	.898	.868

Source: Field work (November 2020).
*based on standardised items

3.7 Methods of Data Analysis

Data analysis was carried out using appropriate descriptive and inferential statistics. The descriptive statistics used frequency description, cross-tabulations, simple percentages, and central tendencies, while the inferential statistics used the one-sample t-test and analysis of variance (ANOVA) to compare means. The researchers used version 26 of the Statistical Package for Social Sciences (SPSS) for the analysis.

4. DATA PRESENTATION, ANALYSIS AND DISCUSSIONS

4.1 Socio-Demographic Characteristics of Respondents

4.1.1 Employment Types

The researchers identified the sample collected from the MoHERST and NAQAA as administrative, given their supervisory role over the academic institutions. The rest of the institutions were classified under the two strata of administrative staff and academic staff. A total of two hundred and thirty-nine (239) staff responded to the questionnaire. Nine-three (93) administrative staff, including the respondents from the MoHERST and NAQAA combined, constituting 38.9 per cent of the total sample size, and one hundred and forty-six (146) academic staff (61.1% of the total respondents) were sampled from

the institutions. GTTI had the highest response rate, followed by GC and the UTG (28.5%, 27.2% & 22.2%, respectively). On the other hand, MDI and MoHERST and NAQAA combined had the lowest response rates (11.7% & 10.5%, respectively). See the Table 3.

Table 3
Distribution by Employment Type and Institution

	M+N	UTG	GC	MDI	GTTI	TOTAL
Administrative	25	20	17	13	18	**93**
Academics	0	33	48	15	50	**146**
TOTAL	**25**	**53**	**65**	**28**	**68**	**239**

Source: Field work (November 2020).

4.1.2 Age Group of Respondents

This socio-demographic characteristics are studied by looking at the age groups and grouped respondents into five categories: less than 30 years, 30 – 39 years, 40 – 49 years, 50 – 59 years, and 60 years or above. The percentage distribution within the institution is presented below in Figure 1.

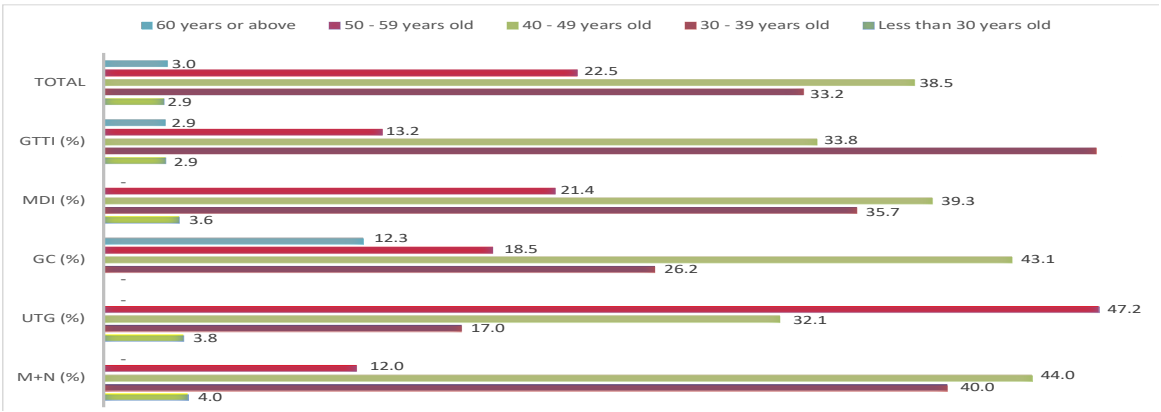


Figure 1
Distribution by Age Group and Institution
Source: Field work (November 2020).

Apart from UTG and GTTI, the rest of the institutions, including MoHERST and NAQAA combined, had a considerable normal distribution level. Therefore, it was apparent that the respondents were mainly between the ages of 30 and 49 years and constituted 71.7 per cent of the total respondents.

Only 5.9 per cent of the respondents were either below 30 years (3.0%) or 60 years or above (2.9%). UTG and GC presented more elderly (50 years and above) among the academic staff (elderly within the age group: UTG, administrative – 20%, academic – 80%; and GC, administration – 39.3%, academic – 60.7%). Other sampled institutions had insignificant differences.

4.1.3 Experience of respondents

Also, among the respondents from MoHERST and NAQAA combined, those whose experience fell around 5-9 years were within the age brackets of 30 – 39 years, constituting 60 per cent within the age group of MoHERST and NAQAA combined. Among the UTG respondents, the modal experience of 5 – 9 years fell within the age group of 50 – 59 years brackets, followed by the 10 – 14 years of experience group of the same age group; meaning this age group had the most extended experience within the institution of UTG. In the case of GC respondents, the modal experience was the less than five years group, and this fell between the brackets of 30 – 49 years of age. MDI had a modal experience of 10 – 14 years within the age group of 40 – 49 years; and GTTI had a modal experience of 4 – 9 years within a young population of 30 – 39 years of age, which also scored the second modal experience of 10 – 14 years group. This younger experienced population of GTTI also showed the highest percentage of non-degree post-secondary certificate or diploma (37.5% of the 5 – 9 years of experience and 61.5% of the 10 – 14 years of experience groups). See the Figure 2.

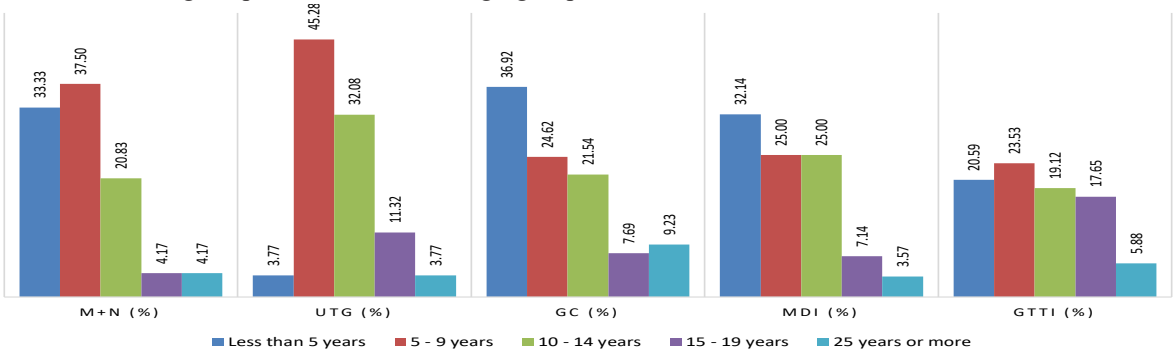
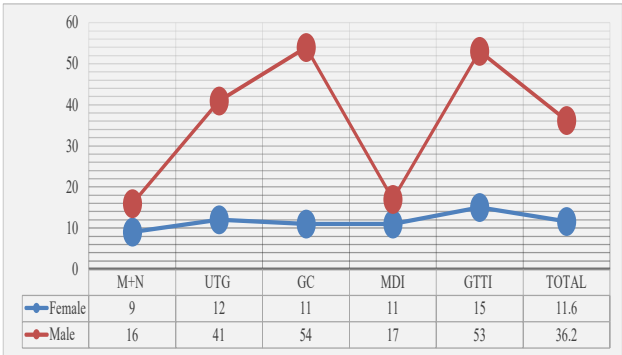


Figure 2
Distribution by Experience and Institution
Source: Field work (November 2020).

4.1.4 Gender of Respondents

The information derived from the respondents, specific to gender participation, had been negatively skewed; -1.202 with a standard error of 0.158; and percentage distribution of 27.7 per cent for female and 72.3 per cent for male. Figure 3 below shows that only MoHERST and NAQAA combined, and MDI closed the gender parity gap (36.0% & 39.3% for female and 64.0% & 60.7% for male, respectively). GC had the widest disparity (16.9% & 83.1% for female and male, respectively).



	M+N	UTG	GC	MDI	GTTI	TOTAL
Female	9	12	11	11	15	11.6
Male	16	41	54	17	53	36.2

Figure 3
Gender Distribution by Institution
Source: Field work (November 2020).

4.1.5 Nationality

In the nationality analysis of the socio-demographic characteristics, the absence of non-Gambians within the respondents of MoHERST and NAQAA combined, understandably has to do with the national civil service regulations. However, UTG as the highest learning institution, scored the highest percentage on internalisation (17.0%), followed by MDI, with 10.7 per cent. Both GC (7.7%) and GTTI (8.8%) could still be considered traditional with lower percentage of non-Gambians in the staff complement. In fact, their low scores impacted the overall academic institutional share of 11.1 per cent of all respondents combined. Figure 4 below illustrates internationalisation in the sampled institutions.

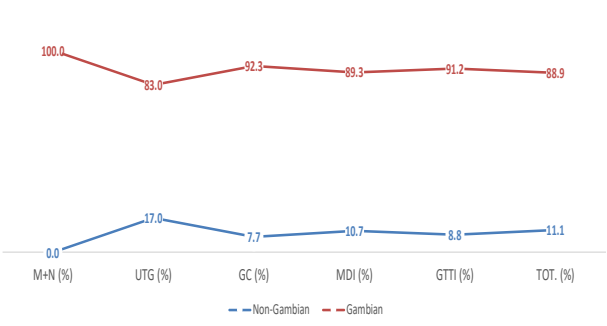
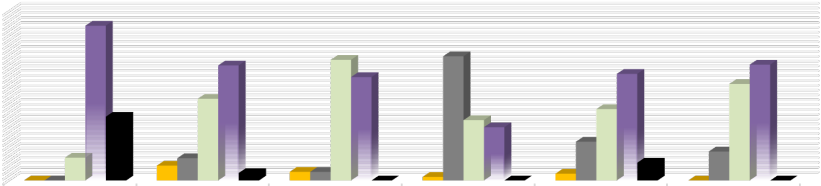


Figure 4
Distribution by Nationality and Institution
Source: Field work (November 2020)

4.1.6 Academic/Professional Qualifications

Respondents with secondary certificates were absent in MoHERST and NAQAA combined and UTG. Again, UTG presented no respondents with the post-secondary certificates/diplomas, which showed in all the other institutions. GC, MDI and GTTI had cumulative percentages of 2.8 and 16.1 secondary certificates and post-secondary certificates/diploma holders, respectively. Most of the post-secondary certificates/diplomas were from GTTI (51.5%). Only the UTG and GC had respondents with PhD (26.4% & 3.1%, respectively) and a cumulative academic institutional share of 7.4 per cent.



	UTG (%)	GC (%)	MDI (%)	GTTI (%)	TOT. (%)	M+N (%)
Secondary education certificate	-	6.2	3.6	1.5	2.8	-
Non-degree post-secondary certificate/diploma	-	9.2	3.6	51.5	16.1	12.0
Bachelor's degree or equivalent	9.4	33.8	50.0	25.0	29.6	40.0
Master's degree or equivalent	64.2	47.7	42.9	22.1	44.2	48.0
Doctorate degree or equivalent	26.4	3.1	-	-	7.4	-

Figure 5
Distribution by Academic/Professional Qualifications
Source: Field work (November 2020).

Figure 5 shows the presence of more respondents with master's degrees (44.2%), with the majority share of 64.2 per cent within UTG, followed by GC (47.7%) and MDI (42.9%). GTTI had the lowest share of respondents with master's degrees (22.1%), which also mimicked the institution's performance in the bachelor's degrees acquisition. MDI had more respondents with bachelor's degrees than the rest of the institutions, and the UTG had the least share of respondents with bachelor's degrees (9.4%).

4.2 Data Presentation on the Sub-Systems

The study researched the subvented public higher education system in The Gambia before the education sector embarked on the current reform in 2018, as enshrined in the NDP 2018-2021 Blueprint of The Gambia

government. This was meant to measure the performance of the system before embarking on the reform.

Descriptively, the average means on a five-point Likert scale should be the equivalence of neither agree nor disagree which, in this case too, is from 2.60 to 3.40; however, agreeability starts from 3.41 to 4.20 and strong agreeability from 4.21 to 5.0. In the opposite direction, from 2.60 to 1.81 is the range for disagreeability and from 1.80 – 1.0 is also the range for strong disagreeability. The objective herein was to look for agreeability and strong agreeability, which starts from 3.41 to 5.00; meaning that 3.40 is the extreme point preceding this agreeability point. For convenience, the researchers named this point the upper limit of neutrality and considered it the basis of the respondents' performance against the specific objectives narrowed on each of the broader sub-systems.

4.2.1 Governance

A one-way ANOVA found a significant difference between the institutions' mean scores in adequate participation of staff members in preparing the institutions' strategic plan, F(4, 234) = 2.65, p = .034. The post hoc test showed a significant difference that MoHERST and NAQAA combined were more engaging in the strategic plan preparation than GC. The rest of the institutions did not show differences in their engagement levels even though they perform negatively below the upper limit of neutrality.

Exploring their negative performance, it was realised that even MoHERST and NAQAA combined could not meet the assumption. However, the difference between these institutions' mean score and the upper neutrality point is not statistically significant. It could be concluded that the institutions failed to show that they engaged extensively in the preparation of their strategic plans. See the Table 4.

Table 4
Test Distribution of Performance on Governance (Gov-1)

One-Sample Test on 'The development of the strategic Plan had been adequately participatory' (Test Value = 3.40)							
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		Cohen's d (Effect size)
					Lower	Upper	
MoHERST + NAQAA	1.206	24	0.240	0.24	-0.17	0.65	0.24
UTG	-2.319	52	0.024	-0.4	-0.75	-0.05	-0.32
GC	-4.162	64	0.000	-0.631	-0.93	-0.33	-0.52
MDI	-1.601	27	0.121	-0.329	-0.75	0.09	-0.30
GTTI	-3.465	67	0.001	-0.444	-0.7	-0.19	-0.42

Source: Field work (November 2020).

When inquired as to whether these institutions' leadership understood their job to provide good leadership, it was again observed that there was no significant difference between their performances. Again, a one-sample t-test indicated that the staff believed that the leadership was not knowledgeable of their job. In fact this negativity showed significance for both GC and GTTI, t(64) = -3.486, p = .001, Cohen's D = -0.43 (medium effect size); and t(67) = -2.087, p = .041, Cohen's D = -0.26 (lower small effect size), respectively. See the Table 5.

Table 5
Test Distribution of Performance on Governance (Gov-2)

One-Sample Test on 'TThe leadership understood its role during this period and provided good leadership' (Test Value = 3.40)							
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		Cohen's d (Effect size)
					Lower	Upper	
MoHERST+NAQAA	0.178	24	0.860	0.040	-0.420	0.500	0.036
UTG	-1.967	52	0.054	-0.306	-0.620	0.010	-0.274
GC	-3.486	64	0.001	-0.508	-0.800	-0.220	-0.434
MDI	-0.032	27	0.974	-0.007	-0.460	0.440	-0.009
GTTI	-2.087	67	0.041	-0.297	-0.580	-0.010	-0.256

Source: Field work (November 2020).

The tests concluded that the sampled institutions' leadership did not understand their role and did not provide good leadership.

The test on their difference in performance as to whether the leadership ensured that the employees delivered their task did not show statistical significance. And the one-sample t-test showed positive significant performance for only MoHERST and NAQAA combined and GTTI, t(24) = 2.488, p = .020, Cohen's D = -0.50 (medium effect size), t(67) = 2.783, p = .007, Cohen's D = 0.333 (medium effect size), respectively.

Therefore, the analysis showed that leadership at both MoHERST and NAQAA combined and GTTI ensured that employees delivered their tasks, which helped achieve the purposes of their institutions. See the Table 6.

Table 6
Test Distribution of Performance on Governance (Gov-3)

One-Sample Test on 'The leadership ensured that employees delivered their tasks, thus, fulfilling the purposes of the Institution' (Test Value = 3.40)							
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		Cohen's d (Effect size)
					Lower	Upper	
MoHERST+NAQAA	2.488	24	0.020	0.360	0.060	0.660	0.498
UTG	-0.958	52	0.342	-0.155	-0.480	0.170	-0.128
GC	-0.929	64	0.356	-0.123	-0.390	0.140	-0.112
MDI	-0.325	27	0.747	-0.079	-0.570	0.420	-0.063
GTTI	2.783	67	0.007	0.365	0.100	0.630	0.333

Source: Field work (November 2020).

There was a significant difference between UTG and MDI scores on leadership working effectively as a team, with UTG performing lower. In a one-sample t-test and again UTG's score tested significantly lower than the upper limit of neutrality, t(52) = -2.977, p = .004, Cohen's D = -0.41 (medium effect size).

Table 7
Test Distribution of Performance on Governance (Gov-4)

One-Sample Test on 'The leadership worked effectively as a team' (Test Value = 3.40)							
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		Cohen's d (Effect size)
					Lower	Upper	
MoHERST+NAQAA	0.398	24	0.694	0.08	-0.33	0.49	0.080
UTG	-2.977	52	0.004	-0.457	-0.76	-0.15	-0.412
GC	-1.707	64	0.093	-0.246	-0.53	0.04	-0.215
MDI	1.407	27	0.171	0.314	-0.14	0.77	0.262
GTTI	0.732	67	0.467	0.1	-0.17	0.37	0.089

Source: Field work (November 2020).

The researchers concluded that even as the sampled institutions' leadership had not been reported as good team players, the case of UTG scored significantly lower than the neutrality point.

Whether the leadership of the institutions had control over employees and activities of the institutions, UTG respondents again performed significantly less than GTTI; and also showed statistical significance, t(52) = -2.929, p = .005, Cohen's D = -0.40 (medium effect size) against an upper neutrality point. Therefore, While UTG was flagged again for the lack of control over its employees and activities, the other institutions did not manifest that they had significantly scored above the neutrality limit, indicating some chance occurrence. Therefore, it was concluded that the respondent's collective view was that other institutions did not rise above the neutrality point, meaning they could not show that they had control.

Table 8
Test Distribution of Performance on Governance (Gov-5)

One-Sample Test on 'The leadership had control over the employees and activities of the Institution' (Test Value = 3.40)							
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		Cohen's d (Effect size)
					Lower	Upper	
MoHERST+NAQAA	1.012	24	0.322	0.24	-0.25	0.73	0.202
UTG	-2.929	52	0.005	-0.494	-0.83	-0.16	-0.399
GC	-1.235	64	0.221	-0.185	-0.48	0.11	-0.149
MDI	0.276	27	0.785	0.064	-0.41	0.54	0.049
GTTI	1.22	67	0.227	0.188	-0.12	0.5	0.149

Source: Field work (November 2020).

The institutions did not show a difference in their leadership opinions, showing a sense of honesty and strong moral principles towards their work. On a one-sample t-test, both UTG and GC performed negatively and statistically significantly on this, t(52) = -3.064, p = .003, Cohen's D = -0.42 (medium effect size) and t(64) = -3.240, p = .002, Cohen's D = -0.41 (medium effect size), respectively. Conclusively, none of the institutions proved statistically significantly that their leadership had a great sense of honesty and strong moral principles towards their work. Those who showed statistical significance only showed a true deviation from the view, and these were UTG and GC. See the table below.

Table 9
Test Distribution of Performance on Governance (Gov-6)

One-Sample Test on 'The leadership had great sense of honesty and strong moral principles towards their work' (Test Value = 3.40)							
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		Cohen's d (Effect size)
					Lower	Upper	
MoHERST+NAQAA	0.000	24	1.000	0.000	-0.380	0.380	0.000
UTG	-3.064	52	0.003	-0.513	-0.850	-0.180	-0.418
GC	-3.240	64	0.002	-0.446	-0.720	-0.170	-0.405
MDI	0.798	27	0.432	0.171	-0.270	0.610	0.150
GTTI	-1.087	67	0.281	-0.150	-0.430	0.130	-0.132

Source: Field work (November 2020).

Finally, on governance, as it related to leadership adhering and working diligently on the principles of openness and accountability, the institutions showed no significant difference between their scores. On a one-sample t-test, All the four academic institutions performed negatively expressing the lack of distrust in the leadership, except MoHERST and NAQAA combined whose score was also not statistically significant. However, GTTI negatively scored significantly with a small effect, t(67) = -2.378, p = .020, Cohen's D = -0.29 (lower medium effect size). Again, UTG and GC performed negatively with statistically significant differences on the slope, t(52) = -3.370, p = .001, Cohen's D = -0.46 (medium effect size) and t(64) = -3.637, p = .001, Cohen's D = -0.448 (medium effect size), respectively. None of the institutions expressed a significant positive view that their leadership adhered to working diligently on openness and accountability principles.

Table 10
Test Distribution of Performance on Governance (Gov-7)

One-Sample Test on 'The leadership of the Institution adhered and worked diligently on the principles of openness and accountability' (Test Value = 3.40)							
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		Cohen's d (Effect size)
					Lower	Upper	
MoHERST+NAQAA	0.398	24	0.694	0.080	-0.330	0.490	0.080
UTG	-3.370	52	0.001	-0.589	-0.940	-0.240	-0.464
GC	-3.637	64	0.001	-0.554	-0.860	-0.250	-0.448
MDI	-0.512	27	0.613	-0.114	-0.570	0.340	-0.093
GTTI	-2.378	67	0.020	-0.341	-0.630	-0.050	-0.287

Source: Field work (November 2020).

4.2.2 Staffing

The specific objectives on staffing elicited information on providing resources, renumeration packages and respect and appreciation from both the leadership and the colleagues. Test of statistical significance had been pursued to determine performance of the higher education system in The Gambia in relation to staffing matters.

The first test was for the respondents to give their opinion on the institution's provision of work-related tools. A James-Howell test was used in the post hoc after a non-equality of variance was detected, and it proved significant higher scores within MoHERST and NAQAA combined than both GC and GTTI. Among the academic institutions, no statistically significant difference had been observed.

A one-sample t-test showed that only MoHERST and NAQAA combined scored above the upper limit, but without significance, so it could not be concluded that the two combined provided the work-related tools for their staff. GTTI and GC's scores were low enough, and given their significance, the respondents disagreed that they were provided with work-related tools and resources, t(67) = -2.956, p = .004, Cohen's D = -0.36 and t(64) = -2.869, p = .006, Cohen's D = -0.36, respectively.

Table 11
Test Distribution of Performance on Staffing (Sta-1)

One-Sample T-Test on 'The Institution had provided me with the necessary work-related tools and resources' (Test Value = 3.40)							
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		Cohen's d (Effect size)
					Lower	Upper	
MoHERST+NAQAA	1.545	24	0.135	0.360	-0.12	0.84	0.309
UTG	-0.390	52	0.698	-0.060	-0.37	0.25	-0.054
GC	-2.869	64	0.006	-0.508	-0.86	-0.15	-0.356
MDI	-0.370	27	0.714	-0.079	-0.51	0.36	-0.070
GTTI	-2.956	67	0.004	-0.444	-0.74	-0.14	-0.358

Source: Field work (November 2020).

It was concluded that the institutions could not claim to be providing work-related tools and resources to their staff, but GTTI and GC's case in their aversion could be genuinely concluded.

Again, on the provision of benefits packages, it was revealed through Welch and Games-Howell tests that MDI paid much attention to their staff than the rest of the institutions. A one-sample t-test was conducted, and it was observed that all the institutions scored below the upper limit, except MDI with a statistical significance and upper-medium effect size, t(27) = 2.180, p = .038, Cohen's D = -0.412. Therefore, MDI was conclusively the only institution that provided benefits packages for the staff. The other three performed significantly in reverse.

Table 12
Test Distribution of Performance on Staffing (Sta-2)

One-Sample T-Test on 'I was quite satisfied with the benefit packages provided by the Institution' (Test Value = 3.40)							
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		Cohen's d (Effect size)
					Lower	Upper	
MoHERST+NAQAA	-0.180	24	0.859	-0.040	-0.50	0.42	-0.036
UTG	-2.076	52	0.043	-0.362	-0.71	-0.01	-0.285
GC	-2.355	64	0.022	-0.385	-0.71	-0.06	-0.292
MDI	2.180	27	0.038	0.314	0.02	0.61	0.412
GTTI	-5.665	67	0.000	-0.900	-1.22	-0.58	-0.687

Source: Field work (November 2020).

However, all the institutions performed quite well on the respect and appreciation for one another. The differences among them in this regard was not even statistically significant. The one-sample t-test proved all of them positively above the upper neutrality limit. UTG, t(52) = 6.786, p = .000, Cohen's D = 0.932, GC, t(64) = 7.514, p = .000, Cohen's D = 0.932 (very large effect size), MoHERST and NAQAA combined, t(24) = 4.231, p = .000, Cohen's D = 0.846, MDI, t(27) = 4.412, p = .000, Cohen's D = 0.834 (large effect size), and GTTI, t(67) = 6.548, p = .000, Cohen's D = 0.795 (large effect size). See the Table 13.

Table 13
Test Distribution of Performance on Staffing (Sta-3)

One-Sample T-Test on 'I feel respected and appreciated by my colleagues in the Institution' (Test Value = 3.40)							
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		Cohen's d (Effect size)
					Lower	Upper	
MoHERST+NAQAA	4.231	24	0.000	0.760	0.39	1.13	0.846
UTG	6.786	52	0.000	0.770	0.54	1.00	0.932
GC	7.514	64	0.000	0.815	0.60	1.03	0.932
MDI	4.412	27	0.000	0.743	0.40	1.09	0.834
GTTI	6.548	67	0.000	0.791	0.55	1.03	0.794

Source: Field work (November 2020).

However, in terms of respect they thought leadership had for them, even as there was still no significance between the groups, a one-sample t-test against the upper limit of neutrality showed that only MDI performed with an extremely large effect size, t(27) = 5.476, p = .000, Cohen's D = -1.035. MoHERST and NAQAA combined, t(24) = 3.564, p = .002, Cohen's D = -0.713 (large effect size), GC, t(64) = 4.778, p = .000, Cohen's D = 0.593 (lower large effect size), and GTTI, t(67) = 3.530, p = .001, Cohen's D = 0.428 (medium effect size) had statistical significance. However, UTG's score was not statistically significantly different from the point of neutrality. It could therefore be concluded that beside UTG, all the institutions had confidence in their leadership. See the Table 14.

Table 14
Test Distribution of Performance on Staffing (Sta-4)

One-Sample T-Test on 'I feel respected and appreciated by the leadership of my Institution' (Test Value = 3.40)							
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		Cohen's d (Effect size)
					Lower	Upper	
MoHERST+NAQAA	3.564	24	0.002	0.680	0.29	1.07	0.713
UTG	1.910	52	0.062	0.298	-0.02	0.61	0.262
GC	4.778	64	0.000	0.662	0.38	0.94	0.593
MDI	5.476	27	0.000	0.814	0.51	1.12	1.035
GTTI	3.530	67	0.001	0.482	0.21	0.76	0.428

Source: Field work (November 2020).

On the institution prioritising staff training and development, a post hoc comparison, using Games-Howell, revealed that both MoHERST and NAQAA combined and MDI scored significantly higher than GC and GTTI. The two; MoHERST and NAQAA combined and MDI seemed to have better training and development packages than the GC and GTTI.

On a one-sample t-test, UTG was the only institution without a statistical significance in its negative score against the upper neutrality limit. MoHERST and NAQAA combined and MDI performed above the upper neutrality point with a statistical significance, t(24) = 2.471, p = .021, Cohen's D = 0.494 (medium effect size), and t(27) = 2.317, p = .020, Cohen's D = 0.438 (medium effect size). GTTI (and GC under-performed statistically significantly, t(67) = -2.150, p = .035, Cohen's D = -0.261 (lower medium effect size) and t(64) = -2.981, p = .004, Cohen's D = -0.370 (medium effect size), respectively (see Table 15).

Table 15
Test Distribution of Performance on Staffing (Sta-5)

One-Sample T-Test on 'The Institution prioritised the training and development of staff' (Test Value = 3.40)							
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		Cohen's d (Effect size)
					Lower	Upper	
MoHERST+NAQAA	2.471	24	0.021	0.480	0.08	0.88	0.494
UTG	-1.061	52	0.294	-0.192	-0.56	0.17	-0.146
GC	-2.981	64	0.004	-0.492	-0.82	-0.16	-0.370
MDI	2.317	27	0.028	0.457	0.05	0.86	0.438
GTTI	-2.150	67	0.035	-0.356	-0.69	-0.03	-0.261

Source: Field work (November 2020).

It was concluded that MoHERST and NAQAA combined and MDI performed about the neutrality point. However, GTTI and GC indicated statistical significance that their staff's training and development had not been a priority.

Again, on the view that academic qualification enhanced staff competence, there was a general feeling that their work competences had been the result of their academic qualifications.

On a one-sample t-test, as illustrated in the table below, all the institutions performed exceptionally well above the upper neutrality point, except MoHERST and NAQAA combined, who, did not pass the statistical significance test, despite scoring higher than the upper point.

Table 16
Test Distribution of Performance on Staffing (Sta-6)

One-Sample T-Test on 'Academic qualification enhanced my competence at work' (Test Value = 3.40)							
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		Cohen's d (Effect size)
					Lower	Upper	
MoHERST+NAQAA	1.924	24	0.066	0.520	-0.04	1.08	0.385
UTG	8.300	52	0.000	1.109	0.84	1.38	1.140
GC	8.218	64	0.000	1.000	0.76	1.24	1.019
MDI	4.626	27	0.000	0.886	0.49	1.28	0.874
GTTI	10.410	67	0.000	1.056	0.85	1.26	1.262

Source: Field work (November 2020).

Finally, the view that on-the-job training enhanced respondents' performance at their workplace, only MDI had a difference with UTG that was statistically significant. MDI, therefore, performed better than the rest of the institutions.

Table 17
Test Distribution of Performance on Staffing (Sta-7)

One-Sample T-Test on 'On-the-job training enhanced my competence at work' (Test Value = 3.40)							
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		Cohen's d (Effect size)
					Lower	Upper	
MoHERST+NAQAA	2.952	24	0.007	0.680	0.20	1.16	0.590
UTG	-0.887	52	0.379	-0.155	-0.50	0.20	-0.122
GC	1.023	64	0.310	0.169	-0.16	0.50	0.127
MDI	3.379	27	0.002	0.671	0.26	1.08	0.638
GTTI	2.366	67	0.021	0.365	0.06	0.67	0.287

Source: Field work (November 2020).

A one-sample t-test indicated positive statistically significant difference with the upper neutrality point for MDI, t(27) = 3.379, p = .002, Cohen's D = 0.638 (large effect size), MoHERST and NAQAA combined, t(24) = 2.952, p = .007, Cohen's D = 0.590 (large effect size) and GTTI, t(67) = 2.366, p = .021, Cohen's D = 0.0287 (lower-medium effect size) on this assumption. GC performed higher than the upper limit without statistical significance, and UTG performed lower without a statistically significant difference. See the Table 17.

The conclusion was that MoHERST and NAQAA combined, MDI and GTTI believed that they had on-the-job programmes that enhanced their competence at work; however, UTG and GC did not have a statistically significant view on this, suggesting that the staff of these two institutions had not acknowledge whether they have been benefitting from on-the-job training.

4.2.3 Instructional Quality and Relevance

The sub-system that referenced the delivery of the curriculum was the instructional quality and relevance. The intention was to determine if the delivery of curricula in the institutions preceding the current reform period passed the quality and relevance tests.

The first item on the success of this sub-system was the respondent's opinion whether the institutions had the capacity to conduct quality assurance during the period under review. All the four training institutions performed below the upper neutrality point. The differences between the aversion from this point were not statistically significant with these institutions' mean scores; meaning it could not be assumed that the institutions could or could not conduct self-quality assurance.

Again on their opinion that their institutions would pass the test if exposed to international quality assurance, a one-sample t-test revealed that opinions from UTG scored lowest with a statistically significant different mean score from the upper neutrality point, t(52) = -3.390, p = .001, Cohen's D = -0.466 (medium effect size). GTTI (M=3.41, SD=1.18) on the other hand, scored slightly above the upper neutrality point, but there was no statistically significant difference. Therefore, it was concluded that the GTTI scored slightly higher, but this could be attributed to a chanced occurrence, and that none of the institutions was of the view that they could pass this test. See the Table 18.

Table 18
Test Distribution of Performance on IQR (IQR-2)

One-Sample T-Test on 'My Institution could pass the test of international quality assurance' (Test Value = 3.40)							
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		Cohen's d (Effect size)
					Lower	Upper	
UTG	-3.390	52	0.001	-0.551	-0.88	-0.22	-0.466
GC	-1.981	64	0.052	-0.323	-0.65	0.00	-0.246
MDI	-1.454	27	0.158	-0.293	-0.71	0.12	-0.275
GTTI	0.083	67	0.934	0.012	-0.27	0.30	0.010

Source: Field work (November 2020).

There was no significant difference between the opinions of the institutions' scores in terms of having the required number of qualified academic staff for the courses offered in those institutions. On a one-sample t-test to determine whether these scores had any meaningful differences with the upper neutrality point, it was observed that only GC's score below this point had a statistically significant difference, t(64) = -2.047, p = .045, Cohen's D = -0.254 (a smaller medium effect size). Other institutions performed less poorly, but there was no statistically significant difference from the upper neutrality point. It could be concluded that these respondents could not express with certainty that their institutions had the required competent staff for the courses they offered. See the Table 19.

Table 19
Test Distribution of Performance on IQR (IQR-3)

One-Sample T-Test on 'My Institution had the required number of qualified academic staff for the courses we offered' (Test Value = 3.40)							
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		Cohen's d (Effect size)
					Lower	Upper	
UTG	-1.649	52	0.105	-0.287	-0.64	0.06	-0.227
GC	-2.047	64	0.045	-0.338	-0.67	-0.01	-0.254
MDI	-0.370	27	0.714	-0.079	-0.51	0.36	-0.070
GTTI	-0.694	67	0.490	-0.106	-0.41	0.20	-0.084

Source: Field work (November 2020).

On the opinion that institutions have adequate teaching and learning resources, a post hoc comparison, using the Tukey HSD test, revealed that MDI scored significantly higher than GC and UTG. Even as they could not prove the hypothesis, some institutions performed worse than others, which had been proven statistically significantly. UTG and GC presented extremely large effect sizes of this difference, t(52) = -7.523, p = .000, Cohen's D =

-1.033 (extremely large effect size) and t(64) = -8.154, p = .000, Cohen's D = -1.011 (extremely large effect size). GTTI also performed statistically significantly lower than the neutrality point, t(67) = -4.640, p = .000, Cohen's D = -0.563 (large effect size). Though scored above the upper limit of neutrality, the other institutions showed no statistical significance in this difference. However, UTG and GC expressed with certainty that they did not have adequate teaching and learning resources, as indicated statistically significantly by their opinions. See the Table 20.

Table 20
Test Distribution of Performance on IQR (IQR-4)

One-Sample T-Test on 'My Institution had adequate teaching and learning materials for the programmes' (Test Value = 3.40)							
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		Cohen's d (Effect size)
					Lower	Upper	
UTG	-7.523	52	0.000	-1.117	-1.41	-0.82	-1.033
GC	-8.154	64	0.000	-1.169	-1.46	-0.88	-1.011
MDI	-1.745	27	0.092	-0.364	-0.79	0.06	-0.330
GTTI	-4.640	67	0.000	-0.679	-0.97	-0.39	-0.563

Source: Field work (November 2020).

A post hoc comparison, using Games-Howell revealed that UTG fared extremely low and scored significantly lower than GTTI, MDI and GC on the opinion that the institution had the required number of classrooms. Again, on a one-sample t-test, all the institutions performed poorly below the upper neutrality limit, and statistically significantly for that matter, with large effect sizes. The Table 21 illustrates these scenarios.

Table 21
Test Distribution of Performance on IQR (IQR-5)

One-Sample T-Test on 'Required number of comfortable classrooms to conduct lectures and seminars' (Test Value = 3.40)							
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		Cohen's d (Effect size)
					Lower	Upper	
UTG	-10.521	52	0.000	-1.457	-1.73	-1.18	-1.445
GC	-4.234	64	0.000	-0.738	-1.09	-0.39	-0.525
MDI	-3.459	27	0.002	-0.686	-1.09	-0.28	-0.654
GTTI	-4.293	67	0.000	-0.665	-0.97	-0.36	-0.521

Source: Field work (November 2020).

The respondents' view that students doing programmes in their institutions would go on an internship while still on the programme, a post hoc comparison, using Tukey HSD test, revealed that both GTTI and GC performed statistically significantly higher than UTG, and GTTI performed significantly higher than MDI.

On a one-sample t-test, two institutions showed a statistically significant difference positively from the upper neutrality point. These are GTTI, t(67) =4.280, p = .000, Cohen's D = 0.519 (large effect size) and GC, t(64) = 2.255, p = .028, Cohen's D = 0.280 (lower medium effect size). Both UTG and MDI did not significantly differ from the upper neutrality point in their negative performance. Therefore, it was concluded that only GTTI and GC passed this test and expressed that their students did go on internship while on the programme. See the Table 22.

Table 22
Test Distribution of Performance on IQR (IQR-6)

One-Sample T-Test on 'Students internship with the industry, as part of their programmes' (Test Value = 3.40)							
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		Cohen's d (Effect size)
					Lower	Upper	
UTG	-1.923	52	0.060	-0.287	-0.59	0.01	-0.264
GC	2.255	64	0.028	0.369	0.04	0.70	0.280
MDI	-0.821	27	0.419	-0.186	-0.65	0.28	-0.155
GTTI	4.280	67	0.000	0.556	0.30	0.82	0.519

Source: Field work (November 2020).

Finally, on the view that graduates from these institutions got employed shortly after their completion, a post hoc comparison, using the Tukey HSD test revealed that UTG performed statistically significant lower than GC. All the institutions thought that their graduates got gainfully employed shortly after completing their studies; however, concerning the upper neutrality point, only GC and GTTI showed a statistically significant difference from the upper neutrality point, t(64) = 5.472, p = .000, Cohen's D = 0.679 (large effect size) and t(67) = 2.708, p = .009, Cohen's D = 0.328 (medium effect size), respectively. Only GC and GTTI thought, with statistical significance from the upper limit of neutrality, that their graduates got employed shortly after completing their programmes. See the Table 23.

Table 23
Test Distribution of Performance on IQR (IQR-7)

One-Sample T-Test on 'Graduates' gainful employability shortly after completion of studies' (Test Value = 3.40)							
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		Cohen's d (Effect size)
					Lower	Upper	
UTG	1.041	52	0.303	0.147	-0.14	0.43	0.143
GC	5.472	64	0.000	0.738	0.47	1.01	0.679
MDI	1.351	27	0.188	0.243	-0.13	0.61	0.255
GTTI	2.708	67	0.009	0.306	0.08	0.53	0.328

Source: Field work (November 2020).

4.2.4 Research and Development

Opinions on research and development explored the potentials of both the institution and the individual respondents. Capacity development, in this case, was viewed from these two dimensions; and that is, the institution would need both a good network with the industry and a capacity at the individual level to respond to the consultancy and research needs of the industry.

On whether the institutions had research regulations that would help coordinate and manage research activities, the assumption of homogeneity was met through a Levene test, $F(3, 210) = 0.245$, $p = .865$, and the ANOVA showing significance, $F(3, 210) = 3.629$, $p = .014$; and a post hoc test, using Tukey HSD for multiple comparisons, revealed that GTTI out-performed UTG and GC in their opinion that the institution had legislative instruments to help govern research.

Even as they out-performed one another, a one-sample t-test was conducted to determine their performance from the upper neutrality point. It was observed that the scores were all statistically significantly different from the neutrality point, negatively indeed. See the statistics on the Table 24.

Table 24
Test Distribution of Performance on R&D (R&D-1)

One-Sample T-Test on 'Adequate governance instruments (Policies, Acts & Regulations) on both applied and basic research' (Test Value = 3.40)							
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		Cohen's d (Effect size)
					Lower	Upper	
UTG	-6.543	52	0.000	-0.909	-1.19	-0.63	-0.899
GC	-6.732	64	0.000	-0.923	-1.20	-0.65	-0.835
MDI	-2.807	27	0.009	-0.579	-1.00	-0.16	-0.531
GTTI	-2.581	67	0.012	-0.371	-0.66	-0.08	-0.313

Source: Field work (November 2020).

The only statistically significant difference existed between UTG and MDI on respondent's competences to research without supervision revealed through Tukey HSD of the post hoc. UTG took the lead in research competence, and this was significant when compared with MDI.

Also, a one-sample t-test observed that only UTG had a statistically significant difference above the upper neutrality limit, $t(52) = 3.673$, $p = .001$, Cohen's $D = 0.505$ (large effect size). Both GTTI and GC scored above the upper limit of neutrality, but there was no statistically significant difference from this limit. See the Table 25.

Table 25
Test Distribution of Performance on R&D (R&D-2)

One-Sample T-Test on 'Respondent's competence to conduct research without supervision' (Test Value = 3.40)							
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		Cohen's d (Effect size)
					Lower	Upper	
UTG	3.673	52	0.001	0.581	0.26	0.90	0.505
GC	1.813	64	0.074	0.262	-0.03	0.55	0.225
MDI	-1.154	27	0.259	-0.293	-0.81	0.23	-0.218
GTTI	1.079	67	0.285	0.159	-0.14	0.45	0.131

Source: Field work (November 2020).

Therefore, Only UTG respondents felt they had the competence to conduct research without supervision.

The publication of respondents in at least one peer-reviewed journal was reviewed. However, only a robust test of equality of variance and a Welch, $F(3, 96) = 16$, $p = .000$ indicated differences in the mean scores. Upon conducting multiple Games-Howell comparisons, it was observed that UTG significantly scored higher than MDI, GTTI and GC; and that GC also scored significantly higher than MDI.

Again, on a one-sample t-test, only UTG scored above the neutrality limit, but the mean score was not significantly different from the upper neutrality point. All the others – GC, GTTI and MDI scored low with statistical significance from the upper neutrality point. See the Table 26.

Table 26
Test Distribution of Performance on R& (R&D-3)

One-Sample T-Test on 'Respondent's publication in at least one peer-reviewed academic paper in a recognised Journal' (Test Value = 3.40)							
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		Cohen's d (Effect size)
					Lower	Upper	
UTG	0.248	52	0.805	0.053	-0.37	0.48	0.034
GC	-6.592	64	0.000	-1.108	-1.44	-0.77	-0.818
MDI	-9.702	27	0.000	-1.829	-2.22	-1.44	-1.833
GTTI	-10.479	67	0.000	-1.371	-1.63	-1.11	-1.271

Source: Field work (November 2020).

Respondents' opinions on their participation in a successfully concluded applied research for the industry did not show any statistical significance. On a one-sample t-test, all the institutions performed poorly and statistically significantly different from the upper neutrality limit, negatively. UTG was least averse from the opinion that the respondents successfully conducted applied research for the industry, t(52) = -2.913, p = .005, Cohen's D = -0.400 (medium effect size). See the Table 27.

Table 27
Test Distribution of Performance on R&D (R&D-4)

One-Sample T-Test on 'Respondent's participation in a successfully concluded applied research for the industry' (Test Value = 3.40)							
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		Cohen's d (Effect size)
					Lower	Upper	
UTG	-2.913	52	0.005	-0.570	-0.96	-0.18	-0.400
GC	-7.042	64	0.000	-1.031	-1.32	-0.74	-0.873
MDI	-4.255	27	0.000	-1.186	-1.76	-0.61	-0.804
GTTI	-4.938	67	0.000	-0.856	-1.20	-0.51	-0.599

Source: Field work (November 2020).

Opinions of all the sampled institutions did not pass the test that the respondents from the sampled institutions participated in a successfully concluded applied research for the industry. The respondents intimated that they were not participating in research for the industry.

Again, scores revealed a significant difference between the groups because institutions successfully conducted research and or consulting for the industry. Using Games-Howell, a post hoc comparison revealed that only GC had been out-performed statistically significantly by MDI, UTG, and GTTI. Again, both UTG and MDI performed above the upper neutrality limit, but none of their scores was statistically significantly different. GTTI and GC scored lower but that of GC was different statistically significantly, t(64) = -4.847, p = .000, Cohen's D = -0.601 (large effect size). This showed that GC must work on its relationship with the industry regarding consultancy. The Table 28 illustrates this.

Table 28
Test Distribution of Performance on R &D (R&D-5)

One-Sample T-Test on 'Institution had successfully conducting research and/or consulting services for the industry' (Test Value = 3.40)							
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		Cohen's d (Effect size)
					Lower	Upper	
UTG	0.113	52	0.910	0.015	-0.25	0.28	0.016
GC	-4.847	64	0.000	-0.738	-1.04	-0.43	-0.601
MDI	1.371	27	0.182	0.350	-0.17	0.87	0.259
GTTI	-1.340	67	0.185	-0.179	-0.45	0.09	-0.162

Source: Field work (November 2020).

On the respondents' view that industry would sometimes engage the institution for research and or consultancy services, a post hoc comparison, using Tukey HSD revealed that only GC had, once again, been out-performed statistically significant by MDI and GTTI. This result also showed that both MDI and GTTI had greater engagement from the industry than GC.

Again, only MDI scored above the upper neutrality limit, but the difference was not statistically significant. The rest scored below the upper neutrality point but only the score of GC was significantly different, t(64) = -5.082, p = .000, Cohen's D = -0.630 (large effect size). GC did not seemingly have engagement with the industry in terms of research and or consultancy services. The Table 29 explains these situations.

Table 29
Test Distribution of Performance on R&D (R&D-6)

One-Sample T-Test on 'The Industry engaging Institution for research and/or consultancy services' (Test Value = 3.40)							
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		Cohen's d (Effect size)
					Lower	Upper	
UTG	-1.878	52	0.066	-0.268	-0.55	0.02	-0.258
GC	-5.082	64	0.000	-0.723	-1.01	-0.44	-0.630
MDI	0.852	27	0.402	0.207	-0.29	0.71	0.161
GTTI	-0.365	67	0.716	-0.047	-0.30	0.21	-0.044

Source: Field work (November 2020).

Finally, the institutions' access to competitive research funding opportunities passed the homogeneity of variance using Levene test, F(3, 210) = 0.003, p = 1.000. The ANOVA showed F(3, 210) = 5.23, p = .002, indicating a significant difference between the mean scores of some of the institutions sampled. With a post hoc comparison, using Tukey HSD, it was revealed that GC had been outperformed significantly by both MDI and GTTI.

Again, the institutions all scored negatively against the upper neutrality point on the indicator of competitive research funding opportunities, and all the scores were significantly different. See the Table 30.

Table 30
Test Distribution of Performance on R&D (R&D-7)

One-Sample T-Test on 'Institutional access to competitive research funding opportunities' (Test Value = 3.40)							
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		Cohen's d (Effect size)
					Lower	Upper	
UTG	-7.168	52	0.000	-1.042	-1.33	-0.75	-0.985
GC	-9.624	64	0.000	-1.323	-1.60	-1.05	-1.194
MDI	-2.440	27	0.022	-0.543	-1.00	-0.09	-0.461
GTTI	-5.074	67	0.000	-0.679	-0.95	-0.41	-0.615

Source: Field work (November 2020).

4.2.5 Financing

Information on the financing of the subvented public higher education in the country had been collected from the academic institutions and related to the opportunities opened to these institutions to finance their operations. The three areas identified for the study were the tuition fees paid by enrolled students, the government's subvention through MoHERST; and the consultancy activities that the institutions could use to earn money for their operations.

There was no statistically significant difference between the institutions' scores because the institutions did not receive enough tuition to expense their major activities. A one-sample t-test observed that all the institutions scored low, expressing opinion that tuition fees could not finance their institutions' major activities. See the Table 31.

The scores on the opinion that the revenue from the government was not enough to expense their major activities did not show statistical significance between the institutions. A one-sample t-test was utilised, it was observed that all the institutions scored significantly lower than the upper neutrality limit. The large effect sizes in all the cases showed a popular opinion among all the sampled academic institutions that the government's subvention was not sufficient to finance their major activities. See the Table 32.

Finally, the opinion on revenue generated through consultancies and research was enough to finance major expenses could not pass the test of statistical significance. A one-sample t-test revealed that all the mean scores were significantly different from the upper neutrality point. See the Table 33.

Table 31
Test Distribution of Performance on Financing (Fin-1)

One-Sample T-Test on 'Revenue received from tuition fees enough to finance major expenses' (Test Value = 3.40)							
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		Cohen's d (Effect size)
					Lower	Upper	
UTG	-9.605	52	0.000	-1.381	-1.67	-1.09	-1.319
GC	-6.546	64	0.000	-1.092	-1.43	-0.76	-0.812
MDI	-5.484	27	0.000	-1.150	-1.58	-0.72	-1.036
GTTI	-11.313	67	0.000	-1.459	-1.72	-1.20	-1.372

Source: Field work (November 2020).

Table 32
Test Distribution of Performance on Financing (Fin-2)

One-Sample T-Test on 'Revenue received from government subvention enough to finance major expenses' (Test Value = 3.40)							
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		Cohen's d (Effect size)
					Lower	Upper	
UTG	-13.690	52	0.000	-1.777	-2.04	-1.52	-1.880
GC	-9.016	64	0.000	-1.369	-1.67	-1.07	-1.118
MDI	-5.978	27	0.000	-1.257	-1.69	-0.83	-1.130
GTTI	-15.676	67	0.000	-1.562	-1.76	-1.36	-1.901

Source: Field work (November 2020).

Table 33
Test Distribution of Performance on Financing (Fin-3)

One-Sample T-Test on 'Revenue generated through consultancies and research enough to finance major expenses' (Test Value = 3.40)							
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		Cohen's d (Effect size)
					Lower	Upper	
UTG	-12.282	52	0.000	-1.589	-1.85	-1.33	-1.687
GC	-11.173	64	0.000	-1.554	-1.83	-1.28	-1.386
MDI	-6.575	27	0.000	-1.114	-1.46	-0.77	-1.243
GTTI	-11.782	67	0.000	-1.385	-1.62	-1.15	-1.429

Source: Field work (November 2020).

4.3 Discussion of Findings

The proportions of administrative staff against the academic staff reflected the actual situation in the identified population, which implies the views expressed would represent more of the academic staff's views. However, there was an uneven representation of the management cadres. There was an unprecedented presence of junior-level management staff who naturally would not sit in senior management, board or senate meetings. Notably, governance takes a top-bottom approach in most institutions, especially the traditional ones, and the study might suffer a bias due to the undue presence junior level managers who have limited powers to effect changes in these institutions. However, the pursuit of statistical significance is an attempt to remedy this likely occurrence. Also, the large sample assumption of 'equal to or more than twenty-five participants' was met in all the cases reviewed.

The findings also revealed that most respondents from all the institutions were between 30 and 49 years of age. These were undoubtedly the active population range in the institutions. However, in academia, age comes with experience and increased competence. There had been policy proposals to increase the retirement ages of legal and academic professionals in The Gambia. This way, the country will continue to tap the capital in these experienced elderlies. Universities, especially under the current African demographic scenario, thrive well under a visible presence of professorial ranks that come with age. It takes a while to become a full professor. In short, this demographic dividend presented a prospect, but it also mimicked a limitation of seasoned intellectuality in the Gambia's higher education system.

Also, with the evidence of a skewed gender representation, it could be concluded that the sampled institutions did not generally have a desirable female representation. The Gambian population has a slightly higher female representation. There were policy targets to increase women participation in critical sectors' governance, including education; however, there is little hope that the higher education system will achieve this objective without an acceptable affirmative strategy with the current statistics.

It is also good practice that higher learning institutions internationalise by expanding their international student participation and having a considerable percentage of their academic staff from the diaspora. However, some of the sampled institutions were still traditional in this regard.

Another close observation was that the institutions like GC, MDI and GTTI were not offerring degree programmes. However, there was an impressive presence of staff with master's degrees. It showed some form of readiness to transit to higher education status or offer degree programmes; and required little efforts to build up the human capital that will match these demands. However, the irony was that GTTI presented an unprecedented number of lecturers with post-secondary certificates and diplomas who lectured programmes at the same post-secondary certificate and diploma level. That notwithstanding, many staff of this institution had been trained at the master's degree level, and some of these graduates subsequently are pursuing doctorate degrees elsewhere. This is apt for the transformation of GTTI into a university as outlined in the Gambia's development blueprint; the NDP 2018-2021.

Discussing the referential aspect of the data, it was observed that the academic institutions could not claim

they had engaged their staff adequately in the development processes of their strategic plans. The researchers also discovered that none of these institutions had a strategic plan during the period under review. The Ministry's own strategic plan was under a review; however, results indicated that its development process was not adequately participatory.

It was also observed that the sampled institutions' leadership did not understand their roles since there was an absence of clearly written plans for the institutions that could define roles and responsibilities (GoTG, 2011, 2016 & 2017). As indicated by the lack of endorsement on the second specific objective on governance, the implication is that leadership was not clear with their roles and therefore could not provide good leadership; a statement validated by the failures of several assumptions on governance.

The Ministry and NAQAA combined and GTTI ensured that employees delivered their tasks. Still, given the lack of trust in the sampled institutions' leadership, this was loaded with compliance. It would not be challenging to realise that the sampled institutions' leadership were not good team players. The case of UTG being the most pronounced, circumstantial evidence relating to leadership, coupled with the respondents' heightened view of associated dishonesty and a lack of strong moral principles on the side of the administration could best explain this. It must be reported that the case of GTTI had not been as bleak as the rest of the sampled institutions.

Generally, the sampled institutions had an undesired governance sub-system. Given the overarching and sensitive nature of governance in any system, there was little evidence to support the assumption that the period under review had a governance sub-system that could facilitate the successful implementation of higher education reform in the country.

Issues raised about the respondents' socio-demographic characteristics regarding workload and remuneration also featured prominently under the staffing assumptions. Foremost, there was an acute lack of work-related tools in the sampled institutions, which agrees with the finding of literature (GoTG, 2011; 2017). Lack of work-related tools, among other things, impacts on the graduates and the evident mismatch expressed severally in the literature.

Apart from MDI, all the other institutions did not have desirable benefits packages. This is, probably, because MDI had a lean staff population and depended extensively on part-time lecturers to deliver its courses. It could also be attributed to the seemingly good incentive packages accorded to the limited staff population. In the other institutions, there was high turnover or attrition of staff due to low packages, and again, this was reported in the literature (GoTG, 2016; 2017).

On the other hand, the respondents manifested good team spirit among themselves, and similarly, they reported the sense of appreciation and respect enjoyed from the leadership. However, UTG respondents presented a high level of disagreement with the assumption that they were respected and appreciated by their leadership.

Another positive finding was the training and development provided by the Ministry and NAQAA combined and MDI. Other institutions scored low on this assumption, establishing negative staff sentiments and a justification for their poor performance on the job, especially when the institution could not meet the assumption on resource provision, and the evidence on staff opinions for more remuneration.

It could be taken with a pinch of salt that all the institutions, except the Ministry and NAQAA combined, met the assumption of qualifications enhancing their competence at work. Pitting this assumption against that of the on-the-job training, it's plausible to hold the notion that the respondents were still expressing their dissatisfaction with their institutions' limited on-the-job training opportunities. It could also be attributed to the likely grievances; like the lack of trust assumption described, possibly, by the same set of respondents.

Therefore, it was orderly for the institutions to provide training opportunities for their staff. With low staff morale and capacity, it would be difficult to institute a responsive higher education system. The findings revealed that the system did not leave a good legacy for a viable reform process.

Quality was a significant challenge in the higher education system of The Gambia. The respondents' confessionary statements on the lack of tools, opportunities for good incentive packages and training and development significantly impacted the quality and relevance of instruction in the institutions. Notably, the absence of capacity in all the institutions for self-assessment and the lack of confidence to have programmes exposed to international accreditation process explained the absence of quality and relevant instructional delivery of programmes in the sampled institutions. Literature also revealed that the initial assessment of these sampled institutions' standards left a lot to be desired.

This is corroborated by the findings that the lecturers in the sampled institutions were not adequately qualified to teach the courses offered, explaining why engaging numerous part-time lecturers and technical assistance and allowing staff to teach level programmes not beyond their qualification levels. Notably, many staff had been trained during the recent reform, and it was envisaged that would change in the shortest possible period.

Again, the assumptions on adequate teaching and learning materials and the presence of comfortable classrooms had not been met (except for GC and GTTI on the classrooms). This also explained the low capacity for quality delivery and the aversion from international accreditation of programmes. However, the sector had launched programmes of classroom construction and equipment provision, and it was hoped that this would change the pre-reform *status-quo*.

GC and GTTI both met the assumptions on internships and graduates' gainful employability. While the need for technician has always been there, GC trains people who are already associated with jobs like education, agriculture and health. These sectors would send candidates to this institution for training. It could be understood why they fared well in the internship and employability indicators. Previous studies revealed that graduates from the UTG could get absorbed much faster than those from other institutions (except for GC), however, with the seeming saturation of the labour market with graduates that could match the commensurable jobs, and not those graduates of the humanities, social sciences and the management sciences, this has not been the case. This situation is a leading cause for the policy decision of a 65 per cent turn-around in the recent education reform, which must consider and emphasise programmes that should earn the graduate a job and give them the opportunities to become entrepreneurial, since commensurable jobs are dwindling.

None of the assumptions was met on research and development, except the one on respondents' research capacity, which was met by only UTG. It was evident in the respondents' socio-demographic characteristics that UTG had competent lecturers who could publish in peer-reviewed journals, and without undue supervision.

Findings in the literature show shallow research penetration both in Africa as a whole, and specifically, The Gambia. The inability to cement a viable relationship with the industry created a significant funding gap in the institutions' budgets. Unless capacities were built in this area, they would continue to miss the numerous competitive research funding opportunities. There was little done in the period under review in establishing a sustainable research culture, both nationally and in the institutions. That notwithstanding, the upcoming highly trained graduates have the potential to transform this mishap in the research and development sub-system.

Institutional research competence and research funding are both linked to the capacity of lecturers to do research. From the review of the situation, the Gambia's higher education institutions were not doing well. The literature explains that the Chinese model provided competitive funding to boost research and development (Varghese & Martin, 2014). Again, in the World Bank 2014 report, it was argued that recent reforms in the higher education sector brought human capital formation closer to the industry's demands and placed this industry and research in the centre of higher education.

Tuition fees and subventions from the government were not adequate to fund the activities of the sampled institutions. There was a need for alternative resource mobilisation. This had been thoroughly discussed in the literature. It was observed that the Chinese, Japanese and other reformists adopted strategies such as cost-sharing, industry engagement and other forms of commercialisation to fund their reform activities. The Gambia has substantial untapped resources and opportunities in both the public and private sectors that could go all the way to support the reform and keep it sustainable. Discussions on the financing assumptions brought to mind the absence of strategic planning in the sampled institution. It would be difficult for the leadership to ensure that the institutions' objectives were achieved. Another issue that showcased in the quantitative analysis was the limitation of leadership in executing their responsibilities, which means higher education could not lift above the current status under the leadership described thus. There had also been a lack of commitment in the industry. Also, the governance system could not be scored positively on accountability, openness, trust, and moral conduct.

CONCLUDING REMARKS

The situational analysis had proven with statistical significance that the institutions were not ready for the reform; amply manifested severally through some scientific assessment of assumptions. It would mean the institutions, including The Gambia government, will have to do a lot to revive or stimulate these staff to take the business of higher education seriously. The blame for the institutions' poor performance on almost all the specific objectives was on leadership.

The study concluded that there were still issues of parity in the academic institutions concerning lecturers and administrators. Again, internationalisation showcased as a challenge, and the researcher observed that some institutions were still traditional in this regard. Remunerations were reported low in all the institutions, and there was a common desire to increase the remunerations to acceptable standards, even if this would mean an increase in the workload.

The tertiary institutions already have a substantial number of academic staff with master's degree, which means they could start modestly with the undergraduate programmes as part of their transformation. However, these capacities were not enough for their programmes; hence, some use holders of post-secondary certificates and diplomas to teach post-secondary certificate and diploma programmes.

The leadership in the institutions had shown inadequacies. Staff felt not respected and appreciated, and there was a seeming absence of accountability in all the institutions' governance structures. Some key governance documents were still missing in the institutions.

Also, the staff of the institutions reported lacking work-related tools during the period under review. The researchers observed that this, coupled with other staffing issues such as low benefits packages, distrust in the leadership, *et cetera*, had not adequately prepared the higher education sector for the reform.

The issues of quality had been a significant setback in almost all institutions. The institutions had not capacitated

the staff adequately to take up the responsibility of delivering relevant and quality instructions during this period; at least, to the desired magnitude. The study revealed low qualification levels, absence of adequate instructional tools, and a lack of a robust industry-university collaboration which could have facilitated placements and gainful employment.

Research penetration in the institutions had been shallow. Regulations that could have prepared the institutions for an ideal level of penetration had been absent. They could not get the required engagement from the industry, which might be due to the inadequacies of capacity to conduct research.

The institutions relied extensively on tuition fees and subvention from government. These have not been forthcoming; thus, these institutions reported the inability to finance their significant activities. The institutions could have remedied this inadequacy by engaging in research and consultancy for the industry.

It is imperative to make some policy recommendations. First, there is a need for some affirmative action to be taken up by the ministry responsible for women and children on parity. Increased women participation in the higher education system will encourage more female students to get into the higher learning programmes, especially the STEM, health and agriculture areas. Award of scholarships to excelling female students would be a good point of departure.

Universities all over the world are internationalising. Having a reasonable number of professors from the diaspora is suitable for any higher learning institution. These internationals bring along diversity and prepare the students to become global citizens. They also bring along good practices. However, the remuneration packages must be matched with international standards.

There was a high staff concentration with masters and doctorate degrees in GC and GTTI. The system should try to match resources and create a system that would allow cross-institutional delivery of courses and use of resources. This will be more efficient and help accelerate the reform processes.

The governance structures must be given prominence in the activities of government and the institutions. Besides developing appropriate regulations, there should be regular training of these bodies to understand their roles and responsibilities and align the activities of these institutions with the growing trends in the global higher education landscape.

Staff members must be motivated adequately to do their work effectively and efficiently. Incentive packages should include housing and mobility. The Gambia Social Security and Housing Corporation has been active in this regard and could collaborate with the system to provide housing for staff members. Also, the Gambia Teachers Union could be consulted to make this dream come true. Of course, the salaries must be harmonised with the subregion to avoid continuous staff attrition.

Quality has been a significant issue in the higher education landscape. This has a bearing on many related factors. NAQAA should be strengthened in terms of capacity to execute its function of quality assurance and programme accreditation. At the level of institutions, quality assurance units should be set up to ensure compliance with standards. There is also a need for the government to create closer collaboration between the industry and the institutions. Gambia Ports Authority, the Utility Company, and many other institutions could directly work with the institutions on placements and research and consultancy. GTTI can manufacture farm implements. This could be harnessed to place students in the outposts of the ministry responsible for agriculture and national infrastructure on an internship and generate enough revenue for the institution to finance its activities.

Also, MoHERST should develop a research policy and set up ethical committees on several disciplines. There should be more funding for research to create a competitive research fund for lecturers and other researchers. At the institutions' level, research methodology should be introduced as low as the undergraduate level so that every graduating student would have to write on a research topic. Excelling graduates should be recruited to become the set of prospective researchers for the system. Also necessary is the type of research that will inform not just policy but curriculum. Teaching methodologies should be researched to capture best andragogical and pedagogical strategies.

Tuition fees and subventions from the government will never be enough for relevant and quality instructional delivery. There must be other means of funding. The UTG started a programme on its alumni, which must be taken seriously to harness their potential. Ministries, departments and agencies, and the private sector should have collaborations in paid placements, manufacture of farm and other implements, research into their core mandates and any other that will add value to these institutions, and at the same time, create revenue for the institutions. The government must also come up with loan schemes as a form of cost-sharing.

The Gambia government should reprioritise its objectives. The country has been consistently doing the same things and without much attention to details. That is seemingly the only way the country and the African continent, in general, can make a difference in the manufacturing industry. It is time the country delves into the realm of science and technology and move away from the old ways of doing things. Those old ways only cause us valuable resources at the expense of high efficiency in the higher education system. A nation's seriousness in financing higher education determines its resolve in getting out of poverty and decadence.

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