



Moderating Role of Administrative Support between Curriculum Management and Graduates Programs Viability An Evidence from Indonesian Educational Institutions

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Received: December 19, 2022; reviews: 2; accepted: January 16, 2023

Abstract

The research objective was to check the mediating influence of institutional effectiveness (INE) among curriculum management (CUM) and graduates programs (GRP) viability. The research also tested the moderating effect of administrative support between CUM and GRP viability. The research was conducted on Indonesia educational institutions where data was collected from the top management via self-administered questionnaire by using convenient sampling technique. Moreover, quantitative deductive approach was used and applied cross sectional research design. The results indicate that CUM has positive and significant effect on GRP viability and INE. The INE also has positive and significant effect on graduates' programs viability. INE also significantly mediates between CUM and GRP viability. Administrative support also positively moderates between CUM and GRP viability. The research with the significant effect findings which helps to increase new research and also this research become pioneer study because neither the management support as moderating variable nor INE have been examined as a potential mediator variable in the association between CUM and program outcomes in prior research particularly in Indonesian context. These few crucial information gaps have been found, and the current study fills them with important discoveries. The research is also beneficial for the policy makers and other stakeholders to know about importance of CUM to increase GRP.

Keywords

Institutional effectiveness, Curriculum management, educational institutions, Indonesia

Introduction

The term graduate programs (GRP) "viability of" refers to all actions taken and resources given by universities to make sure that GRP are effectiveness fully tailored to achieve stated goals and maintain continuity. Viability as a nation applies towards the quantifiable results of all activities and inputs placed inside the programs that could let shareholders analyze if stated objectives were accomplished and regularity of achieving objectives, which could also aid in forecasting future occurrences. Generally speaking, If GRP has proven beyond a possible suspicion whether they possess facilities, learners, and teachers of requisite caliber for satisfied the different requirements of courses currently and in future, then could be financially sustainable. GRP prepare students to develop strong research and problem-solving techniques. Following international best practices, efficient management of these programs should encourage effectiveness, increased enrollment, competitiveness, and viability. In light of these definitions, it appears that graduates from GRP won't necessarily lack the competitive capabilities necessary for succeed within changing society. It will be challenging for them to significantly participate in development of innovative knowledge, the solution of issues, and the production of testable data for innovative uses, all of which are important indicators of the effectiveness of research (Odigwe & Owan, 2020). As a result, this calls into question the idea that universities are centers for advanced learning and are objects of knowledge production. Despite the government's shortcomings, both internal and external factors contribute to Indonesia's higher education system's inefficiency (V. Owan & B. Bassey, 2021).

However, in recent years, stakeholders in education in Indonesia and elsewhere have started to seriously worry about the viability of GRP. Enrollment rates at universities typically are on the decline. Between 2010 and 2015, enrollment trends at three federal universities in Indonesia experienced significant fluctuations, according to a study (Abubakar et al., 2022). Universities will face new challenges as a result of the anticipated increase in enrollment, which will require more staff and material resources to address. The quality of the majority of postgraduate students graduating from some public universities in Indonesia appears to be declining, despite the fact that enrollment in universities is rising and will continue to do so. Graduate students must be competent to perform tests in the laboratory as well as write up empirical research. Additionally, In order to ensure that latest findings remain communicated in reputable scientific settings, like publications, conferences, and digital archives, they must be capable of actively interact.

Numerous graduate students don't appear very motivated in picking up such essential abilities, what is common tends to appear to deviate from the norm. For instance, some studies in higher education have shown that due to unethical behavior, subpar performance evaluation, and brief vocational training programs, After-school output among most graduates have continued to deteriorate in quality

(Odigwe, Offem, & Owan, 2018; Owan & Agunwa, 2019). Society is impacted by this downward trend because it places a high value on graduates as agents of socioeconomic advancement. The problems with post GRP also appear to be related to teachers instructing students. For instance, very little information communication technology was used by Indonesian university academic staff for managing teaching records and conducting research (Odigwe, Bassey, & Owan, 2020; Owan & Ekpenyong, 2022).

As a result, Instead of computer equipment that give a greater degree of dependability, archaic techniques that become unsafe and hard to obtain being employed to handle information (Ogbeche, Emeribe, Asu-Okang, Etim, & Owan, 2021). More specifically, the adoption of inefficient academic and research management practices among university graduates appears to be on the rise. Poor supervising and direction of graduate students performing study was also noted as a contemporary concern for research methods used by other academics (Hon Kam, 1997; Muraraneza, Mtshali, & Bvumbwe, 2020). Similarly, throughout Bolonia, Spain, curriculum has been drastically altered to generate highly specialized professionals, notably now on Master's degree (Costa, Laborda, & García, 2014). This gives the impression that graduate program management issues are gradually becoming a global concern. The Indonesian government is also to blame for the current state of affairs. Teacher's mismanagement issues include delayed promotions, inconsistent salary payments, and inadequate educational support, including research grants and other perks (Anakwe, 2002; Bassey, Owan, & Eze, 2019). Universities in Indonesia appear to lack adequate funding for their GRP. Learning objectives don't seem to be fully implemented and assessed. Physical infrastructure appears insufficient to ensure smooth operation. The frequent occurrence of national security issues compromises employee safety. Ekaette, Owan, and Agbo (1988) and Odigwe and Owan (2009), also argued that the poor condition of lecture halls with insufficient amenities like inadequate lighting, ventilation, instructional materials, and learning resources is evidence of underfunding (Mbon et al., 2020). The ones that are readily available frequently give the impression that they are in poor condition due to improper maintenance. These evidences indicates curriculum management (CUM) becomes in important factor for the graduation management (Owan, Emanghe, et al., 2022).

Also, previous studies shown that when the current CUM is properly managed then the institutional effectiveness (INE) is also increased which helped to increase the GRP viability (Owan, Emanghe, et al., 2022). Previous studies have majorly focused on direct effect of CUM on GRP viability (Cottrell, Linger, & Shumway, 2004; Owan, Akah, et al., 2022; Owan, Emanghe, et al., 2022). Furthermore, CUM also has direct effect on INE (Ekaningrum, Widodo, Wasino, & Sugiyo, 2018; V. J. Owan & B. A. Bassey, 2021). While has little attention n mediating effect of INE between CUM and GRP viability. Moreover, previous researches also have little attention on indirect moderating effect of administration support between CUM and GRP viability. Extant literature also indicates that when

the administrative support in increase in CUM then the GRP viability also increased (Welsh & Metcalf, 2003). After seeking the significance of administrative support and seeking previous gaps in mind, current study used administrative support as a moderating variable. Also, previous studies have major focused on other countries while have little attention on Indonesia educational institutions (Owan, Emanghe, et al., 2022; Welsh & Metcalf, 2003). In this regards, research objective is to check the mediating effect of INE between curriculum programs and graduates programs (GRP) viability. The research also tested the moderating effect of administrative support between CUM and GRP viability of Indonesia higher education institutions.

Present research added a body of literature in the extant literature. Neither the administrative support as moderating variable nor INE have been examined as a potential mediator variable in an association between CUM and program outcomes in prior research particularly in Indonesian context. Because of these several identifying knowledge gaps, present study may pave new ground. The research is also beneficial for the policy makers and other stakeholders to know about importance of CUM to increase GRP. The research was divided in the five chapters, introduction where main motivation and research gaps were discussed, literature review where studies from both of theoretical and empirical perspective were discussed, research methodology where main research paradigms and research approaches were discussed, data analysis and findings where main research hypothesis are discussed. Lastly, discussion and conclusion are discussed at the end of the study where results are supported with previous studies.

Literature Review and Hypothesis Development

In order to plan and carry out "institutional effectiveness (INE)" operations and raise overall viability of "graduate programs (GRP)", institutions must first win the attention and encouragement of organizational stakeholders, notably "curriculum management (CUM)". Widespread university engagement in INE operations is required by accreditation standards as well as review procedures. For instance, the "Southern Association of Colleges and Schools' (1998)" criteria and interpretative rules expressly ask for interactive activities including academics, employees, and managers. A cultural implementation of INE operations seems uncertain unless there is institutional agreement on the relevance of INE initiatives, involving staff engagement and assistance (DeCaprio et al., 2005; Friedlander & MacDougall, 1990; Ngoepe, Jacobs, & Mojapelo, 2022). Faculties have become less likely to participate in INE efforts, according to peer reviewed literature including policy analysis on the execution of INE programs in institutions of higher education. Nichols (1995) and Beziau (2022) faculty opposition is considered to be the most major impediment for adoption of INE initiatives. In order to maintain accurate and up-to-date records of available courses, CUM employs a number of different operational methodologies. Administrators play a pivotal role in ensuring that managers of curricula dedicate their time and energy to the development, implementation, and evaluation of curricula (Owan & Agunwa, 2019). Important

criteria for CUM decisions should be based solely on sound pedagogical considerations. They should fit in with the overall priorities of national and state education policies. Large amounts of evidence are required to back up decisions with long-term consequences. Decisions should be made in a collaborative and participatory manner, with input from all relevant parties, thus it is important to consider how quickly new knowledge is being produced (Beziau, 2022; Verma et al., 2018). Curriculum development been impacted by underlying issues, according to studies conducted there. For instance, research has shown that various aspects of programming, including content, pedagogy, and assessment methods, are inadequate, theoretically unworkable, and need to be reviewed (Emeh, Isangadighi, Asuquo, Agba, & Ogaboh, 2011; Ngoepe et al., 2022). To a similar extent, another study demonstrated that the vast majority of educators do not update their pedagogical practices to reflect curricular shifts; funding constraints have a negative impact on implementing the full science curriculum (Tshiredo, 2013). It appears that the quality of instruction is being impacted by these problems in CUM. The quality of instructional supervision and teacher motivation has been shown to have a strong correlation with how well a curriculum is managed (Owan, Emanghe, et al., 2022). Semi-experimental studies showed that implementing The suggested curricular integration technique enhanced pupils' academic performance (Alghamdi, 2017). As present research is relevant because it suggests that graduates' programs are more likely to succeed if they see positive student achievement as a result of curriculum integration. The present research, however, assumes that the designed curriculum has already been implemented (ADAM & BIO, 2020), and that it simply requires effective management.

Also, previous studies shown that when the current CUM is properly managed then the INE is also increased which helped to increase the GRP viability (Owan, Emanghe, et al., 2022). Previous studies have majorly focused on direct effect of CUM on GRP viability (Cottrell et al., 2004; Owan, Akah, et al., 2022; Owan, Emanghe, et al., 2022). In addition, CUM also has direct effect on INE (Ekaningrum et al., 2018; V. J. Owan & B. A. Bassey, 2021). While has little attention mediating effect of INE between CUM and GRP viability. Also, there is limited evidence that INE activities have led to positive outcomes; there has been a rising number of studies outlining barriers towards the effective delivery of such efforts. A shortage of faculty engagement, shortcomings regarding assessment instruments, and badly planned processes for applying evaluations significantly contribute (Arrohmatan, Mualifah, Harahap, & Murtafiah, 2022; Palomba & Banta, 1999). There is only a superficial underpinning for INE activities despite their widespread adoption in American universities (Gray & Banta, 1997; Palomba & Banta, 1999). Moreover, previous researches also have little attention on indirect moderating effect of administration support between CUM and GRP viability. Extant literature also indicates that when the administrative support in increase in CUM then the GRP viability also increased (Arrohmatan et al., 2022; Welsh & Metcalf,

2003). After seeking the significance of administrative support and seeking previous gaps in mind, current study used administrative support as a moderating variable. Thus, as per previous gaps, present research has following research hypothesis.

H1: *Curricular management have positive effect on graduate's programs viability.*

H2: *Curricular management have positive effect on institutional effectiveness.*

H3: *Institutional effectiveness has positive and significant influence on graduate's programs viability.*

H4: *Institutional effectiveness significantly mediates between curriculum management and graduates programs viability.*

H5: *Management support significantly moderates between curriculum management and graduates programs viability.*

Research Methodology and Conceptual Framework

The research investigates the impact of curriculum management (CUM) on graduate programs (GRP) variability with moderating effect of administrative support and institutional effectiveness (INE) as a mediator. The research was experimental in nature with cross sectional research design (Yates, 1937). The respondents of the study were the administrators of higher educational institution in Indonesia. There were 50 deans and associate deans and 100 were other head of departments. These respondents were selected because they are actively involved in the administrative position and they know better about the department education system. The questionnaire was distributed among the respondents using convenient sampling technique. The CUM was measured by five items which were comprised of from the study of (Owan, Emanghe, et al., 2022), INE was measured by eight items which were comprised of from the study of (Owan, Emanghe, et al., 2022), graduates programs viability were measured by eight items which were comprised of from the study of (Owan, Emanghe, et al., 2022), and administrative support was measured by three items which were comprised of from the study of (Clark Jr, Jones, & Armstrong, 2007). These items measured on five point Likert Scale which ranged 1 for strongly disagree and 5 for strongly agree. The study variable are predicted in the following research framework.1 below.

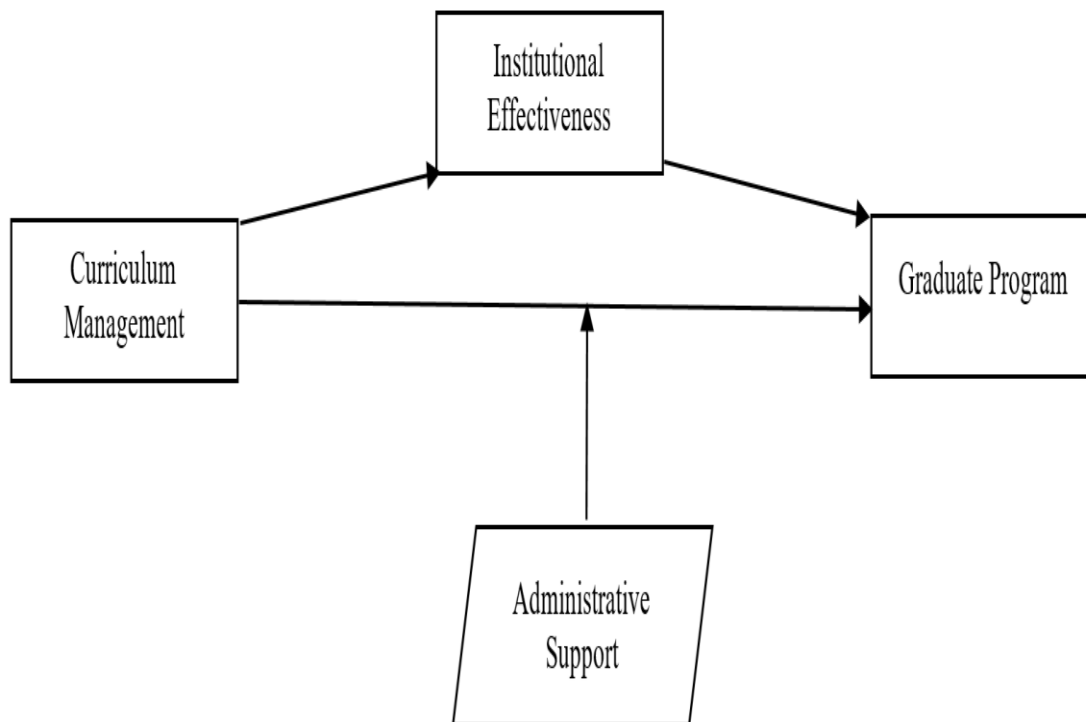


Figure.1: Conceptual Framework

Data Analysis and Interpretation

Descriptive Statistics

The Table 2 anticipated values have demonstrated the descriptive findings of the investigation. The mean values of curriculum management (CUM) is 3.785 which shows which shows that CUM is an important indicator for the graduation programs. On the other hand, institutional effectiveness (INE) mean values is 3.721 which also indicates that INE is an important indicator for the organizational performance. The mean values of administrative support (ADS) is 3.452 which shows that respondents are giving importance to the ADS to increase the graduation programs. These values are predicted in the following Table.1 below.

Table.1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
CUM	300	2.00	5.00	3.785	.70108
INE	300	2.00	5.00	3.721	.65667
ADS	300	1.00	5.00	3.452	.76501
GAP	300	1.00	5.00	3.673	.76891

Note: INE-institutional effectiveness, CUM-curriculum management, GRP-graduate programs, ADS-administrative support.

Inferential Statistics

In order to test the common method variance (CMV) employing three different methods, we followed the methodology presented by (Rodríguez-Ardura

& Meseguer-Artola, 2020). Initially, using SPSS, we do a simple Harman factor model, which reveals a variance of 42%. Due to the fact that this value is less than the 50% criterion, it proves that research conclusions have no impact on CMV. Secondly, we linked the common element analysis and where we drop the items which were low from recommended values. In addition, The common method bias was 30%, which was lower than 50%, indicating that there is no problem with standard technique variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). This shows that current research did not have any issue of common method biased. Consequently, it could be concluded that common method biased did not have any issue on the research findings.

After this testing, the research was validated through the reliability and validity of research tool via using the Cronbach’s alpha, factor loadings, Average extracted reliability as well as composite reliability. The recommended value for the factor loadings should be greater than 0.5, cronbach’s alpha values should be greater than 0.7, average extracted value should be greater than 0.5 and the value for composite values must exceed 0.7. All of the numbers in Table.2's anticipated values remain higher than from recommended values which show that questionnaire fulfill the criteria for convergent validity. In addition, for the purpose of determining whether or not the discriminant analysis was valid, a comparison of the inter-correlations and the square root of AVE are carried out through the Fornell and Larcker. Table 3 shows that AVE's square root are greater than all variables' inter-correlations, which demonstrates that the measures have a high degree of discriminant validity.

Table.2: Convergent validity

Variable	Loadings	SE.	t-value	R²	AVE	CR
Curriculum Management					0.686	0.865
CUM1	0.810	0.0	17.452**	0.82		
CUM2	0.960	0.04	18.452**	0.71		
CUM3	0.760	0.05	13.986**	0.52		
CUM4	0.780	0.04	18.783	0.62		
CUM5						
Institutional effectiveness					0.751	0.900
INE1	0.783	0.07	15.891	0.84		
INE2	0.884	0.04	21.427**	0.71		
INE3	0.893	0.05	19.990**	0.71		
INE4	0.783	0.045	20.35	0.561		
INE5						
INE6						
Administrative Support					0.630	0.872
ADS1	0.850	0.14	10.854**	0.47		
ADS2	0.840	0.08	14.859**	0.76		
ADS3	0.920	0.10	14.233**	0.83		

Graduations Programs					0.615	0.863
GRP1	0.880	0.15	11.893**	0.37		
GRP2	0.970	0.13	10.744**	0.71		
GRP3	0.720	0.14	10.007**	0.71		
GRP4	0.500	0.18	9.964**	0.69		
GRP5						
Note: INE-institutional effectiveness, CUM-curriculum management, GRP-graduate programs, ADS-administrative support.						

Table.3: Discriminant Validity

	CUM	INE	ADS	GRP
CUM	0.828			
INE	0.231	0.876		
ADS	0.387	0.175	0.783	
GRP	0.281	0.151	0.431	0.784
Note: INE-institutional effectiveness, CUM-curriculum management, GRP-graduate programs, ADS-administrative support.				

Regression Results

There is a direct causal relationship between curriculum management (CUM) and institutional effectiveness (INE). The graduate programs (GRP) viability is also directly impacted by CUM. The viability of GRP also significantly and positively affected by INE. The connection between CUM and graduate program viability is also mediated by the institutions effectiveness. This mediation effect was calculated using a bootstrapping solution's total and indirect effects. The research found that the effectiveness of GRP is significantly impacted by the way in which their curriculum is managed. However, it was found that CUM has a statistically significant indirect effect on the viability of GRP via the mediation of INE. As a result, the strength of the institution played a pivotal role in mediating the connection between CUM and the long-term GRP viability. On the other hand, the administrative support also positively and significant moderates between CUM and GRP visibility. These above results are predicted in the following Table.4 below.

Table.4: Hypothesis Results

Relationships	β	T-Statistics	P Values
INE<-CUM	.54	8.98	.000
GRP<-CUM	.35	4.47	.000
GRP<-INE	.16	2.29	.020
GRP<-INE<-CUM	.90	7.35	.000
INE<-CUM*ADS	.96	6.49	.000
Note: INE-institutional effectiveness, CUM-curriculum management, GRP-graduate programs, ADS-administrative support.			

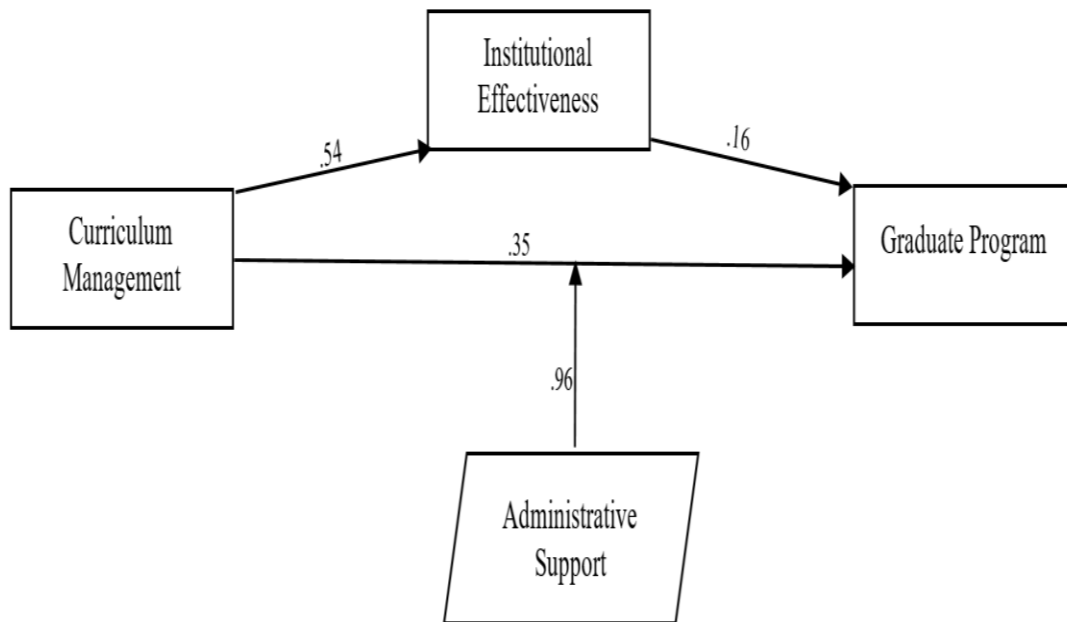


Figure.2: Hypothesis Results

Discussion and Conclusion

This quantitative study's goal was to establish how much graduate program effectiveness can be predicted by university curriculum management (CUM). INE and administrative support use as mediator and moderator respectively between predictor and outcome variables. This research demonstrated that the INE directly related to how well it's CUM. Based on these findings; it appears that higher education institutions would benefit greatly from better planning and implementation of their curriculum content. This finding is hardly surprising, given that educating students is a primary motivation for creating educational institutions. The curriculum is the plan that specifies the CUM requires taking into account societal and student needs at the outset of curriculum design, engaging stakeholders in the development of curriculum plans, putting those plans into action, and assessing their effectiveness. This supports the conclusion of an earlier study that CUM significantly affects the level of instructional supervision and teacher motivation (Owan, Emanghe, et al., 2022). This result is consistent with the conclusions drawn by Torkzadeh and Keshavarzi (2018b), who evaluated a medical education program and found that it led to significant gains in goal attainment, country self-sufficiency, successful execution and educational system improvements, social advancement, tactical efficiency, including students' understanding, views, and talents. Quasi-experimental research also showed that the suggested technique of curricular integration improved students' academic performance (Owan, Emanghe, et al., 2022). Furthermore, Torkzadeh and Keshavarzi (2018a) discovered that planning for the desired strategy's implementation necessitates taking into account the characteristics underlying

higher education's surroundings and formulation of a workable vision and goal. By solving this major issue, we can improve environmental accountability, knowledge production and development, the effectiveness of educational programs that focus on environmental dynamics and capacity, and the coherence and correct development of these programs.

Secondly, research found that effective CUM has a substantial direct impact on GRP viability. The findings imply that the effectiveness of GRP is strongly influenced by the degree to which curriculum is controlled. This finding supports the hypothesis that effective CUM can improve the long-term viability of GRP in universities. According to the study's criteria, effectiveness of GRP are those that receive substantial funding for research, provide ample opportunities for mentorship, consistently acquire appropriate facilities, generate patentable results, and maintain a consistent student body. The ability to show these metrics is essential to the effectiveness of any graduate program or institution. For instance, in order to generate patentable research, students should have given access to an excellent study curriculum that has been developed and executed in order to provide them the proper mindset and training for carrying out challenging studies. In order to achieve its objectives, CUM may potentially expand enrollment if it offers enticing academic and extracurricular facilities. The second finding is in line with the work of Owan and Agunwa (2019), who also discovered a considerable CUM proxy forecast on viability of graduate programs. This finding is consistent with the argument made by Owan and Ekpenyong (2022) that strong school sustainability depends on strong ties between the local community and the school.

Thirdly, this research showed that the effectiveness of GRP is significantly impacted by INE. The finding suggests that GRP in universities can become sustainable if INE is enhanced. Because effective educators, students, and administration all contribute to the effectiveness of a school, this finding makes sense (Bassey et al., 2019). If faculty, graduates, and administration are not efficient in their service delivery, the GRP will fail. Given that INE are those that achieve their stated missions, resolve conflicts, foster unity among employees, protect their physical surroundings, and encourage a culture of high-quality research and publication, the third hypothesis' finding should come as no surprise. Indicators such as these are crucial to the long-term viability of graduate education. As a result, these courses may be better positioned to draw in research funding, sustain steady student enrollment, have a social effects and provide new information. This supports the argument made by Shattock (2000), who argued that the terms "competitiveness," "cost reduction," "excellence," "income generation," "opportunism," "relevance," as well as "reputation" remain all vital to the effectiveness of universities in the present day. These terms serve as the performance indicators that propel academic endeavors and initiatives.

The fourth conclusion of this research was that INE significantly mediates the relationship between CUM and GRP viability. This finding suggests that INE can further strengthen the connection between CUM and the effectiveness of GRP,

which is notable given the substantial impact that CUM has on the effectiveness of these programs. To rephrase, institutional strength could serve as the fulcrum around which the impact of CUM on the sustainability of GRP can coalesce. Consistent with previous research, this finding highlights the importance of Environmental education and awareness, instruction on sustainability throughout all fields of study, assistance for achieving sustainability, including organizational encouragement of sustainable practices as means by which universities can advance sustainability (Khan & Henderson, 2020; Leal Filho et al., 2019). Key academic indicators of sustainable universities were presented by Shalabi (2019), such as the availability of student support programs, services, studies, and education. Additionally, the results of the fifth hypothesis revealed a more strong effect of combined forecast of CUM as well as INE here on durability of GRP. This suggests that enhancing the curriculum in well-functioning institutions will have a multiplier effect greater than training in a single variable. That's why it's important for schools that want to make their graduate-level programs more sustainable to emphasize both CUM and institutional efficacy rather than focusing on either one in isolation. Fifthly, findings also indicates that management support significantly and positively moderates between CUM and GRP viability which shown that administrative support played an important role to increase the CUM impact on GRP viability.

Based on above findings, it is concluded that this research showed that carefully overseeing the curriculum and providing efficient services are crucial to the effectiveness of GRP. This research suggests that a effectiveness graduate program is one that consistently produces patentable research in addition to attracting substantial amounts of research funding, maintaining a steady number of students, providing mentorship services, and consistently acquiring facilities to support its programs. A strong connection can be made between effective CUM and the continued effectiveness of GRP at institutions that set and meet goals, mediate disputes, maintain a united staff, and guarantee the security of their students. Teachers, deans, presidents, policymakers, regulators, and researchers in the field of education can all benefit from the findings of this study. Institutions aiming to maintain GRP can use this research to reevaluate their CUM strategies and the quality of their offerings as a result of the findings. Due to this, institutional heads in the higher education sector have data to back up their claims and make the necessary adjustments to their management practices to ensure long-term viability. This work has added to the existing body of knowledge on higher education, particularly graduate school, as well as has suggested new avenues for future study.

Limitations and Future Directions

Because of its narrow focus and small sample size, this study has limitations. The research still sound, but our ability to extrapolate from the results is stunted by this flaw. More people and a wider range of topics need to be explored in future

studies. Second, the study only looked at one mediator and one moderating variable, despite the fact that there are likely many others that contribute to the link between CUM and GRP viability. Since there is no way for a single study to answer all the questions related to a topic, this suggests that additional research is required to account for the other potential mediating variables that were left out of this investigation. The study's limited scope is a result of its reliance on a quantitative approach. Although the legitimacy of research methodology as well as their capacity to reach a large sample size is the advantages of quantitative research, they are often criticized for being inadequate because of their perceived lack of depth. As a result, further research using qualitative and mixed-methods approaches is needed to flesh out the results of this study. Moreover, study was conducted on developing nation where educational institutions environment is changed as compare to other developed nations which hinder the generalizability of the study. Therefore, future research could be conduct on other developed nations to increase research generalizability.

References

- Abubakar, I., Dalglish, S. L., Angell, B., Sanuade, O., Abimbola, S., Adamu, A. L., . . . Onwujekwe, O. (2022). The Lancet Nigeria Commission: investing in health and the future of the nation. *The Lancet*, 399(10330), 1155-1200.
- Adam, b. A., & bio, y. M. (2020). Impact of e-learning environment on academic achievement among upper basic students in zaria education zone. *Nigerian journal of educational studies and research (njesr) vol*, 13(1).
- Alghamdi, A. K. (2017). The effects of an integrated curriculum on student achievement in Saudi Arabia. *Eurasia journal of mathematics, science and technology education*, 13(9), 6079-6100.
- Anakwe, U. P. (2002). Human resource management practices in Nigeria: Challenges and insights. *International Journal of Human Resource Management*, 13(7), 1042-1059.
- Arrohmatan, A., Mualifah, L., Harahap, N., & Murtafiah, N. H. (2022). THE EFFECT OF STUDYING THE YELLOW BOOK TOWARDS PAI LESSONS IN A CURRICULUM MANAGEMENT PERSPECTIVE. *Al Wildan: Jurnal Manajemen Pendidikan Islam*, 1(1), 1-12.
- Bassey, B. A., Owan, V. J., & Eze, E. A. (2019). Nexus between students', teachers' and school system effectiveness: Construction and factorial validity of a measuring instrument. *Bassey, BA, Owan VJ & Eze, EA (2019). Nexus between students', teachers' and school system effectiveness: Construction and factorial validity of a measuring instrument. British Journal of Education*, 7(7), 62-75.
- Beziau, J.-Y. (2022). *The Exoteric Square of Opposition: The Sixth World Congress on the Square of Opposition*: Springer Nature.
- Clark Jr, T. D., Jones, M. C., & Armstrong, C. P. (2007). The dynamic structure of management support systems: theory development, research focus, and direction. *MIS quarterly*, 579-615.

- Costa, r. S., laborda, j. L. A., & garcía, i. N. (2014). Effective teaching methods in the master's degree: learning strategies, teachinglearning processes, teacher training. *European scientific journal*.
- Cottrell, S., Linger, B., & Shumway, J. (2004). Using information contained in the curriculum management information tool (CurrMIT) to capture opportunities for student learning and development. *Medical Teacher*, 26(5), 423-427.
- DeCaprio, A. P., Johnson, G. W., Tarbell, A. M., Carpenter, D. O., Chiarenzelli, J. R., Morse, G. S., . . . Environment, A. T. F. o. t. (2005). Polychlorinated biphenyl (PCB) exposure assessment by multivariate statistical analysis of serum congener profiles in an adult Native American population. *Environmental Research*, 98(3), 284-302.
- Ekaette, S. O., Owan, V. J., & Agbo, D. (1988). External debts and the financing of education in Nigeria from 1988–2018: Implication for effective educational management. *Ekaette, SO, Owan, V. J & Agbo, DI (2019). External debts and the financing of education in Nigeria from, 2018, 55-68.*
- Ekaningrum, I. R., Widodo, J., Wasino, W., & Sugiyono, S. (2018). Development of Curriculum Management Model Based on Multicultural Character in Pesantren Khalafiyah. *The Journal of Educational Development*, 6(1), 123-131.
- Emeh, J. U., Isangadighi, A. J., Asuquo, P., Agba, I., & Ogaboh, A. (2011). Curriculum review: reactions from education stakeholders in south-south states of Nigeria. *Global Journal of Human Social Science*, 11(2), 33-42.
- Friedlander, J., & MacDougall, P. R. (1990). Responding to mandates for institutional effectiveness. *New directions for community colleges*, 72(4), 93-100.
- Gray, P. J., & Banta, T. W. (1997). *The campus-level impact of assessment: Progress, problems, and possibilities*: Jossey-Bass.
- Hon Kam, B. (1997). Style and quality in research supervision: the supervisor dependency factor. *Higher education*, 34(1), 81-103.
- Khan, S., & Henderson, C. (2020). How Western Michigan University is approaching its commitment to sustainability through sustainability-focused courses. *Journal of Cleaner Production*, 253, 119741.
- Leal Filho, W., Doni, F., Vargas, V. R., Wall, T., Hindley, A., Rayman-Bacchus, L., . . . Avila, L. V. (2019). The integration of social responsibility and sustainability in practice: Exploring attitudes and practices in Higher Education Institutions. *Journal of Cleaner Production*, 220, 152-166.
- Mbon, U. F., Godfrey, E., Ekpenyong, E., Okon, J. E., Uko, E. S., Ngaji, M. N., & Effionwan, E. (2020). Wastage of school material resources and secondary school system effectiveness: Evidence from a survey in Nigeria. *Humanities and Social Sciences Letters*, 8(3), 252-267.
- Muraraneza, C., Mtshali, N., & Bvumbwe, T. (2020). Challenges in postgraduate research supervision in nursing education: Integrative review. *Nurse education today*, 89, 104376.
- Ngoepe, M., Jacobs, L., & Mojapelo, M. (2022). Inclusion of digital records in the archives and records management curricula in a comprehensive open

- distance e-learning environment. *Information Development*, 02666669221081812.
- Nichols, J. O. (1995). *A practitioner's handbook for institutional effectiveness and student outcomes assessment implementation*: ERIC.
- Odigwe, F. N., Basse, B. A., & Owan, V. J. (2020). Data management practices and educational research effectiveness of university lecturers in South-South Nigeria. *Odigwe, FN, Basse, BA, & Owan, VJ (2020). Data management practices and educational research effectiveness of university lecturers in South-South Nigeria. Journal of Educational and Social Research (JESR), 10(3), 24-34.*
- Odigwe, F. N., Offem, O. O., & Owan, V. J. (2018). Vocational training duration and university graduates' job performance in Cross River State, Nigeria. *Nigeria. International Journal of Current Research Research, 10(07), 72024-72028.*
- Odigwe, F. N., & Owan, V. J. (2009). Trend analysis of the Nigerian budgetary allocation to the education sector from 2009–2018 with Reference to UNESCO'S 26% Benchmark. *Odigwe, FN & Owan, VJ (2019). Trend analysis of Nigerian budgetary allocation to the education sector from, 2018, 1-14.*
- Odigwe, F. N., & Owan, V. J. (2020). *Academic Staff Personal Variables and Utilization of ICT Resources for Research Teaching and Records Management in Higher Education*. Paper presented at the Odigwe, FN, & Owan, VJ (2020). Academic staff personal variables and utilization of ICT resources for research, teaching and records management in higher education. Proceedings of the 8th Annual European Conference on Education (ECE, 2020).
- Ogbeche, M. M., Emeribe, K. V., Asu-Okang, S., Etim, C. E., & Owan, V. J. (2021). Strategic planning and staff management as determinants of post-graduate programmes' effectiveness in universities.
- Owan, V., & Basse, B. (2021). Standardised causal statistical equations of curriculum management on the viability of graduate programmes in universities: The mediation of institutional effectiveness. *SocArXiv Preprint. <https://doi.org/10.31235/osf.io/9ekmr>.*
- Owan, V. J., & Agunwa, J. N. (2019). Principals' Administrative Competence and Teachers' Work Performance in Secondary Schools in Calabar Education Zone of Cross River State, Nigeria. *Online submission, 7(1), 20-28.*
- Owan, V. J., Akah, L. U., Ekpo, A. J., Ubi, I., Abeng, F. A., & Akah, G. T. (2022). Socioeconomic factors and the evaluation of HIV/AIDS prevention programs: A psychometric analysis of an instrument. *Owan, VJ, Akah, LU, Ekpo, AJ, Ubi, IO, Abeng, FA, & Akah, GT (2022). Socioeconomic factors and the evaluation of HIV/AIDS prevention programs: A psychometric analysis of an instrument. Electronic Journal of General Medicine, 19(6).*
- Owan, V. J., & Basse, B. A. (2021). Standardised Causal Statistical Equations of Curriculum Management on the Viability of Graduate Programmes in Universities: The Mediation of Institutional Effectiveness.
- Owan, V. J., & Ekpenyong, J. A. (2022). Usage of electronic infrastructures and students' learning effectiveness in Nigerian universities: A polytomous logistic prediction.

- Owan, V. J., Emanghe, E. E., Denwigwe, C. P., Etudor-Eyo, E., Usoro, A. A., Ebuara, V. O., . . . Bassey, B. A. (2022). Curriculum management and graduate programmes' viability: The mediation of institutional effectiveness using PLS-SEM approach.
- Palomba, C. A., & Banta, T. W. (1999). *Assessment Essentials: Planning, Implementing, and Improving Assessment in Higher Education*. Higher and Adult Education Series: ERIC.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of applied psychology*, 88(5), 879.
- Rodríguez-Ardura, I., & Meseguer-Artola, A. (2020). How to prevent, detect and control common method variance in electronic commerce research (Vol. 15, pp. 1-5): Multidisciplinary Digital Publishing Institute.
- Shalabi, R. J. (2019). *Sustainability in higher education: Comprehensive tool for assessing the sustainability in higher educational institutions*.
- Shattock, M. (2000). Strategic management in European universities in an age of increasing institutional self reliance. *Tertiary Education & Management*, 6(2), 93-104.
- Torkzadeh, J., & Keshavarzi, F. (2018a). An interdisciplinary approach to higher education strategic planning based on curriculum. *Higher Education Letter*, 11(42), 7-34.
- Torkzadeh, J., & Keshavarzi, F. (2018b). A strategic approach to the effectiveness evaluation of higher education curricula: Implications for medical education. *Educational Research in Medical Sciences*, 7(2).
- Tshiredo, L. L. (2013). *The impact of the curriculum change in the teaching and learning of science: A case study in under-resourced schools in Vhembe district*. Citeseer.
- Verma, P., Nankervis, A., Priyono, S., Salleh, N. M., Connell, J., & Burgess, J. (2018). Graduate work-readiness challenges in the Asia-Pacific region and the role of HRM. *Equality, Diversity and Inclusion: An International Journal*.
- Welsh, J. F., & Metcalf, J. (2003). Faculty and administrative support for institutional effectiveness activities: a bridge across the chasm? *The Journal of Higher Education*, 74(4), 445-468.
- Yates, F. (1937). The design and analysis of factorial experiments.