

Influence of Students Characteristics on Internal Efficiency of Postgraduate Studies in Universities in Kenya

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Abstract— In Kenya postgraduate enrollment and completion rate are low while dropout rate is high for doctoral and master's degrees, implying high levels of wastage. This study therefore sought to establish the influence of student Characteristics on the internal efficiency of postgraduate studies in universities in Kenya. The population of the study was 84,983 respondents, comprising 49 graduate school directors, 3,835 academic staff, and 81,099 postgraduate students. Proportionate and simple random sampling were used to obtain 398 respondents, comprising 15 directors, 90 academic staff, and 293 students. Data was collected using questionnaires and interview schedules. Hypotheses were tested using simple linear regression at $\alpha = 0.05$. The study findings established that student characteristics influenced the internal efficiency of universities in Kenya. The study recommends that prospective postgraduate students should try to balance their social and academic lives by selecting a study model that fits their schedules, and by effectively managing their time, priorities, roles, and duties.

Index Terms— Students Characteristics, Internal Efficiency, Postgraduate Studies, Universities, Kenya.

1. Introduction

Higher education presents a wide range of benefits to society as a whole, which includes direct and indirect benefits. However, for this to be achieved it is important that higher education institutions should be efficient so as to produce high outcomes with relatively low inputs. In education, efficiency can be described as achieving the greatest amount of educational output from a given level of inputs (Johnes et al., 2017). An education system with low dropout rates, low repetition rates, and high completion rates is said to be internally efficient, and vice versa. According to van de Schoot et al. (2013), PhD candidates in the Netherlands frequently succeed in finishing their studies within the stipulated period. The overall PhD attrition rate is substantial, with between 40% and 50% of candidates not completing their coursework. According to (Bair & Haworth, 2004; Litalien, 2015), dropping out of a PhD program is a costly endeavor because students must devote a significant amount of time, money, and intellectual capital from various sources.

2. Literature Review

Vlado et al. (2024) addresses a significant gap in higher education research: the lack of focus on master's degree student attrition, especially when compared to undergraduate dropout rates. Despite the availability of dropout statistics, there is a lack of predictive models specific to master's programs, even as postgraduate enrollment continues to grow. Using a hierarchical logistic regression model, the study identifies academic performance as a key predictor of attrition, though significant variance remains unexplained. Additionally, exploratory factor analysis reveals five main factors influencing dropout: harassment, employment responsibilities, institutional challenges, family obligations, and the economic value of the degree. Addressing these issues is essential for developing retention strategies. Regis (2019) explored PhD student persistence, emphasizing the impact of advisor and faculty support on student motivation and completion rates. Perceived competency plays a crucial role in dropout intentions. The study suggests that fostering strong academic partnerships and addressing students' psychological needs can enhance resilience, reduce attrition, and increase graduation rates. Cornér et al. (2020) investigated the link between doctoral students' interests, burnout, and dropout intentions in Denmark and Finland. The findings indicate that identifying and supporting students' evolving interests—especially a balance of research, development, and impact interests—helps reduce the risk of burnout and dropout.

The influence of student characteristics on internal efficiency in doctoral programs, particularly within public and private universities in Kenya, has garnered increasing attention in educational research. Studies indicate that factors such as family responsibilities, job commitments, and inadequate writing skills significantly hinder doctoral candidates' progress (Rong'uno, 2016). The intersection of personal and institutional challenges is critical; for instance, Castelló et al. (2017) found that younger, female, and part-time students are particularly susceptible to dropout due to difficulties balancing work and family life. These findings are echoed by Manevpreet et al. (2023), who emphasize the role of social support and institutional policies in mitigating dropout risks. Furthermore,

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the lack of adequate supervision and misalignment between students' objectives and program demands exacerbate attrition rates (Maddox, 2017). Thus, understanding these diverse student characteristics and their interplay with institutional frameworks is essential for improving doctoral program retention and efficiency in Kenya, as effective support systems can address both academic and personal challenges faced by students.

3. Research Methodology

A. Research Design

The study adopted both descriptive and correlation research designs. The descriptive survey design was ideal for gathering data from the natural environment and enabled the generalization of the findings to actual situations.

B. Population and Sample

The population of the study was 84983 and therefore a normal sample of 398 obtained using Yamane formulae was adequate for the study. A sample of 293 postgraduate students, 90 members of academic staff and 15 directors of graduate schools as indicated in Table 1.

Table 1

	Sampling matrix			
	Population	Sample		
		Public	Private	Total
Students	81099	176	117	293
Senior teaching staff	3835	54	36	90
Directors	49	9	6	15
Total	84983	239	159	398

4. Data Analysis

Data was analysed and using inferential and descriptive statistics, inferential statistics was adopted utilized simple linear regression. Descriptive data was presented using frequencies and percentages. Qualitative data was analysed thematically and was presented by narration. Inferential data was analysed using linear regression models. Regression analysis at 95% confidence level (alpha=0.05) was conducted and a regression equation was used to approximate the degree at which internal efficiency was predicted by student's characteristics.

$$y = a + \beta X + \epsilon$$

Where,

y – is the internal efficiency,

X – Student characteristic,

β – coefficient while

ε – The error term

5. Results and Discussion

The objective of the study was to establish the influence of student characteristics on internal efficiency of postgraduate studies in public and private Universities in Kenya. The responses were rated as strongly Disagree (1), Disagree (2), Neutral (3), Agree (4) and Strongly Agree (5).

Data presented in Table 2 reveals that majority 59.1% of respondents (academic staff and postgraduate students' postgraduate agree that the program is efficiently structured to facilitate timely completion, 19.5% were undecided while 21.4% disagreed. On whether the duration of my postgraduate program is appropriate for the course work and research requirements, a majority 78.9% agreed, 7.8% undecided while 13.2% were undecided. According to 49.8% of the respondents' students drop out of the postgraduate program before completion of their studies, 17.1% were undecided and 33% disagreed with the statement. Postgraduate students' complete postgraduate studies within the expected period was not supported by 46.7% of the respondents, 17.9% were undecided while 35.4% agreed.

Information presented in Table 3 indicate that majority 69.6% of academic staff, comprising of (74.2%), and (66.7%) respectively from private and public universities revealed that between 0-20% of the fulltime postgraduate students complete their studies between 2-3 years. Further (69.6%) indicated that the part time students complete their studies between 4-6 years, these academic staff comprised of (54.2%) and (64.5%) from public and private Universities respectively. They also indicated that 0-20% of the fulltime postgraduate student's drop out of their studies, implying that more that 80% do not drop out. The respondents further indicate that between 0-20% of fulltime postgraduate students dropped out, this was according to (67.1%) of academic staff comprising of (54.2%) and (87.1%) from public and private universities. Thirty-two point nine percent of the academic staff indicated that a cumulative of at least 80% students continued with their studies. From the information obtained from the academic staff reveals that a higher percent of both part time and fulltime postgraduate students do not complete on the stipulated time, however a

Table 2

Opinions of postgraduate students on completion and dropout rates of postgraduate students in Kenya

Statement	N	SD	D	N	A	SA	Mean	SD
Students complete postgraduate studies within the expected period	257	42	78	46	81	10	2.7626	1.1734
		1.3%	30.4%	17.9%	31.5%	3.9		
Students drop out of the postgraduate program before completion	257	15	70	44	89	39	3.2607	1.1817
		5.8%	27.2%	17.1%	34.6%	15.2%		
Students in my postgraduate program experience delays in graduating	257	37	60	34	75	51	3.1673	1.3690
		14.4%	23.3%	13.2%	29.2%	19.8%		
Duration of my postgraduate program is appropriate for the course work and research requirements	257	16	18	20	115	88	3.9377	1.1232
		6.2%	7.0%	7.8%	44.7%	34.2%		
The number of students who graduate later than expected is high	257	19	46	45	78	69	3.5136	1.2627
		7.4%	17.9%	17.5%	30.4%	26.8%		
Postgraduate program is efficiently structured to facilitate timely completion	257	24	31	50	91	61	3.5214	1.2376
		9.3%	12.1%	19.5%	35.4%	23.7%		

Table 3
Opinions of academic staff on percentage completion and dropout rates in universities in Kenya

Measure	University Category	Percent					Total
		0-20%	21-40%	41-60%	61-80%	Above 80%	
What percent of your universities fulltime masters' students complete in 2-3 years	Private	23 74.2%	4 (12.9%)	1 (3.2%)	1 (3.2%)	2 (6.5%)	31
	Public	32 66.7%	6 12.5%	8 16.7%	2 4.2%	0 0.0%	48
	Total	55 69.6%	10 12.7%	9 11.4%	3 3.8%	2 2.5%	79
What percent of your universities part time masters' students complete in 4-6 years	Private	20 64.5%	5 16.1%	0 0.0%	6 19.4%	0 0.0%	31
	Public	26 54.2%	10 20.8%	8 16.7%	2 4.2%	2 4.2%	48
	Total	46 58.2%	15 19.0%	8 10.1%	8 10.1%	2 2.5%	79
What is the dropout rate of your universities part time masters' students	Private	29 93.5%	1 3.2%	0 0.0%	1 3.2%	0 0.0%	31
	Public	26 54.2%	16 33.3%	4 8.3%	2 4.2%	0 0.0%	48
	Total	55 69.6%	17 21.5%	4 5.1%	3 3.8%	0 0.0%	79
What is the dropout rate of your universities fulltime masters' students	Private	27 87.1%	4 12.9%	0 0.0%	0 0.0%	0 0.0%	31
	Public	26 54.2%	16 33.3%	2 4.2%	4 8.3%	0 0.0%	48
	Total	53 67.1%	20 25.3%	2 2.5%	4 5.1%	0 0.0%	79

majority representing 0-20% of students complete on the stipulated time. This concurs with the findings of a study in Tanzania according to Samuel *et al.* (2014) who posits that graduation rates are very low. Similar results were obtained in a study in New Zealand where 83% of PhD students completed their studies, with 17% opting out. The average degree completion period was reported as 4.1 years. The findings contradict those from a study in Britain as reported by Amehoe (2023) which stated that a master's degree can be obtained within 24 months part-time and full-time in nine to twelve months.

Information presented in Table 4, Shows that majority of the postgraduate students' respondents 82.1% agreed that balancing postgraduate studies with personal and professional responsibilities is challenging. The percentage of unsure postgraduate students was 10.5% while 7.3% disagreed. Similarly, the majority of respondents 46.2% agreed that family obligations do not hinder their progress in postgraduate studies. Similarly, 43.2% Disagreed and 10.1% had no opinion. The findings concur with those of Mkhai (2023), whose study in Tanzania in 2023 found that the majority of students took more than the time prescribed by the university to complete their studies. Due postgraduate students having multiple roles. A significant majority 85.2% of respondents agreed, while 5.8% disagreeing that the objectives of their postgraduate degree program aligns with their personal academic and career objectives while 8.9% were non-committal. The nature of postgraduate students work allows them to balance it with their studies postgraduate studies as reported by the majority 55.7% the postgraduate students who agreed, however a significant proportion 24.9% disagreed while 19.5% were not sure. On whether postgraduate students manage their time effectively to meet the demands of postgraduate studies most 65.8% of the students agreed, 17.5% were not sure while 16.8% disagreed.

Information presented in table 5, reveals that majority 88.4%

of academic staff respondents agreed that Postgraduate students find it challenging to balance their personal and professional responsibilities with postgraduate studies. However, 7.6% disagreed while 13.9% were not sure. On the statement that postgraduate students' family obligations do not hinder their progress in postgraduate studies, majority 69.6% of academic staff respondents disagreed, 22.8% agreed while a paltry 7.6% were unsure. Majority 69.6% of academics' staff respondents disagreed that Postgraduate students' family obligations do not hinder their progress in postgraduate studies, 22.8% agreed with the assertion but 7.6% were not sure. The findings of this study agree with those of Mkhai (2023) in a study in Tanzania, where he found that majority of students took more than the time recommended by the university to complete their studies. This was as a result of postgraduate students having multiple roles. On whether the objectives of postgraduate program align with postgraduate students' personal academic and career objectives majority 51.9% of the academic staff agreed, 12.7% were undecided while 35.4% disagreed. Majority 41.8% of the academic staff agreed that postgraduate students gender has no impact on their ability to succeed in postgraduate studies, 39.2% disagreed while 19% were undecided. The findings also revealed that 53.2% of academic staff disagreed that the nature of postgraduate students' work allows them to balance it with their postgraduate studies, 24.1% agreed while 10.1% were not sure. On whether postgraduate students are able to manage their time effectively to meet the demands of postgraduate studies, majority 64.6% disagreed, 24.1% agreed while 11.4% were undecided.

The opinions of graduate school directors were sought and the responses to the interview questions were presented in excerpt 1

Excerpts 1:

Researcher

Opinions on the completion and dropout rates of postgraduate school directors were

Table 4
Students responses on the influence of the student characteristics on internal efficiency of postgraduate studies in universities in Kenya

Statement	N	SD	D	N	A	SA	Mean	Std. Deviation
Balancing postgraduate studies with personal and professional responsibilities is challenging	257	10	9	27	110	101	4.10	0.989
Interacting and collaborating with peers of different age groups in the postgraduate program is easy.	257	12	66	30	114	35	3.37	1.137
My family obligations do not hinder my progress in postgraduate studies	257	26	85	26	69	51	3.12	1.337
The objectives of my postgraduate program align with my personal academic and career objectives	257	5	10	23	109	110	4.20	0.900
My gender has no impact on my ability to succeed in postgraduate studies	257	6	20	13	78	140	4.25	1.022
The nature of my work allows me to balance it with my postgraduate studies	257	24	40	50	93	50	3.40	1.231
I manage my time effectively to meet the demands of postgraduate studies.	257	4	39	45	110	59	3.68	1.037
Average Scores	257						3.73	1.093

Table 5
Academic staff responses on the influence of the student characteristics on internal efficiency, of postgraduate studies in universities in Kenya

Statement	N	SD	D	N	A	SA	Mean	Std. Deviation
Postgraduate students find it challenging to balance personal and professional responsibilities with postgraduate studies	79	0	6	11	28	34	4.14	0.930
Postgraduate students' family obligations do not hinder their progress in postgraduate studies	79	40	15	6	14	4	2.08	1.328
The objectives of postgraduate program align with postgraduate students personal academic and career objectives	79	6	22	10	36	5	3.15	1.133
The nature of postgraduate students work allows them to balance it with postgraduate studies	79	6	36	8	23	6	2.84	1.159
Postgraduate students are able to manage their time effectively to meet the demands of postgraduate studies.	79	13	38	9	15	4	2.48	1.131

Table 6
Regression model for academic staff responses on the influence of the student characteristics on internal efficiency, of postgraduate studies in universities in Kenya

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F Change	df1	df2	Sig. F Change
1	.684 ^a	.467	.460	.38379	67.548	1	77	.000

F(1,77) = 67.548, P < 0.05 (Hypothesis rejected)
a. Predictors: Constant, Student Characteristics

sought from the graduate school directors. Further they asked their opinions on the influences of age, Work status, Marital status on the time take by postgraduate students take to graduate.

Opinions on the completion and dropout rates of postgraduate school directors were sought from the graduate school directors. Further they asked their opinions on the influences of age, *Work status, and marital status* on the time take by postgraduate students take to graduate. The findings by a majority of the postgraduate students' respondents was that balancing postgraduate studies with personal and professional responsibilities was challenging, they further revealed, family obligations hinder their progress in postgraduate studies. These findings corroborated those of the academic staff. These finding were supported by the directors of postgraduate schools who reported that work status, family obligations, nature of research of the postgraduate students influenced the time they take to graduate or dropout. The study findings are consistent with those of Manevpreet *et al.* (2023) noted that among other things work-life balance, family obligations, social isolation, poor mentoring, inadequate academic preparation, and lack of social support, contribute significantly to dropout rates, further revealed that these factors are interrelated, and their effects can

be mitigated by the academic institution's policies and culture. From the findings in table 6, since p-value (0.000) is less than the critical value (0.05); we reject the null hypothesis and therefore take the alternative hypothesis that state that Student characteristic has a statistically significant influence on internal efficiency of postgraduate studies in Universities in Kenya. The findings regarding how students' characteristics influence internal efficiency are consistent with those of Manevpreet *et al.* (2023), which revealed that work-life balance, family obligations, social isolation, poor mentoring, inadequate academic preparation, and lack of social support, influence the time postgraduate students take to graduate. The results were also supported by Rong'uno (2016), who noted that family responsibility, job commitment and lack of adequate writing skills derail most candidates and contributes significantly to dropout rates.

6. Conclusion

The study reveals that student characteristics significantly influence the internal efficiency of postgraduate studies in Kenyan universities. Challenges such as balancing personal and professional responsibilities, coupled with family obligations, contribute to delays in program completion and increased dropout rates.

7. Recommendations

Prospective postgraduate students should choose a study model that favours their schedules to ensure that they do not go through a lot of stress trying to accomplish several tasks simultaneously. They should also make efforts to strike a balance between their social and academic lives by deliberately managing their time, priorities, roles, and duties.

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