
Investigating the Impact of Background Knowledge on the Academic Achievement of University of Abuja Accounting Graduates

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Abstract: This paper investigates the impact of background knowledge on academic achievement of University of Abuja Accounting graduates. The main objective of the study is to determine whether academic achievement of Accounting graduates is predicated on background knowledge in English Language, Mathematics, Economics and Accounting. Sample of 400 Accounting graduates between 2009-to-2014 were drawn through a judgmental sampling procedure from the population of 700 graduates. The study relied mainly on secondary data collected from the database of Accounting Department of the University. A multi-variate linear regression model using ordinary least-square (OLS) was employed to analyze the collected data. The results of the major findings reveals that background knowledge of English and Economic significantly influence academic achievement positively at 1% level while, Mathematics is significant at 10%. However, background knowledge in Accounting was found to be insignificant. The study recommends that regulators, university managements and students should continue to concentrate more on background knowledge in English Language, Mathematics and Economics as a prerequisite for not only admission but also, graduation.

Keywords: Academic Achievement, Background Knowledge, Multivariate Regression Model.

1. Introduction

There is a renewed interest by stakeholders in the educational sector the world over to understand the impact of background knowledge on the academic performance of university graduates in various academic disciplines. This is necessary as a result of the increasing employer's preference of graduates with high-level performance competencies, this emphasis cuts across the various disciplines (Kukreja & Al Aali, 2013). The Accounting Department of the University of Abuja in Nigeria is not left out in the this quest for background knowledge that will prepare its graduates for the employment market so as to meet up with the National Universities Commission (NUC) Benchmarks and Minimum Academic Standards (BMAS) and country's employers demand of graduates with the necessary capacities to contribute meaningfully towards the attainment of the goals and objectives of organizations.

It is in view of the importance of background knowledge to the performance of graduates that this study was conducted with the major objective of determining whether the academic achievement of Accounting graduates is predicated upon background knowledge in English Language, Mathematics, Economics and Accounting. Determining this will be of great significance to the Department, Regulators (NUC), University Management, Students and other Stakeholders in the educational sector as the study will help in policy formulation and quality assurance measures for productive results.

Even though, several studies have been carried out in different countries to investigate the predictive power of background knowledge in relation to academic achievement of graduates (Bergin & Reilly, 2006; Byrne & Flood, 2008; Kukreja & Al Aali, 2013). These studies have only investigated the impact of background knowledge in English Language on students' performance (Gul and Fong 1993; Adelman, 1999; Warburton, Bugarin, & Nuñez2001; Wong & Chia, 1996; Jackling & Anderson, 1998; Du Plessis, Müller & Prinsloo2005) without investigating the impact of background knowledge in English Language, Mathematics, Economics and Accounting on the academic achievement of University of Abuja Accounting graduates which this study is designed to accomplished. Other researchers concentrate on the influence of background knowledge in Mathematics or Economics or Accounting on learning outcome of accounting graduates (Adelman, 1999; Mitchell, 1988; Bartlett, Peel & Pendlebury, 1993). It is noteworthy that most of these studies have been limited to advanced economies such as the United kingdom (Duff, 2004; Bartlett, Peel and Pendlebury, 1993), Italy (Castagnetti and Rosti, 2009), Singapore (Seow, Pan, Tay, 2014; Koh and Koh, 1999), and other developed economies.

As part of the limitations of the study, the findings of the study cannot be generalized, as it focuses only on university of Abuja Accounting graduates rather than university of Abuja or even Nigerian Universities this is in view of time and resource constraints and the lack of disclosure of important information which inhibit the study.

2. Literature Review and Hypotheses Development

2.1 Background Knowledge

Background knowledge is the prior knowledge students achieved before gaining admission into university. Specifically, they are the knowledge acquired and gained at secondary schools in different subjects. Most studies like Gammie, Jones and Robertson-Millar (2003); Duff (2004); and Byrne and Flood, (2008) suggest that previous academic performance is a significant indicator of university performance. In fact, they maintained that prior academic achievement is the most significant determinant of performance throughout the students' degree studies.

2.2 Relationship between Background Knowledge and Academic Achievement

2.2.1 English Language and Academic Achievement of Accounting Graduates

The importance of English has been of interest to accounting researchers because of the global usage of the language. For instance, Gul and Fong (1993) studied a first-year university accounting course that was taught in both English and Chinese, they found that students who attended English secondary school outperformed those who attended a Chinese secondary school. Scores from high school have been found to be a strong predictor of college grades. About 9 of 10 (87 percent) students who complete 4 years of English in high school stay on track to graduate from college compared with a 62 percent persistence rate among those who do not complete their coursework (Adelman 1999; Warburton, Bugarin, and Nuñez 2001). Wong and Chia (1996) found a direct relationship between proficiency in English language with performance levels in a first-year financial accounting course. However, in a study of Australian university, the study of Jackling and Anderson (1998) revealed that English language did not significantly affect results. Du Plessis, Müller and Prinsloo (2005) concur with this in a study involving first-year accounting course at a South African distance education university. In the light of these, we proposed the first hypothesis.

H₁: Background knowledge of English language does not have any significant effect on the academic achievement of accounting graduates.

2.2.2 Mathematics and Academic Achievement of Accounting Graduates

Literatures have shown that past academic performance is significantly related to future performance. That is, past grades determines future grades (Astin, 1971; Lavin, 1967) and by way of expansion, past knowledge influences future knowledge. That is, grades determine grades. Majorly, accounting courses like financial accounting, management and cost accounting, taxation and public sector accounting among others involved computation. Therefore, accountancy degree programmes require quantitative and numerical skills as accounting methods and techniques involve calculations (Seow, Pan & Tay, 2014). Therefore, it is appropriate to conclude that background knowledge in mathematics influences academic achievement of accounting graduates.

Adelman (1999) and Mitchell (1988) maintained that students with 'A' level mathematics perform better statistically, in the computational and quantitative aspects of accounting courses. Also, Koh and Koh (1999) found background in mathematics as one of the six variables that impact student performance. More so, Evans and Farley (1998) showed that grades in high school mathematics are positively and significantly related to student performance. A similar argument was documented by Auyeung and Sands (1994) who maintained that previous mathematical ability is among other determinant variables in explaining performance in first-year accounting students. The significance of prior study of mathematics as predictor variables of academic performance is also in line with the findings of Naser and Peel (1998). In the light of these, we proposed the second hypothesis as follows:

H₂: Background knowledge in mathematics does not have any significant positive effect on the academic achievement of accounting graduates.

2.2.3 Economics and Academic Achievement of Accounting Graduates

The studies of Dolado and Morales (2009), Pozo and Stull (2006) revealed that students' prior knowledge is one of the most important variables enhancing learning outcomes. This is a conceptual knowledge which includes facts, principles and basic skills among others which students are expected to have acquired during secondary education. In this vein, researchers have analyzed the impact of background knowledge in economics on the performance of accounting students.

Bartlett, Peel and Pendlebury, (1993) also investigated the relationship between the performance of accounting students and prior study (among others) for four years to 1992, and documented that only prior study of economics has a significant effect on performance. Tho (1994) also document that the grades achieved in studies of high school economics to be significant in explaining academic performance. The significance of background Knowledge in economics as predictor variables of academic performance is also in tandem with the findings of Naser and Peel (1998). Based on these, we proposed the third hypothesis.

H₃: Background knowledge of economics does not have any significant positive effect on the academic achievement of accounting graduates.

2.2.4 Accounting and Academic Achievement of Accounting Graduates

Literatures have shown that past academic performance is significantly related to future performance. That is, grades determines other grades (Astin, 1971; Lavin, 1965) and by way of expansion, past knowledge influences future knowledge. However, most empirical findings from previous studies on the effect of background knowledge in accounting on the performance accounting students are contradictory. The findings of Schroeder (1986), Bergin (1983), Baldwin and Howe (1982) revealed that the performance of students is not predicated on the prior accounting knowledge. In fact, they concluded that overall course performance is unrelated to prior high school accounting exposure. From the review of Bartlett, Peel and Pendlebury, (1993) who investigated the relationship between the performance of accounting students and prior study (among others) for four years to 1992, it was discovered that prior study of accounting has no significant effect on academic performance. Koh and Koh (1999) who maintained that prior academic achievement was the most significant determinant of performance of accounting graduate found prior accounting knowledge does not significantly impact on performance in the first year.

However, other previous studies offer conflicting findings. Mitchell (1988) found that students with prior accounting knowledge perform better in aspects of some selected courses. Gul and Fong (1993) confirm the predictive power of prior study of accounting on academic performance. Similarly, Tho (1994) found prior study of high school accounting to be significant in explaining academic performance. The significance of prior study of accounting as determinant variable of academic performance also received empirical backing from Naser and Peel (1998). Based on these, we proposed the final hypothesis.

H₄: Background knowledge of accounting does not have any significant effect on the academic achievement of accounting graduates.

2.3 Theoretical Bases for the Study

The underlying theory for the current study is Constructivism theory of knowledge. The theory argues that humans generate knowledge and meaning from an interaction between their background knowledge and their experiences (Piaget, 1967). It has influenced a number of disciplines, including psychology, sociology, education and the history of science. According to Tamir (1996), the correlation between crystallised intelligence and achievement goes a long way to explain the link between background knowledge and academic achievement. Although it is true that the extent to which students will learn new content is dependent on a number of factors, research has confirmed that what students already know about the content is one of the strongest indicators of how well they will learn the new information Marzano, 2004).

3. Research Methodology

The following three sub-sections describe the methodology of this study:

3.1 Population of the Study and Sample Selection

The population of the study is composed of all accounting graduates from University of Abuja for the periods of five academic sessions from 2009-2014. This period is considered appropriate because the needed data for this study are available between these periods. More so, student's information are expected to be kept for a minimum period of five years. The choice of University of Abuja is in three fold. Apart from the fact that it is a federal university, the university is a catchment area for all the state in the federation. More so, the university is situated in FCT where most residents are people from different ethnic backgrounds.

Giving the requirements of the econometric methodology adopted, only students who graduated within the normal allowable period of four years throughout the period of the study were considered for the study. That is, students who spilled over to 5th or 6th years before graduating were excluded. The rationale for excluding them from the study is in two folds. First, it is not unlikely that their spilling to fifth and or six years is caused by some factors not considered in this study and also, to permeate the reduction of our sample observation to a manageable level. This process, make the final observation to be four hundred graduates of Accounting which constitute the sample of the study.

3.2 Data Source

The set of data used in this paper were obtained majorly from secondary sources. Specifically, the data were collected from department of accounting databases. These databases give the full profiles of students. Apart from the demographic data of students, the data bases give the actual grade students have in their background subjects. Also, data relating to academic achievement of graduates in form of Cumulative Grade Point Average (CGPA) of sampled observations for all the period under consideration were equally collected from the department.

3.3 Model Specification and Measurement of Variables

To determine the predictive power of background Knowledge of Mathematics, English, Accounting and Economics on the academic achievement of accounting graduates, the study employed a multivariate regression analysis. The ordinary least square regression was performed with CGP as the dependent variable, while the explanatory variables include grades in Mathematics, English language, Accounting and Economics. The model is provided below:

$$AA = \alpha + \beta BE + \delta BM + \gamma BEc + \square BA + \epsilon_{it}$$

AA Represents academic achievement, While ϵ_{it} are the intercept and the error term respectively. While β, δ, γ , and \square are the coefficients of variables under consideration.

Academic achievement is the students' academic performance over the whole degree programme which is measured by the final cumulative grade point average (CGPA) score. The CGPA is the quotient of total grade points divided by total courses attempted. The CGPA is classified into five. First Class (4.50-5.00), Second Class Upper (3.50-4.49), Second Class Lower (2.40-3.49), Third Class (1.50 – 2.39) and Pass (1.00 – 1.49). First Class was given a value of 5. Second Class Upper and Second Class Lower were given values of 4 and 3 respectively. The remaining classifications were given values of 2 and 1 respectively.

Background knowledge in Mathematics, English language and Economics were measured by student grades in WASSCE or NECO or equivalent. The standard scaling of 5 point for A1, 4 point for B1-B3, 3 point for C4-C6 was used for analysis. Where a student has dual results with different grades, the higher grade was considered. A dummy variable is used as measurement of background knowledge in accounting. One (1) was used for candidates with background knowledge in accounting and 0 for candidates without background knowledge in accounting. This coding was employed because background knowledge in accounting is not a prerequisite entrance qualification.

4. Results and Discussions

The results of this study are presented in three sub-sections. The first sub-section displays the descriptive statistics. The second sub-section presents the correlation variables used in the regression analysis and the third sub-section discusses the regression results.

In Table 1, report of the summary statistics of the variables used in the econometric analysis for the whole sample is displayed. The table shows the mean values of about 3.30, 3.90, 4.20, 4.12 and 0.80 for academic achievement, background knowledge in English language, Mathematics, Economics and Accounting respectively. These results indicate that on average, the graduates under consideration graduated with second class lower. On average 80% of the sampled considered have background knowledge in Accounting.

4.1 Descriptive Statistics

We begin our analysis with an examination of some of the summary statistics and present some basic features of the sample.

Table 1: Summary of Sample Statistics

Variables	Descriptive Statistics				
	N	Minimum	Maximum	Mean	Std. Deviation
Academic Achievement (AA)	400	3.00	5.00	3.30	0.47012
Background Knowledge in English Language (BE)	400	3.00	5.00	3.90	0.52579
Background Knowledge in Mathematics (BM)	400	3.00	5.00	4.20	0.67511
Background Knowledge in Economics (BEc)	400	3.00	5.00	4.12	0.75786
Background Knowledge in Accounting (BA)	400	0.00	1.00	0.80	0.46409

Source: SPSS Output Result

4.2 Correlation Matrix

In Table 2, we present the correlation matrix of our variables of interest. A correlation matrix permits the measurement of the strength of the linear relationship between variables.

Table 2: Correlation Matrix

Variable	AA	BE	BM	BEc	BA
AA	1				
BE	0.761*	1			
BM	0.601*	0.832**	1		
BEc	0.853*	0.721**	0.661*	1	
BA	0.322	0.652*	0.532**	0.453	1

* *Source:* SPSS Output Result

and ** indicate that values are significant at 1% and 5% respectively (1-tailed).

The correlation between background knowledge in Mathematics, English Language and Economics is strongly related to academic achievement at 1 percent significance level. This signifies that background knowledge in Mathematics, English Language and Economics engender academic achievement positively. English language has the highest coefficient of about 85% accounting for more relationship with academic achievement. However, the background knowledge in Accounting is not significant at any acceptable level.

4.3 Empirical Result

In this section, we present and analyze the relationship between academic achievement and background knowledge using the methodology earlier specified. Table 3 shows the regression result for the model.

Table 3: Regression Result^a

Variable	Intercept	BE	BM	BEc	BA	Adj R ²	F-Statics
	0.0121	0.1847*	0.0754**	0.2403*	0.0024	0.6565	119.0*
	(1.4563)	(5.222)	(4.4760)	(2.7142)	(0.3453)		

Source: SPSS Output Result

^aT- Statistics are in parentheses.

* and ** indicate that values are significant at 1% and 5% respectively (1-tailed).

The above table shows the summary of regression result for the effects of background knowledge on academic achievement of accounting graduate. The estimated linear relationship of the model is $AA = 0.0121 + 0.1847BE + 0.0754BM + 0.2403BEc + 0.0024BA$. The results indicate that all the background knowledge considered, significantly determine academic achievement positively at 1% percent level except Mathematics which is significant 10%. However, background knowledge in accounting is not statistically significant at any acceptable significance level. This indicates that background knowledge in accounting does not influence academic achievement of graduate accounting.

Furthermore, the results also show the coefficient of determination for the model. This coefficient measures the proportion of the total variation in the academic achievement that is explained by background knowledge. Precisely, the adjusted R-squared for the model is about 66%. This coefficient evidenced that the model is well fitted, as 66% of the total variation in academic achievement has been explained by the variation in the variables considered.

The regression result as explained above provides evidence for the rejection of the first three hypotheses formulated. The result clearly shows that background knowledge in English Language, Mathematics and Economics significantly determine academic achievement of accounting graduates with English Language having the higher impact. The implication of this result is in two folds. First, the result suggests that there is a direct relationship between academic achievement and these three background knowledge. This suggests that the level of academic achievement in accounting- largely depends on background knowledge in English Language, Mathematics and Economics. Second, the coefficient of background knowledge in Economics is higher with a value of about 24% followed by English Language with a value of about 18%. Possible explanation for this is that accounting emanates from Economics as the mother of all social courses. Also, the possible reason while English Language followed is because it is the Language of instruction which students used as medium of communication throughout the period of their study. Finally, Mathematics has the least value among the three significance variables because not all courses required calculation especially the borrowed ones.

The findings of this study is in parallel with the findings of Wong and Chia (1996) who found a direct relationship between proficiency in English language with performance levels in a first-year financial accounting course but contradict the findings of Jackling and Anderson (1998) which revealed that English language did not significantly affect results. More so, on the aspect of background knowledge in Mathematics, the result confirms the findings of previous studies such as Adelman (1999); Koh and Koh (1999) and Mitchell (1988). In similar vein, the result of the study in relation to background knowledge in Economics is in tandem with the findings of Bartlett, Peel and Pendlebury, (1993) and Tho (1994).

Finally, the finding of this study which suggests that academic achievement of accounting graduates is not predicated on prior accounting knowledge is in line with the postulations of Schroeder (1986) and Bergin (1983) but conflict the findings of Mitchell (1988) and Naser and Peel (1998) which revealed otherwise.

5. Conclusion and Recommendations

5.1 Conclusion

In this paper, we analyzed the predictability of background knowledge English language, Mathematics, Economics and Accounting on the academic achievement of accounting graduates. Our major objective was to assess whether academic achievement of accounting graduates is predicated upon these background knowledge identified. Our regression results show that background knowledge in English Language, Mathematics and Economic engender positive statistically significant effect on academic achievement of accounting graduates. Based on these results, we rejected our first three hypotheses and concluded that there is a significant direct relationship between background knowledge in English Language, Mathematics and Economic on one hand and academic achievement of accounting graduates on the other hand. However, the regression results show that prior accounting knowledge does not determine the academic achievement significantly. Based on this, we concluded that background knowledge in accounting does not determine the academic achievement of accounting graduate.

5.2 Recommendations

The recommendations of the study are directed to students, regulators, university management and future researchers. Students intending to study accounting should take English Language, Mathematics and Economics seriously and to enhance their competency in them as they have been establish to be determining factors that influence academic achievement. Regulators and university managements should continue to their position on English Language, Mathematics and Economics as a prerequisite for admitting students into accounting programme.

5.3 Suggestions for Further Studies

The study suffers from some setbacks on the bases of which future researchers are recommended. The study cannot be generalized as it only focused on university of Abuja. Also, the study only considered prior knowledge without considering other determining factors like socioeconomic background of students, quality of instruction and university environmental factors. Future researchers are therefore recommended to replicate this study by considering all universities in Nigeria and to explore the influence of other factors on academic achievement of accounting graduates.

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