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Students' Consumption Determinants and Academic Performance Nexus: A Case Study of Private University Students in Ghana

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Abstract

The paper seeks to ascertain the factors that influence the private university student's consumption and subsequent influence on academic performance. A linear model of the consumption function was used. The Ordinary Least Square technique was employed to determine the factors that influence students' consumption. Following econometric procedures and data collected from field work; gender, marital status, age, average grade point, residential status, occupation, price levels, and disposable income were found to influence private university students' consumption in Ghana. Also, from the correlation matrix, there is an inverse relationship between student's performance and their consumption. The paper recommends redirection of students spending to impact on academic performance.

Keywords: Academic Performance, Consumption, Ordinary Least Square, Students.

1.0 Introduction

Generally, Consumption is the act of buying and using things. Consumption has been a subject of countless empirical studies over many decades. In the nineteenth and twentieth centuries, there was one agreement between theories of modernity and those of post modernity about the centrality of consumption studies to economic development. Werner Sombart, Emile Darkhein and Thorstein Veblen at the turn of the twentieth century concluded that consumption was a decisive force behind economic development of a nation (Trentman, 2002). In the same vein, the influence of consumption can affect academic performance of students either positively or negatively depending on how their resources are allocated.

The cost of poor academic performance in both the short term and long term of a country's development is a cause of worry. Governments and other educational institutions try to redistribute available resources to mitigate likely social cost tendencies. Generally, resources of governments particularly in Africa are scarce in the face of unlimited wants for the provision of better living standards of which quality education is no exemption.

In Ghana, education expenditures expressed as a percentage of Gross Domestic Product (GDP) in real terms increased marginally over the period 1995-2007. By 2005, public spending on education had reached over 5% of GDP from less than 4% in the 1995 (Long Term National Development Planning Commission, 2009). In Ghana's 2010 Budget Statement, it was mentioned that apart from the continuous support of GETFUND[6] to Tertiary education two new Public Universities were to be established excluding what probably may be established by the private sector. This suggests a relatively huge expenditure towards Tertiary education. Tertiary education in Ghana requires huge expenditure to ensure quality education however, most Ghanaians are poor. According to the Ghana Living Standards Survey (GLSS-4, 1999), 40% of the Ghanaian populations have incomes below the upper poverty line[7]. The low income level that most households face can be explained as a factor that can constrain the Private University Student from consuming those goods and services that enhances academic performance.

In recent times, poor academic performance has become a common phenomenon especially in Ghana's private universities. It is indeed a sad reflection on the African continent that, the confidence with which African higher education had served as an agent of modernization and economic growth during the early years of its existence in the sixties, has dwindled over the years (Sawyerr, 1998; Abdulai, 2002). The fall in the confidence in higher education coupled with the rapid growth in establishing private higher education results in abysmal academic performance. It is against this background that a team of five was constituted in May, 2009 by the FASS-CUC[8] to investigate the causes of abysmal academic performance of its students. Again, the vice chancellor of Catholic

[6] The Ghana Education Trust Fund
[7] Upper poverty line: Based on the GLSS four,1998/99,the upper poverty line in Ghana refers to incomes of up to 90.00 Cedis a year ,7.50 Cedis a week or 0.25 Cedis a day.
[8]Central University College, Faculty of Art and Social Science Report on Academic Performance, 2009.

University College, Professor James Hawkins Ephraim in an Opening Mass Celebration of the Catholic University College emphasized that; the students should improve upon their performance in the quest for achieving academic excellence. Standards are falling and that the Universities and other Tertiary institutions would require massive efforts to maintain higher education standards (Pecku, 2010)

This paper seeks to determine the factors that influence the Private University Students consumption in Ghana. This will help examine whether abysmal performance is associated with students not getting their spending priorities right in relation to their necessities.

2.0 Theoretical Review

John Maynard Keynes "Consumption Theory"

Modern consumption theory begins with Keynes (1936) analysis of the psychological foundation of consumption behavior in his General theory[9]. He was the first to develop a systematic theory of consumption spending by the households (Ackley, 1960). He wrote "the fundamental psychological law, upon which we are entitled to depend with great confidence both a priori and from our knowledge of human nature and from the detailed facts of expenditure, is that men are dispose as a rule and on the average to increase their consumption as their income increases but not by as much as the increase in their income" (Keynes, 1936; p.96). Keynes held that, it was current income that determined the demand for consumer goods and services. He also suggested that household consumption depends not only on current income but on a number of other factors such as wealth, interest rates, availability of consumer credit; consumers' expectations, income distribution and taxes (Ackley, 1960). It is very impossible for an individual to continually spend more than they earn (Miller, 1996).

The various positions of economists are presented in this study as the four major contributions to the theory of consumption which are Absolute Income Hypothesis, Relative Income Hypothesis, Permanent Income Hypothesis and Life Cycle Hypothesis.

Absolute Income Hypothesis

Absolute income hypothesis is proposed by English economist John Maynard Keynes, and has been refined extensively during the 1960s and 1970s notably by an American economist Tobin (1996). The theory examines the relationship between income and consumption and asserts that the consumption level of a household depends on it not relative but absolute level of income. That is, households decide their current consumption expenditure on the basis of current and absolute level of income. As income rises, the theory asserts consumption will also rise but not necessarily at the same rate.

Permanent Income Hypothesis Consumption Theory

This theory was developed by an American economist Friedman (1956). It states that the choices consumers make regarding their consumption pattern are determined not by current income but by their long term income expectations. Measured income and measured consumption contained a permanent anticipated and planned element and a transitory unexpected element. He maintained that, households spend a fixed fraction of their permanent income on consumption. Friedman concluded that the individual will consume a constant proportion of his or her permanent income. However, low income earners will have a higher propensity to consume whiles high income earners will have a higher transitory element to their income and lower than average propensity to consume (Friedman, 1957).

Life –cycle Hypothesis Consumption Theory

It was developed by an American economist Fisher (1987) and Palley (1993), before being extended by Albert Ando (2002) and Franco Modigliani (2003). Life cycle hypothesis assumes that an individual consumes a constant percentage of the present value of their income. This is dictated by preferences and taste, and income. Again, individuals choose a life time pattern of consumption that maximizes their life time utility subject to their budget constraint. Ando and Modigliani argued that the average propensity to consume is higher in young and old. Middle aged people tend to have higher income with lower propensity to consume and higher propensity to save (Ando & Modigliani, 1963).

Relative Income Hypothesis Consumption Theory

This theory is attributed to Duesenberry (1949) who investigated the implication of his idea for consumption behavior in his book 'Income, Saving and the Theory of Consumer Behavior'. It states that the utility an individual derives from a given consumption level depends on its relative magnitude in the society rather than

[9] The General Theory of Employment ,Interest and Money, 1936

its absolute level. This theory maintains that consumption decisions are motivated by "relative" consumption concerns. He stated, "the strength of any individual's desire to increase his consumption expenditure is a function of the ratio of his expenditure to some weighted average of the expenditure of others with whom he comes into contact". A second claim is that consumption pattern is subject to habits and is slow to fall in face of income reductions. He wrote "the fundamental psychological postulate underlying our argument is that, it is harder for a family to reduce its expenditure from a higher level than for a family to refrain from making high expenditures in the first place" (Duesenberry, 1949).

Ernst Engel's Theory on Consumption

His theory tackled what accounted for the manner in which consumption patterns changed as income rises. This has indeed been recognized as one of the most established empirical regularities in economics (Houthakker, 1987). Engel investigated the empirical relationships between some expected categories and total consumption using 199 family budgets of Belgian families and 36 budgets of workers from all over Europe (Le Play, 1855). It was out of this data that he discovered the Engel's curve. From the data, Engel noticed that households tend to allocate expenditure changes when income increases. He came to state the following proposition: "the poorer a family is the greater is the proportion of its total expenditure that is dedicated to the provision of food". Engel claimed that this proposition should be considered as a "law" inferred from the data by induction.

Thorstein Veblen's Theory on Consumption

Thorstein Veblen was credited with Veblen's effect. He asserted that people consumed goods that convey status and prestige. These goods are expensive and imply that the owners have high levels of income, since they have bought the expensive items (Jelks, 2005). He also speculated that, for those particular individuals he studied, "consumption is evidence of wealth, and ….failure to consume is a mark of demerit". This notion that, the aim of consumption was to demonstrate one's economic position to observers was dubbed "Conspicuous Consumption" (Veblen, 1899). Moreover, each social class looks to higher social class for what the ideal life style is, and diverts their energy towards reaching that higher class status (Trigg, 2001). Some teens also display consumption behavior that is congruent with the Veblen's effect; they have a preference for goods that convey status (Vigneron & Johnson, 1999).

2.1 Empirical Literature

Jelks (2005), researched on "Premature Affluence: Factors Related to Excessive Teen Spending". The purpose of her research was to investigate the extent of premature affluence among teens as well as factors associated with prematurely affluent behavior. It also sought to investigate the extent to which young people, ages between 14 and18 years old, spend money on discretionary items and display behavior that is considered prematurely affluent. Her methodological approach took one hundred and four teenagers from three high schools to complete the questionnaires. The study measured the dependent variable premature affluence using a likert instrument developed for the research. Also included in the questionnaire were measure of the independent and control variables; family income, change in family structure, self esteem, materialism, age, race, gender and ethnicity. Results from her research indicated that teenagers are prematurely affluent. Parents are teenagers' greatest source of money. Teenagers seem to know what they are supposed to do, but the difficulty comes when that knowledge has to be translated into behaviors. Even though they are capable of creating budget plans, the likelihood of the teenagers living according to these budgets is questionable, especially when they encounter an item that they want badly.

Hurst and Roussanov, (2007) studied on "Conspicuous Consumption and Race". Their objective was to show that black and Hispanics devoted larger shares of their expenditures bundles to visible goods (clothing, jewelry and car) than whites. They sorted to demonstrate that these differences exist among virtually all sub populations, that they are relatively constant over time, and that they are economically large. They used data from the 1986-2002 consumer expenditure survey compiled by Harris and Sabelhus. Their study concluded that minorities spends more on conspicuous items than whites.

Parke (1999) also worked on "Consumption function". His paper tested the relative impact on consumption of different variables in Keynes original hypothesis and compares Keynes to the Friedman/Modigliani hypotheses as well. Using United States data for 1960 – 2000, his study concluded that current income is by far the most important single determinant of consumption, explaining 68% of variance. It is followed in importance by the "crowd out" variable, which explains an additional 14%. Next in terms of explaining additional variance, the study finds wealth (5%), consumer interest rates (2%) and exchange rate changes (1%). From this, his study concluded

that the consumption behavior of Americans is overwhelmingly Keynesian in nature, but that a small, separate, portion of the populace is Friedman/Modigliani in consumption behavior.

Furthermore, Penman and McNeil (2008), "Spending their way to adulthood: Consumption outside the nest" explored consumption habits of the young adult market, as they leave home and enter into a world of personal fiscal responsibility . The study investigated how young consumers are spending; their motives for impulsive consumption choices and their attitudes towards debts. The methodology took qualitative approach to data collection and analysis. It consisted of first and second year university students and an in-depth interview. Participants were recruited randomly by approaching students in campus at University of Canterbury. Their findings where that, young consumers studied showed a relaxed attitude to debt and purchasing ,with non essential consumption seen as "deserved" and a "reward" for behavior such as studying or working. Social pressure is found to be the key driver of consumption choices in this group with majority of spending decision made impulsively.

Another important and influential work in the area of consumption is that of Jappelli and Pistaferri (2011) "the consumption response to income changes". Their research critically evaluated the empirical evidence on the sensitivity of consumption to predicted income changes, distinguishing between the traditional excess sensitivity test and the effect of predicted income increases and income declines. They used subjective qualitative income expectation available for a sample of Italian households as an instrument for income growth. Their findings concluded that consumption appears to respond to anticipated income increases. The study also observed that, the consumption reaction to permanent shocks is much higher than transitory shocks.

In Conclusion, it may be inferred from the above literature that, changes in income of an individual does not fully explain the change in consumption expenditure even though income is the dominant determinant of consumption spending.

3.0 Methodology

3.1 Model Specification

As reviewed in the literature, Keynes (1936) developed a linear model for consumption function. This model was adopted by Jelks (2001) in his study as reviewed in this paper. Following the approach of Jelks (2001), this study modified Jelks' approach to suit the case of Private University Students in Ghana using the trickling down approach. The modified regression model with the appropriate dependent and independent variables using the Ordinary Least Squares (OLS) technique is given as

$$C_t = f(Yd, \Pr, Ag, G, Occ, Ms, R, GPA)$$

$$C_t = \beta_0 + \beta_1 Yd_t - \beta_2 \Pr_t + \beta_3 Ag_t + \beta_4 G_t + \beta_5 Occ_t + \beta_6 Ms_t + \beta_7 R_t + \beta_8 GPA_t + U_t$$

Where $\boldsymbol{C_t}$ = Consumption spending per period of time of the Private University Student, $\boldsymbol{Yd_t}$ = is Disposable Income in ranges of Ghana cedis, $\boldsymbol{Pr_t}$ = is Price of goods and services, $\boldsymbol{Ag_t}$ = is Age range of the student, $\boldsymbol{G_t}$ = is Gender status, $\boldsymbol{Occ_t}$ = is Occupation status, Ms_t =Marital Status, R_t =Residential Status, GPA_t = Grade Point Average and $\boldsymbol{\mu}$ = is stochastic error term.

The dependent variable C_t represents the consumption spending per day of the Private University Student. C_t is a function of price of goods and services, gender, age, residence, gpa, disposable income, marital status, and occupation. This implies that changes in consumption of goods and services by students respond to the changes introduced by these independent variables in the regression model.

3.2 Sources of Data

The study was conducted by using both primary and secondary sources of information. Primary sources included data collected using questionnaires, personal observation and face-to-face interviews with respondents in four selected Universities namely Central University College, Ashesi University College, Valley View University, Pentecost University College and Methodist University College. The secondary data sources included texts, statistical digests, fact sheets, Internet, magazines, newspapers among others. Information from these sources included both quantitative and qualitative data.

3.3 Population of the Study

The population of this study was determined by summing total enrollment of all the six most populated and/or premier Private Universities in Ghana as at 2007/2008 academic year which yielded 13,942 students. This period

was preferred because available secondary data was available only up to 2007/2008 academic year. Table 3.0 below presents the population distribution by gender and University College.

Table 3.0: Total Enrollment of the six sampled Private Universities

Name of University	Enrolment Year	Number of Students (Male=M, Female=F)		Sample Used*
Wisconsin University College	2007/2008	1247	M-756 F-491	39
Ashesi	2007/2008	365	M-196 F-169	12
Central University college	2007/2008	6,386	M-3,066 F-3,320	199
Valley View University	2007/2008	2,089	M-1,289 F-800	65
Pentecost University College	2007/2008	515	M-364 F-151	16
Methodist University College	2007/2008	3,340	M-1,742 F-1,598	104
TOTAL NUMBER OF STUDENTS		13,942	M-7413 **F-6529**	

Source: NCTE-Statistical Digest, 2012. *Authors' computation (See Yamane, 1973)

3.4 Sampling Technique and Sample Size Computation

The study applied the quota sampling technique in gathering the data for the study. This was preferred because the units are different yet possess the same characteristics. A statistical model from Yamane (1973) was used in computing the sample size. This method was used because it takes into consideration the population size, reduces the risk of selecting a bad sample size and the allowable sample error. Yamane's statistical model is given as

$n = \frac{N}{1 + N(e)^2}$, where 'n' is size of the sample, 'N' is population of the sample and 'e' is probability of error.

Given 'N' as 13,942; confidence level of 95% and error margin of 5%.

$n = \frac{13{,}942}{1+13{,}942(0.05)^2}$, $n = \frac{13{,}942}{1+13{,}942(0.0025)}$, $n = \frac{13{,}942}{35.855}$, n=388.84≈400 Students

As per the computation a sample size of at least approximately 400 students was expected to be used. However, in order to make room for non-responses and poor administration, the study employed 435 respondents for the study. In addition the variances in weights were catered for by the formula's computation as presented in page 19. Hence it can be concluded that the sample used is representative enough for policy purposes.

4.0 Data Presentation and Analysis of Results

This section deals with analysis of data obtained from the research instrument. The analysis seeks to present the determinants of Private University Students' consumption. This involves descriptive analysis of sample data, results and analysis of regression, inferences from hypotheses tested; all with the aid of STATA (version 11) and Predictive Analytic Software (PASW) version 18.

Table 4.1: Regression Results

Independent Variables	Co-efficient.	Std. Err.	t	P> [t]	95% Conf. Interval	
Gender	1.610695	0.3142308	5.13	0.000	0.99929015	2.228488
Age	0.5629411	0.1592537	3.53	0.000	0.2498404	0.8760418
Marital Status	2.352185	0.4939439	4.76	0.000	1.381067	3.323303
Residence	0.493663	0.1935345	2.55	0.011	0.1131644	0.8741615
GPA	-0.848995	0.1782512	-4.76	0.000	-1.199446	-0.4985448
Income Status	0.4488696	0.1586212	2.83	0.005	0.1370125	0.7607267

Price Level	-6.601344	0.5619821	-11.75	0.000	-7.706229	-5.49646
Occupation	-0.0382878	1.010699	-0.09	0.927	-0.8562042	0.7796287
R-squared	0.6372	***Durbin Watson Test***		2.0006	***F***(8, 391)=	85.83
Adj R-squared	0.6298	***Mean VIF***		1.32		

Dependent Variable: Consumption spending per day

The diagnostic tests conducted on the model shows that the model is good for forecasting and prediction. From table 4.1, the overall significance and fitness of the model is measured with the F test. With reference to the above table, the F value recorded is 85.83. This is greater than a critical F-value of 3.17 which provides evidence that all the independent variables together explain the dependent variable of the study. The study concludes that the consumption spending model is statistically significant at the 5% significance level. The R-squared (0.6372) and adjusted R-squared (0.6298) recorded in table 4.1, shows that approximately 64% of the variations in consumption spending model of the private university student is explained by gender, age, income status, price level, taste and preference, occupation and the remaining 36% is attributable to other factors such as value, attitudes, personal emotions, environment among others. The model does not have any correlations between the error terms as it reports a Durbin-Watson (DW) statistic of approximately 2.0. Also, there is no evidence of multicollinearity with all the Variance Inflation Factors (VIFs) being less than 5 as the results report a mean VIF of 1.32.

In accordance with theoretical literature, the expected signs of the coefficients of gender, age, marital status, residence, GPA, price level and income status were met. However the expected sign for the coefficient of occupation was not met.

From table 4.1 above, a calculated t-value for gender (5.13) implies that, the study rejects the null hypothesis with the statement that gender has no influence on daily consumption spending and fails to reject the alternate hypothesis at the 95% level of significance. Thus the conclusion is that being a male or female influences daily consumption spending, holding constant the influence from all the other independent variables in the consumption spending model. In addition, a p-value of gender (0.000), which is less than the 0.05 level of significance in this study, confirms the decision. From the coefficient of 1.61 it can be concluded that gender has a strong influence on private university students' consumption pattern.

Also, a calculated t-value of the slope coefficient of age (3.53) implies that, the study rejects the null hypothesis with the statement that age of respondent has no influence on daily consumption spending and accepts the alternate hypothesis at the 95% level of significance. The conclusion that age of respondent has a significant influence (0.56 units) on the private university student's daily consumption spending, holding constant the influence from all the other independent variables in the consumption spending model. Furthermore, this decision is verified by the p-value of age (0.000) which is less than the 0.01 level of significance. The positive value of the coefficient of age in the table suggests that, higher age groups have higher consumption expenditures and this does not necessarily agree with the Life Cycle Hypothesis abridged by Modigliani and Ando (1963). The difference is evident in that the marginal propensity to save will rise as age does while that of consumption dwindles as age rises. By the results, the marginal propensity to consume rises with age whiles that for saving dwindles. However, the long run effects of such consumption relationship may change because of some major engagements later in life which may necessitate increased saving and less consumption.

A calculated t-value of the slope coefficient of marital status (4.76) implies that, the study rejects the null hypothesis with the statement that marital status has no influence on consumption spending per day and fails to reject the alternate hypothesis at the 95% level of significance, and conclude that marital status has significant positive influence (2.35%) on consumption spending, holding constant the influence from all the other independent variables in the consumption spending model with a unit change in marital status variable. This is statistically significant at 1% level of significance. The result also imply that people in the private university who are married have higher consumption spending because their commitments may have some influence on their spending.

The study rejects the null hypothesis that, residence has an influence on daily consumption spending and fails to reject the alternate hypothesis at the 95% level of significance. Residence has significantly positively relationship with daily consumption spending holding all other factors constant at 5% level of significance. The residence of a respondent is important in considering consumption spending in that, the environment and nature of residence would influence consumption spending. It came to bear that 0.49 units influence on consumption spending is as a result of a unit change in the residence variable.

Also, an absolute calculated t-value of the slope coefficient of GPA (4.76) implies that, the study rejects the null hypothesis on the basis that, actual GPA has no influence on daily consumption spending and fails to reject the

alternate hypothesis at the 95% level of significance, and conclude that actual GPA has a significantly negative relationship with daily consumption spending holding other factors constant. The p-value shows a 1% level of significance. This implies that lower GPA would mean higher consumption expenditure while higher GPA relates to lower consumption expenditures. This is possible because lower GPA students spend most of their time spending on other considerations like entertainment, leisure and some tourist's attraction opportunities unlike higher GPA students.

The study rejects the null hypothesis and accepts the alternate hypothesis base on the fact that income status has negative relationship with daily consumption spending holding other factors constant. This is highly significant at 1% level of significance. Income status should be a premise for influencing consumption spending as indicated by economic consumption theory. However, for this case, the influence of income status per unit on consumption is about 0.45 units which reveal that the greater proportion of consumption spending for students of private universities is resident on other factors aside income. The implication is that the percentage of students may not be earning income which would significantly determine their consumption spending. The results show that Keynes Consumption Theory is evident because some consumption is influenced by income; an extent to which most economists will agree. Its slackness is proven however, in that the major influence of consumption spending is not income.

The price level has negative relationship with daily consumption spending holding constant the influence of other factors in the model. This is statistically significant given a p-value of 1% level of significance. This is confirmed by economic theory which posits an inverse relationship between price and quantity demanded. This indicates that private university students generally spend less on goods with higher prices.

The study failed to reject the null hypothesis and rejected the alternate hypothesis on the basis that occupation has no impact on daily consumption and it is not statistically significant. This is because majority of the respondents do not work. Also most of those who work are not gainfully employed.

4.1 Correlation Analysis between Consumption spending and GPA

Table 4.2 Correlation Matrix for Consumption Spending and GPA

	GPA	Consumption spending (daily average)
GPA	1.000	-0.3234
Consumption spending (daily average)	-0.3234	1.000

The table above is the correlation matrix for the relationship between consumption spending and GPA. The nature of this relationship is an inverse one implying that students whose academic averages are higher spend averagely less daily whiles students with low GPAs have high consumption spending daily. The strength of this association is about 32% which indicates a weak negative association between these two variables. The weakness does not override the importance of such a relationship but brings to light other significant factors that also affect the student's daily consumption spending.

5.0 Conclusion

The study concludes that consumption preferences vary for every single person. Nevertheless, the study shows factors such as gender, age, marital status, residence, gpa, income and price level, influence private university students' consumption spending greatly. There is also a weak negative relationship between private university students' consumption and their academic performance. Implying that, other factors influence students' academic performance rather than their consumption spending per day.

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Appendix 1: ANOVA, Regression results from STATA, and VIF-Test,

Source	SS	df	MS		
Mode	6592.97372	8	824.121715	Number of obs =	400
Residua	3754.19252	391	9.60151538	R-squared =	0.6372
				Adj R-squared =	0.6298
Total	10347.1662	399	25.9327475	Root MSE =	3.0986

realexpper~y	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
gd	1.610695	.3142308	5.13	0.000	.9929015	2.228488
age	.5629411	.1592537	3.53	0.000	.2498404	.8760418
mast	2.352185	.4939439	4.76	0.000	1.381067	3.323303
res	.493663	.1935345	2.55	0.011	.1131644	.8741615
gpa	-.8489955	.1782512	-4.76	0.000	-1.199446	-.4985448
ins	.4488696	.1586212	2.83	0.005	.1370125	.7607267
prl	-6.601344	.5619821	-11.75	0.000	-7.706229	-5.49646
oc	-.0382878	.4160202	-0.09	0.927	-.8562042	.7796287
_cons	10.93322	1.010699	10.82	0.000	8.946138	12.92031

Variable	VIF	1/VIF
mast	1.76	0.568714
prl	1.74	0.573613
ins	1.43	0.701485
gpa	1.28	0.778635
res	1.26	0.791575
gd	1.04	0.960128
oc	1.04	0.960636
age	1.04	0.962849
Mean VIF	1.32	

Appendix 2: Central Tendency and Dispersion Results

Table 4.3 Mean and Standard Error Estimation

Variable	Mean	Standard Error	95% Confidence Interval	
Consumption	**7.671327**	**0.2529622**	**7.174048**	**8.168606**
GPA	**2.321867**	**0.487579**	**2.226018**	**2.417717**