

BIBLIOGRAPHY

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ABSTRACT

Data were gathered and analyzed from 200 BSU students. The study aimed specifically to determine the relationship of the type of spending behavior of students to their socio-demographic, socio-economic characteristics and some of their expenditures.

The result of the study revealed that the most variable that affect or has the stronger relationship to spending behavior of BSU students was number of household members of the family. Monthly income of parents/guardian, how often students receive their allowance, food expense and educational attainment of parents/guardian showed a positive association. However, there was a negative association of educational attainment to those who were not consistent in following the set budget.

For age group, it implied a very weak association to the type of spending behavior. Furthermore, rent expense and how often parents receive their income revealed a weak association to the type of spending behavior. There was weak to moderate association on the source of income of parents. The chances of students to

strictly follow the set budget who were highlanders, ages 19 and below, males, course under group III (BSAS, BSIT, BSES, BSND, BSA and BSET), first years to second years, with 7 and above members of the family, source of financial support is family and parents attained secondary or vocational were higher than those belonging to other groups. In addition, there were higher chances to follow strictly the set budget of students whose parents' source of income is business, personal employment, private employee, government employee, and receiving pension, receiving income in a daily and weekly basis, receiving allowance in monthly, quarterly and not regular, monthly allowance of 3,001 and above, spend 1,501 and above, 3,500 and below, 1,000 and below, 1,500 and below on food, rent, transportation and personal, respectively.

This study could come into conclusion that if a students' family size is large there is a big chance that he/she strictly follow the set budget.

Furthermore, the study recommended other studies related to spending behavior of students. Other researches may use a larger sample size and include other variables related to students spending behavior.

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INTRODUCTION

Background of the Study

Every student have their own way of dealing with other people these behaviors will vary on their culture and personality manifested in their relationships with their friends, family and community. This study focuses on the daily spending behaviors of students in relation to their allowance, socio-demographic and socio-economic characteristics.

As Ago (2001) stated, “Money is the main source of living that tends to be far from reach. This is true today and probably for the coming years and the economic crisis that the world is experiencing. Though it is said that “Money is Not Everything” or it cannot buy everything in this world, it is still a must for us to sustain the budgetary requirement for our daily needs not only outside the school but as well as in our studies. We also need to maintain a quality of living for a better life.

Financial problems are true and very evident in our society. If not to all, to most of us. It is a problem worthy of serious attention especially for a person who wants to have a quality life. The path leading to financial success is full of obstacles that must be overcome either by having a respectable financial asset or by being able to budget your money efficiently to avoid useless expenditures.

It is not wrong to spend money as long as it is for needs and is not beyond



our financial capacity. However, there are those who claim that their needs and wants are not met despite having enough resources. This is due to the mismanagement of budget due to ill-advised expenditures and not knowing what to prioritize.

Moreover, the lack of self-analysis and failure to face the problem, facts and figures are two of the greatest causes of financial troubles. Lack of definite plan is another; the analysis becomes useless unless it is followed with work-plan.

The desire of making it through college with limited resources but still able to enjoy pleasures and quality life, takes firm determination and “will-power”. To succeed it is not impossible for us to succeed while enjoying pleasures and quality life at the same time with pleasurable pursuits and performing tedious and hard task. We can say, therefore that poverty is not a hindrance to achieving success. However, literacy is seen to be a life long process that needs not to be nurtured for a long time and is deeply involved in social practices and tradition which is essential to be successful and have a quality life.

The purpose of this study is to assess the effect of the socio-demographic, socio-economic characteristics and some expenditure of Benguet State University students on their type of spending behavior through multinomial logit analysis technique. Multinomial logit analysis is used to analyze the relationships or association of cross-tabulated nominal data. It allows the taking of standard frequency cross-tabulation and find out which variables seem statistically most



likely to be responsible for a particular effect. Nominal data are discrete observations that can be sorted into categories. Adopting some log-linear association determinants were used.

Statement of the Problem

This study dealt with the spending behavior of Benguet State University students using multinomial logit model. This tries to answer the following questions:

- 1.) What is the association between type of spending behavior of students and some socio-demographic/economic variables?
- 2.) What is the association between type of spending behavior of students and their expenditures?

Objectives of the study

Specifically, this study was conducted to: a) determine the association between type of spending behavior of students and the socio-demographic and socio-economic variables; and b.) determine the association between spending behavior of students and their expenditures.

Significance of the Study

The results of this study would serve as a reference for students. It would provide useful information to the parents/guardians to determine how much allowance they should give to their children.



Furthermore, the findings of this study will help improve our economy, for example businessmen in would determine what kind of products or services to produce based on the spending behaviors of students therefore avoiding a mismatch on the students needs and their services.

Scope and Delimitation of the Study

The study concentrated mainly on the determining and analysis of the spending behavior of college students in Benguet State University. This study is delimited to ethnic origin, age, gender, course, year, no. of the household member of the family, sources of financial support, educational attainment of parents/guardian, sources of income of parents/guardian, how often parents receive their income, average monthly income, how often students receive their allowance, average monthly allowance, food expenses, rent expenses, transportation expenses, personal expense and the type of spending habit of the students.

The study considered only college student of Benguet State University who are presently enrolled this second semester of the school year 2008-2009.



REVIEW OF RELATED LITERATURE

Kyrk (1933) presented two methods of arriving at cost of living of group in society. 1) Through the studies of the cost if all items of expenditure and 2) through budgets that show the goods and services used by the group.

Income is received us payment to property owned. Some people owned to few resources to support what is regarded as minimum living in there community. The return that this people obtain from the use of their resources that might have been employed in their most protive uses does not provide them with sufficient income to sustain of a living considered economically desirable as Bishop and Toussaint (1958) quoted.

Villanueva (1981) stated that the income is one of the potent factors influencing the pattern of consumption. As income increases, consumers want to diversify their consumption by eating a wider variety of food, which they can now afford to buy.

Paran (1981) claimed that respondents generating higher expenditure on all items belonged to families receiving higher income, those having income of urban wage and salary earning families increases faster than expenditure of physiological necessities and slower that those for luxury. For farm families, they spend able income increases much faster than either type of expenditures (Zimmer Man and Black as Cited by Rivera, 1955).



Cramer and Jenson (1979) stated that consumers spend everything they earn on goods and services. Another is that consumers never seem to get enough of most things. One of the stated reasons why consumers do not buy infinite quantities of everything is that they have a limited amount of income to purchase clothing, housing, foods, having haircuts and other things.

Valerio (1977) conducted a study on expenditure and income. The research was intended to find out what are the sources of revenue of city of Baguio, as well as the allocation of such revenue and attempt to analyze and compare the income and expenditure of the city of Baguio, the expenditure pattern as observed by every individual in accordance to his/her lifestyle. As bread earner he has to follow certain pattern in his expenditure with his income in order for him to cope with his financial problems to the basic needs necessities of life and whatever intentions he may hold for his future (Alves, 1982 – 1983).

Food is one of the most components of living and its expenditure is almost half of income of an individual. Indicators of these components are usually derived from the result of households food consumption surveys (HFCS) and from food balance sheet (FBS). In developing economies, these components of living can be used as statistical framework in the circular process of planning and development (Olate, 1964).

Dulay conducted another study in 1975. He compared the income and expenditure of foreign students in the Philippines and determined the various



revenues and the different appropriations of the funds for expenditure of said province on a year-to-year basis.

Ago (2001), concluded in her study that most parents/guardian of her respondents were farmer, most receive their allowance by monthly basis and their highest expenditure goes to school fees, food and rentals. She also added that year level have significant effect to cigar/liquor and school fees while age is highly significant to food, snacks, cosmetics and outings.

Decoyna (2001), added that majority of the respondents generally derived their financial allowance from their family.

Finally, students spend the biggest percentage of their money on foods, clothing and shelter, transportation, recreation, and snacks. These items are prime importance in the student's community. Only four factors namely age, sex, civil status, and parent's income affect student's expenditure (Gabriel, 1973).

Multinomial logit Model

The multinomial logit model is an alternative to full-profile conjoint analysis and is extremely popular in marketing research (Louviere, 1991; Carson et. al., 1994). In addition, Cramster (1998) state that a multinomial logit model is an econometric or [statistical](#) model which is a generalization of [logit](#) models in which there can be more than two cases.

Cramster added that multinomial logit regression is used when the



dependent variable in question is nominal and consists of more than two categories. Nominal variables are variables which consist of a set of categories which cannot be ordered in any meaningful way. Stating an example that multinomial logit regression would be appropriate when trying to determine what factors predict which major college students choose .

Multinomial logistic regression involves nominal response variables more than two categories. Multinomial logit models are multi equation models. A response variable with k categories will generate k-1 equations. Each of these k-1 equations is a binary logistic regression comparing a group with the reference group. Multinomial logistic regression simultaneously estimates the k-1 logits. Further, it is also the case, that the model tests all possible combinations among the k groups although it only displays coefficients for the k-1 comparisons.

Related Studies on the Application of Multinomial Logit Model

Pundo and Fraser (2006) uses multinomial logit model to investigate the factors that determine household cooking fuel choice between firewood, charcoal, and kerosene in Kisumu, Kenya. Empirical results indicate that level of education of wife, the level of education of husband, type of food mostly cooked, whether or not the household owns the dwelling unit, and whether or not the dwelling unit is traditional or modern type are important factors that determine household cooking fuel choice. Implications for regional and national fuel policies are discussed.



An observational study by Deb and Trivedi (2004) using mixed multinomial logit model to model the enrollees' choice between health plans, each plan being treated as a bundle of attributes formed from restrictions on provider access. The results shows that enrollee and insurer reports of the attributes of enrollees health plans are quite different, suggesting a dissonance arising, perhaps, from poor information dissemination on the part of health plans and/or lack of attention on the part of enrollees.

Fritsma and Grove (2005), used multinomial logit model to model the relationship between education level and employment status, where employment status is measured as part-time employed, full-time employed, unemployed, and out of the labor force. They present both the coefficient estimates from the multinomial logit models as well as the odds.

Dominique (2003), in his paper he used the K-deformed multinomial logit model to study product differentiation. The focus is on the economic interpretation of the deformation parameter which is the key parameter of the model. Then he establishes the relationship between the parameter and probability choice, price elasticity and mark up.

Study on the effects of commuting and demographic variables on the amount and distribution of out shopping were modeled using household-level survey data in which the proportion of expenditures within specific categories of goods were reported across neighboring retail market areas. The effects on the



propensity to shop outside the core study area were estimated using the two-limit tobit and logit models. Influences on the relative distribution of that out shopping were modeled by multinomial logit. The multinomial logit and tobit models were shown to produce similar estimates, with empirical results indicating that retail sales leakages are increased for out commuters for certain types of goods, Burkey and Harris (2003).

Lymp, et al (2003) studied a choice-based conjoint in economics and marketing to assess the relative contributions of various product attributes and to predict consumer behavior. In their study, subjects were given a set of questions. Each question is a scenario containing several choices from which the subject makes a selection. The choices are characterized by various attributes and particular levels of the attributes. Based on these stated preferences of the subjects, inference is made on the effects of various attributes and their levels on decision making. They used multinomial logit (MNL) model on this study. They develop the MNL model for choice-based conjoint studies and relate the MNL model to well-known bio statistical models. They also describe a Markov Chain Monte Carlo method for adding random coefficients to the MNL model. How the MNL model can be interpreted in terms of odds ratios and attributable risk estimates were discussed. Random coefficients MNL model were also fitted to data from a choice-based conjoint study on patient preference for tertiary care medical centers.



THEORETICAL FRAMEWORK

Multinomial Logit Models

Regression models for the analysis of categorical dependent variables with more than two response categories. Several of the models that we will study may be considered generalizations of logistic regression analysis to polychotomous data. We first consider models that may be used with purely qualitative or nominal data, and then move on to models for ordinal data, where the response categories are ordered.

The Multinomial Distribution

The multinomial distribution considers a random variable Y_i that may take one of several discrete values, which we index $1, 2, \dots, J$. Then let

$$\pi_{ij} = \Pr\{Y_i = j\} \tag{1}$$

Denote the probability that the i -th response falls in the j -th category.

Assuming that the response categories are mutually exclusive and ex-haustive, we have $\sum_{j=1}^J \pi_{ij} = 1$ for each i , i.e. the probabilities add up to one for each individual, and we have only $J - 1$ parameters.



For grouped data it will be convenient to introduce auxiliary random variables representing counts of responses in the various categories. Let n_i denote the number of cases in the i -th group and let Y_{ij} denote the number of responses from the i -th group that fall in the j -th category, with observed value y_{ij} . Note that $\sum_j y_{ij} = n_i$, i.e. the counts in the various response categories add up to the number of cases.

For individual data $n_i = 1$ and Y_{ij} becomes an indicator (or dummy) variable that takes the value 1 if the i -th response falls in the j -th category and 0 otherwise, and $\sum_j y_{ij} = 1$, since one and only one of the indicators y_{ij} can be 'on' for each case.

The probability distribution of the probability distribution of the counts Y_{ij} given the total n_i is given by the multinomial distribution

$$\Pr\{Y_{i1} = y_{i1}, \dots, Y_{iJ} = y_{iJ}\} = \binom{n_i}{y_{i1}, \dots, y_{iJ}} \pi_{i1}^{y_{i1}} \dots \pi_{iJ}^{y_{iJ}} \quad (2)$$

The Multinomial Logit Model

We now consider models for the probabilities Π_{ij} . In particular, we would like to consider models where these probabilities depend on a vector x_i of covariates associated with the i -th individual or group.



Multinomial Logits

Perhaps the simplest approach to multinomial data is to nominate one of the response categories as a baseline or reference cell, calculate log-odds for all other categories relative to the baseline, and then let the log-odds be a linear function of the predictors.

Typically we pick the last category as a baseline and calculate the odds that a member of group i is in category j as opposed to the baseline as π_{ij}/π_{iJ} .

Modeling the Logits

In the multinomial logit model we assume that the log-odds of each response follow a linear model.

$$\eta_{ij} = \log \frac{\pi_{ij}}{\pi_{iJ}} = \alpha_j + \mathbf{x}'_i \beta_j, \quad (3)$$

where α_j is a constant and β_j is a vector of regression coefficients, for $j=1,2,\dots,J-1$. Note that we have written the constant explicitly, so we will assume henceforth that the model matrix \mathbf{X} does not include a column of ones.

This model is analogous to a logistic regression model, except that the probability distribution of the response is multinomial instead of binomial and we have $J-1$ equations instead of one. The $J-1$ multinomial logit equations contrast each of categories $1,2,\dots,J-1$ with category J , whereas the single logistic regression equation is a contrast between successes and failures.



Note that we need only $J-1$ equations to describe a variable with J response categories and that it really makes no difference which category we pick as the reference cell, because we can always convert from one formulation to another.

The missing contrast between categories 1 and 2 can easily be obtained in terms of the other two, since $\log(\pi_{i1}/\pi_{i2}) = \log(\pi_{i1}/\pi_{i3}) - \log(\pi_{i2}/\pi_{i3})$.

$$\eta_{ij} = \alpha_j + \beta_j a_i + \gamma_j a_i^2, \quad (4)$$

Modeling the Probabilities

The multinomial logit model may also be written in terms of the original probabilities π_{ij} rather than the log-odds. Starting from Equation 3 and adopting the convention that $\pi_{iJ} = 0$, we can write

$$\pi_{ij} = \frac{\exp\{\eta_{ij}\}}{\sum_{k=1}^J \exp\{\eta_{ik}\}}. \quad (5)$$

for $j = 1, \dots, J$. To verify this result exponentiate Equation 3 to obtain $\pi_{ij} = \frac{\exp\{\eta_{ij}\}}{\sum_{k=1}^J \exp\{\eta_{ik}\}}$ and note that the convention $\pi_{iJ} = 0$ makes this formula valid for all j .

Next sum over j and use the fact that $\sum_j \pi_{ij} = 1$ to obtain $\pi_{ij} = \frac{\exp\{\eta_{ij}\}}{\sum_{k=1}^J \exp\{\eta_{ik}\}}$.

Finally, use this result on the formula for π_{ij} . Note that Equation 5 will automatically yield probabilities that add up to one for each i .



Maximum Likelihood Estimation

Estimation of the parameters of this model by maximum likelihood proceeds by maximization of the multinomial likelihood (2) with the probabilities Π_{ij} viewed as functions of the α_j and β_j parameters in Equation 3.

The Equivalent Log-Linear Model

Multinomial logit models may also be fit by maximum likelihood working with an equivalent log-linear model and the Poisson likelihood.

Specifically, we treat the random counts Y_{ij} as Poisson random variables with means μ_{ij} satisfying the following log-linear model.

$$\log \mu_{ij} = \eta + \theta_i + \alpha_j^* + \mathbf{x}'_i \beta_j^*, \quad (6)$$

where the parameters satisfy the usual constraints for identifiability. There are three important features of this model:

First, the model includes a separate parameter $\mathbf{x}'_i \beta_j^*$ for each multinomial observation, i.e. each individual or group. This assures exact reproduction of the multinomial denominators η_j . Note that these denominators are fixed known quantities in the multinomial likelihood, but are treated as random in the Poisson likelihood. Making sure we get those right makes the issue of conditioning moot.

Second, the model includes a separate parameter α_j^* for each response category. This allows the counts to vary by response category, permitting non-uniform margins.



Third, the model uses interaction terms $X_i' \beta_j^*$ to represent the effects of the covariates X_i on the log-odds of response j . Once again we have a 'step-up' situation, where main effects in a logistic model become interactions in the equivalent log-linear model.

$$\log(\mu_{ij}/\mu_{iJ}) = (\alpha_j^* - \alpha_J^*) + x_i'(\beta_j^* - \beta_J^*). \quad (7)$$

This equation is identical to the multinomial logit Equation 3 with $\alpha_j = \alpha_j^* - \alpha_J^*$ and $\beta_j = \beta_j^* - \beta_J^*$. Thus, the parameters in the multinomial logit model may be obtained as differences between the parameters in the corresponding log-linear model. Note that the θ_i cancel out, and the restrictions needed for identification, namely $\eta_{jJ} = 0$, are satisfied automatically.

$$\log \mu_{ij} = \eta + \theta_i + \alpha_j^* + \beta_j^* a_i + \gamma_j^* a_i^2 \quad (8)$$



METHODOLOGY

Respondents of the Study

The respondents of the study were college students of Benguet State University-Main Campus. Out of the 6118 college students enrolled at BSU, samples of 200 respondents were chosen to be the sample of the study using Stratified Random Sampling. The population was subdivided into three subpopulations called strata. Stratum I included students who are taking up B.S. Education, B. Elementary Education, B. Library Science and B.S. Home Economics. The students from these courses are classified as group 1. The B.S. Forestry, B.S. Nursing, Doctor of Veterinary Medicine, B.S. Agricultural Engineering and B.S. Development Communication constituted stratum II. Stratum III composed of B.S. Applied Statistics, B.S. Information Technology, B.S. Environmental Science, B.S. Nutrition and Dietetics B.S. Agriculture and B.S. Entrepreneurial Technology. The numbers of sample students from each stratum were determined using the proportional allocation with the given formula:

$$n_i = \frac{nN_i}{N}$$

where $n = \frac{N}{1 + Ne^2}$, Slovin's Formula

N = the population size

N_i = subpopulation size of the i^{th} stratum

e = margin of error



Stratum I consisted of 1,632 students which is 26.68% of the total population, stratum II with 2,039 students constituted 33.32% and 2,447 in stratum III with 40% of the total population. Thus the numbers of respondents to be taken were 53, 67 and 80 from stratum I, II and III, respectively. The sample of each subpopulation was drawn using simple random sampling.

Instrument

The study utilized a questionnaire as the main instrument for data-collection. It consisted of the respondents demographic profile which includes the following: gender, age, regional origin, no. of household members of the family, sources of financial support, educational attainment of the one sending them to school, and how do they spend their allowance.

Data Analysis

The collected data were encoded in the computer and analyzed using Statistical Packages for Social Sciences (SPSS). Multinomial logit analysis techniques was employed on the data gathered from the respondents treating the type of spending behavior of college students enrolled second semester year 2008-2009 as the dependent variables and the socio-demographic, socio-economic profile and some expenditures as the independent variables which include region of origin, age, gender, course, year, no. of the household member of the family, sources of financial support, educational attainment, sources of income, average monthly



allowance, food expenses, rent expenses, transportation expenses, and personal expenses.



Definition of Terms

Income. This is money income receive by a college student from various sources.

Expenditure. This refers to the cash outlay incurred by a college student. It only included regular expenditure.

Allowance. Money receive by student from their parents or guardians on regular basis. It also included stipends of scholar students.

Dependent Variable. Refers to the variable that is determined or explained by one or more explanatory variables.

Independent Variables. Refers to the variable used to predict values of the dependent variable in regression analysis.

Variable. Refers to the characteristics of interest, which is measurable and observable in every aspect in study.

Multinomial Logit Model is a regression model which generalizes regression logistic by allowing more than two discrete outcomes.

Gender. This refers to either male or female.

Respondents. This will refers to the students who will furnish the information or answer the questionnaire.

Categorical Data. Data that consist of count of people, place as things grouped in any system of classification.



Definitely not following the set budget. These are students who are overspending.

Not consistent on following the set budget. These are students who are averagely spenders.

Strictly following the set budget. Students who are not overspending.

Valid. This indicates the number of observations in the dataset were the outcome variable and all predictor variable are non-missing.

Intercept. This is the multinomial logit estimate for definitely not following the set budget relative to strictly following the set budget, and Not consistent on following the se budget relative to strictly following the set budget when the predictor variable in the model are model are evaluated at zero.

Standard Error. These are the standard errors of the individual regression coefficients for the two respective models estimated.

Wald. This is the wald chi-square test that tests the null hypothesis that estimate equals 0.



RESULTS AND DISCUSSION

Relationship Between Type of Spending Behavior and Regional Origin

Table 1 shows the distributions of students according to ethnic origin and type of spending behavior. The odds ratio of .71 indicates that the chance of highlander is lower than the chance of lowlander to spend outside the set budget rather than strictly following the set budget. An odds ratio of .90 means that the tendency of students from the lowlands to spend not consistently within the set budget instead of strictly following the set budget is 1.11 times greater than the chance of highlander students to fall in that type of spending behavior. The Yule's

Table 1. The Regional origin and type of spending behavior of the respondents and the odds ratio and Yule's Q values

ETHNIC ORIGIN	TYPE OF SPENDING BEHAVIOR			TOTAL
	Definitely not following the set budget	Not consistent of following the set budget	Strictly following the set budget	
Highlander	52	55	12	119
Lowlander	38	36	7	81
Total	90	91	19	200
Odds ratio (Yule's Q*)				
Highlander	.71	.17	.90	-.05
Lowlander	-	-	-	-

Legend: *Yule's Q values in bold font:

Interpretation: $0 < |Q| < 0.2$ =very weak association
 $0.2 \leq |Q| < 0.4$ =weak association
 $0.4 \leq |Q| < 0.6$ =moderate association
 $0.6 \leq |Q| < 0.8$ =strong association
 $0.8 \leq |Q| < 1.0$ =very strong association



Q of .17 and -0.05 indicate that there is very weak association between ethnic origin and spending behavior of students.

Relationship Between Type of Spending Behavior and Age of Students

Table 2 shows the cross tabulation of age and type of spending behavior of the respondents including the odds ratio Yule's Q values. The Yule's Q $-.08$ shows that age 19 and below has very weak negative association with definitely not following the set budget. The odds ratio .86 means that ages 19 and below respondents have .86 more times chance of not following the set budget than following the set budget compared to students aging 20 and above. The respondents

Table 2. Age group and type of spending behavior of the respondents and the odds ratio and Yule's Q values

AGE OF THE STUDENTS	TYPE OF SPENDING BEHAVIOR			TOTAL	
	Definitely not following the set budget	Not consistent on following the set budget	Strictly following the set budget		
19 and below	44	43	10	97	
20 and above	46	48	9	103	
Total	90	91	19	200	
Odds ratio (Yule's Q*)					
19 an above	.86	-.08	.81	-.11	-
20 and above	-	-	-	-	-

Legend: * Yule's Q values are bold

Interpretation: $0 < |Q| < 0.2$ =very weak association
 $0.2 \leq |Q| < 0.4$ =weak association
 $0.4 \leq |Q| < 0.6$ =moderate association
 $0.6 \leq |Q| < 0.8$ =strong association
 $0.8 \leq |Q| < 1.0$ =very strong association



aging from 19 and below have very weak negative association with not consistent on following the set budget. The odds ratio .81 means that the chance of aging 20 and above to be in the average of spending instead of not overspending is 1.23 times than the chance of 19 years old and below.

Relationship Between Type of Spending Behavior and Gender of Students

The distributions of the type of spending behavior of the respondents are shown in Table 3 the odds ratio and Yule's Q values are also presented. There is a weak association between the male and definitely not following the set budget. The odds ratio .56 means that the chance of male respondents to definitely not

Table 3. Gender and type of spending behavior of the respondents and the odds ratio and Yule's Q values

GENDER	TYPE OF SPENDING BEHAVIOR			TOTAL
	Definitely not following the set budget	Not consistent on following the set budget	Strictly following the set budget	
Male	30	40	9	79
Female	60	51	10	121
Total	90	91	19	200
Odds ratio (Yule's Q*)				
Male	.56	-.28	.87	-.07
Female	-	-	-	-

Legend: * Yule's Q values are bold

Interpretation: $0 < |Q| < 0.2$ =very weak association

$0.2 \leq |Q| < 0.4$ =weak association

$0.4 \leq |Q| < 0.6$ =moderate association

$0.6 \leq |Q| < 0.8$ =strong association

$0.8 \leq |Q| < 1.0$ =very strong association



following the set budget rather than strictly follow the set budget is smaller than the chance of female respondents to follow that type of spending behavior.

Relationship Between Type of Spending Behavior and Year Level

The distribution of year level and type of spending behavior with odds and Yule's Q values are presented in table 4. There is a weak negative association between first to second year students and definitely not following the set budget. The chance that first year to second year will definitely follow the set budget rather than strictly follow the set budget is .61 than the chance of third to fourth years. First year to second year in not consistent on following the set budget has a very weak association.

Table 4. Year level and type of spending behavior of the respondents and the odds ratio and Yule's Q values

YEAR LEVEL	TYPE OF SPENDING BEHAVIOR			TOTAL		
	Definitely not following the set budget	Not Consistent on following the set budget	Strictly following the set budget			
I and II	41	47	11	99		
III and IV	49	44	8	101		
Total	90	91	19	200		
Odds ratio(Yule's Q)						
I and II	.61	-.24	.78	.78	-.12	-
III and IV	-	-	-	-	-	-

Legend: * Yule's Q values are bold

Interpretation: $0 < |Q| < 0.2$ =very weak association

$0.2 \leq |Q| < 0.4$ =weak association

$0.4 \leq |Q| < 0.6$ =moderate association

$0.6 \leq |Q| < 0.8$ =strong association

$0.8 \leq |Q| < 1.0$ =very strong association



Relationship Between Type of Spending Behavior and Number of Household

The table on the number of household and type of spending behavior shows that moderate relationship exists between the two variables. The tendency that students with 6 and below members will be on the definitely following the set budget rather than strictly following the set budget is 2.50 times than the chance of students with 7 and above family members. In the chance to be not consistent in following the set budget instead of strictly following the set budget is 2.94 times greater than the probability of students with 1-6 family members to be in the not consistent of following the set budget rather than strictly following the set budget.

Table 5. Number of households and spending behavior of the respondents and the odds ratio and Yule's Q values

NUMBER OF HOUSEHOLDS	TYPE OF SPENDING BEHAVIOR			TOTAL	
	Definitely following the set budget	not following the set budget	Strictly following the set budget		
1-6	36	40	4	80	
7 and above	54	51	15	120	
Total	90	91	19	200	
Odds ratio (Yule's Q*)					
1-6	2.50	.43	2.94	.49	-
7 an above	-	-	-	-	-

Legend: * Yule's Q values are bold

Interpretation: $0 < |Q| < 0.2$ =very weak association
 $0.2 \leq |Q| < 0.4$ =weak association
 $0.4 \leq |Q| < 0.6$ =moderate association
 $0.6 \leq |Q| < 0.8$ =strong association
 $0.8 \leq |Q| < 1.0$ =very strong association



Relationship Between Type of Spending Behavior and Source of Financial Support

The distribution of type of spending behavior and source of financial support are shown in table 6. The odds ratio and Yule's Q are also presented. There is a weak association between the family and definitely following the set budget. The odds ratio .51 which is less than one implies a negative association. The Yule's Q -.54 shows a negative moderate association between family and consistently following the set budget.

Table 6. Source of financial support and spending behavior of the respondents and the odds ratio and Yule's Q values

SOURCE OF FINANCIAL SUPPORT	TYPE OF SPENDING BEHAVIOR			TOTAL
	Definitely not following the set budget	Not consistent in following the set budget	Strictly following the set budget	
Family	73	65	17	155
Grant/Scholarship and Self Supporting	17	26	2	45
Total	90	91	19	200
Odds ratio(Yule's Q)				
Family	.51	-.32	.30	-.54
Grant Scholarship and Self Supporting	-	-	-	-

Legend: * Yule's Q values are bold

Interpretation: $0 < |Q| < 0.2$ =very weak association

$0.2 \leq |Q| < 0.4$ =weak association

$0.4 \leq |Q| < 0.6$ =moderate association

$0.6 \leq |Q| < 0.8$ =strong association

$0.8 \leq |Q| < 1.0$ =very strong association



Relationship Between Type of Spending Behavior and Educational Attainment of Parents/Guardian

Table 7 shows that the odds of respondents parents/guardian is under elementary level in either definitely not or not consistent in following the set budget is 1.18 and .75 times greater respectively than strictly following the set budget over college level and degree holder. The association between respondents' parents under elementary level and definitely not following the set budget is very

Table 7. Educational Attainment of parents/guardian and spending behavior of the respondents and the odds ratio and Yule's Q values

EDUCATIONAL ATTAINMENT	TYPE OF SPENDING BEHAVIOR			TOTAL	
	Definitely not following the set budget	Not consistent in following the set budget	Strictly following the set budget		
Elementary	23	19	3	45	
Secondary in Vocational	54	55	14	123	
College Level and Degree holder	13	17	2	32	
Total	90	91	19	200	
Odds ratio (Yule's Q*)					
Elementary	1.18	.08	.75	-.14	-
Secondary in Vocational	.59	-.26	.46	-.37	-
College and Degree holder	-	-	-	-	-

Legend: * Yule's Q values are bold

Interpretation: $0 < |Q| < 0.2$ =very weak association

$0.2 \leq |Q| < 0.4$ =weak association

$0.4 \leq |Q| < 0.6$ =moderate association

$0.6 \leq |Q| < 0.8$ =strong association

$0.8 \leq |Q| < 1.0$ =very strong association



weak association (.18), and in not consistent in following the set budget is very weak negative association (0.14). The odds ratio 1.18 implies that the tendency of students whose parents is elementary level to definitely not following the set budget is almost the same to strictly following the set budget. There is both negative weak association between being secondary and vocational and either definitely not following or not consistent on following the set budget. As indicated by the Yule's Q value -0.26 and -0.37, respectively.

Relationship Between Type of Spending Behavior and Source of Income of Parents Guardian of the Respondents

As shown in table 8, the odds ratio .73 implies that the tendency of the students o definitely not follow the set budget is greater than to strictly following the set budget as compared to students whose parents source of income is farming. The association between definitely not following and source of income is business and personal employment is a negative very weak association. The odds ratio of students whose parents' source of income is pension, private employee or government employee is .91 and definitely not following the set budget is almost the same to students whose parents' source of income is farming. The Yule'sQ-0.39 and -0.33 implies a negative weak association between respondents whose source of income is business and personal employee, pension, private employee and government employee and not consistent in following the set budget.



Table 8. Source of income of parents/guardian and spending behavior of the respondents and the odds ratio and Yule's Q values

SOURCE OF INCOME	TYPE OF SPENDING BEHAVIOR			TOTAL
	Definitely not following the set budget	Not consistent in following the set budget	Strictly following the set budget	
Business and Personal employment	24	24	6	54
Pension, Private and Gov't employee	55	49	11	115
Farming	11	18	2	31
Total	90	91	19	200
Odds ratio (Yule's Q*)				
Business and Personal employment	.73	-.16	.44	-.39
Pension, Private and Gov't employee	.91	-.05	.50	-.33
Farming	-	-	-	-

Legend: * Yule's Q values are bold

Interpretation: $0 < |Q| < 0.2$ =very weak association

$0.2 \leq |Q| < 0.4$ =weak association

$0.4 \leq |Q| < 0.6$ =moderate association

$0.6 \leq |Q| < 0.8$ =strong association

$0.8 \leq |Q| < 1.0$ =very strong association

Relationship Between Type of Spending Behavior and How Often Parents Receive their Income

In table 9, it shows that the odds of the students of the receiving allowance daily and weekly in definitely not following the set budget is .51 the same students who's source of income financial support is farming. The Yule's Q value -0.32



implies a weak negative association between students receiving their allowance daily and weekly and definitely following the set budget. The association between not consistent in following the set budget and with parents receiving their allowance daily and weekly in following the set budget is weak negative.

Table 9. How often Parents receive their income and spending behavior of the respondents and the odds ratio and Yule's Q values

HOW OFTEN PARENTS RECIEVED THEIR INCOME	TYPE OF SPENDING BEHAVIOR			TOTAL	
	Definitely not following the set budget	Not consistant in following the set budget	Strictly following the set budget		
Daily and Weekly	17	19	6	42	
Monthly and Quarterly	73	72	13	158	
Total	90	91	19	200	
Odds ratio (Yule's Q*)					
Daily and Weekly	.51	-.32	.57	-.28	-
Monthly and Quarterly	-	-	-	-	-

Legend: * Yule's Q values are bold

Interpretation: $0 < |Q| < 0.2$ =very weak association

$0.2 \leq |Q| < 0.4$ =weak association

$0.4 \leq |Q| < 0.6$ =moderate association

$0.6 \leq |Q| < 0.8$ =strong association

$0.8 \leq |Q| < 1.0$ =very strong association



Relationship Between Type of Spending Behavior and Parents Monthly Income

As shown in table 10, the odds ratio 1.23 implies that the tendency of the students who's definitely not following the set budget is lesser than to those who are not consistent in following the set budget. The association between definitely not following the set budget and having a parent's monthly income of 15,000 and below is very weak association as indicated by the Yule's Q value 0.01. The odds ratio of students with parents' monthly income is 15,000 and below in not consistent in following the set budget is 1.51 times greater than definitely not

Table 10. Parents' monthly income and spending behavior of the respondents and the odds ratio and Yule's Q values

PARENTS' MONTHLY INCOME	TYPE OF SPENDING BEHAVIOR			TOTAL	
	Definitely not following the set budget	Not consistent on following the set budget	Strictly following the set budget		
15,000 and below	52	57	10	119	
1,5001 and above	38	34	9	81	
Total	90	91	19	200	
Odds ratio (Yule's Q*)					
15,000 and below	1.23	.10	1.51	.20	-
15,000 and above	-	-	-	-	-

Legend: * Yule's Q values are bold

Interpretation: $0 < |Q| < 0.2$ =very weak association

$0.2 \leq |Q| < 0.4$ =weak association

$0.4 \leq |Q| < 0.6$ =moderate association

$0.6 \leq |Q| < 0.8$ =strong association

$0.8 \leq |Q| < 1.0$ =very strong association



following the set budget. The Yule's Q 0.20 implied a weak association between students with parents' monthly income of 15,000 and below and not consistent in following the set budget.

Relationship Between Type of Spending Behavior and How Often Students Receive their Allowance

In table 11, it shows that the odds of the students receiving allowance daily and weekly in definitely not following the set budget is 1.46 greater than strictly

Table 11. How often students received their allowance and spending behavior of the respondents and the odds ratio and Yule's Q values

HOW OFTEN STUDENTS RECEIVED THEIR ALLOWANCE	TYPE OF SPENDING BEHAVIOR			TOTAL	
	Definitely not following the set budget	Not consistent in following the set budget	Strictly following the set budget		
Daily and Weekly	60	55	11	126	
Monthly, Quarterly and not regular	30	36	8	74	
Total	90	91	19	200	
Odds ratio (Yule's Q*)					
Daily and weekly	1.46	.19	1.11	.05	-
Monthly, Quarterly and Not Regular	-	-	-	-	-

Legend: * Yule's Q values are bold

Interpretation: $0 < |Q| < 0.2$ =very weak association

$0.2 \leq |Q| < 0.4$ =weak association

$0.4 \leq |Q| < 0.6$ =moderate association

$0.6 \leq |Q| < 0.8$ =strong association

$0.8 \leq |Q| < 1.0$ =very strong association



following the set budget as compared to students receiving allowance monthly, quarterly and not regular. The Yule's Q value 0.19 implies a very weak association between students receiving allowance daily and weekly and definitely not following the set budget. The value 1.11 odds ratio for students who receives their allowance daily and weekly means that their tendency to be not consistent on following the set budget is almost the same to the tendency to be definitely following the set budget . The Yule's Q value 0.05 indicates a very weak association of students who are not consistent in following the set budget.

Relationship Between Type of Spending Behavior and Monthly Allowance

Table 12 shows the distributions of the type of spending behavior and monthly allowance of the respondents. There is a very weak association between the monthly income below 2,000 and definitely not following the set budget. The odds ratio .94 means that those respondents with 2,000 and below monthly allowance have .94 more times chance to be in the definitely not following the set budget rather than strictly following the set budget compared to 2,0001 and above monthly allowance. Very weak association exists between 2,000 and below allowance with average type of spending behavior.



Table 12. Monthly allowance and spending behavior of the respondents and the odds ratio and Yule's Q values

MONTHLY ALLOWANCE	TYPE OF SPENDING BEHAVIOR			TOTAL	
	Definitely not following the set budget	Not consistent in following the set budget	Strictly following the set budget		
3000 and below	75	77	16	168	
3001 and above	15	14	3	32	
Total	90	91	19	200	
Odds ratio (Yule's Q*)					
3000 and above	.94	-.03	1.03	.01	-
3001 and above	-	-	-	-	-

Legend: * Yule's Q values are bold

Interpretation: $0 < |Q| < 0.2$ =very weak association

$0.2 \leq |Q| < 0.4$ =weak association

$0.4 \leq |Q| < 0.6$ =moderate association

$0.6 \leq |Q| < 0.8$ =strong association

$0.8 \leq |Q| < 1.0$ =very strong association

Relationship Between Type of Spending Behavior and Food Expense

Table 13 shows the cross tabulation of the type of spending behavior and food expenses of the respondents. The table reveals that there is a weak association between their food expense and their type of spending behavior. The odds ratio 1.73 and 1.25 which is greater than 1 implies a strong relationship, that shows an association between food expense below 1,500 in the definitely not following the set budget and with not consistent on following the set budget.



Table 13. Food expense and spending behavior of the respondents and the odds ratio and Yule's Q values

FOOD EXPENSE	TYPE OF SPENDING BEHAVIOR			TOTAL	
	Definitely not following the set budget	Not consistent on following the set budget	Strictly following the set budget		
1,500 and below	83	86	18	187	
1,501 and above	7	5	1	13	
Total	90	91	19	200	
Odds ratio (Yule's Q*)					
1,500 and below	1.73	.27	1.25	.11	-
1,501 and above	-	-	-	-	-

Legend: * Yule's Q values are bold

Interpretation: $0 < |Q| < 0.2$ =very weak association

$0.2 \leq |Q| < 0.4$ =weak association

$0.4 \leq |Q| < 0.6$ =moderate association

$0.6 \leq |Q| < 0.8$ =strong association

$0.8 \leq |Q| < 1.0$ =very strong association

Relationship Between Type of Spending Behavior and Rent Expense

Table 14 shows that is a weak association on the rent expense and type of spending behavior of the students. The odds ratio of definitely not following the set budget and not consistent in following the set budget as students rent expense range from 3,500 and below is almost the same (.70 and .71).



Table 14. Rent expense and spending behavior of the respondents and the odds ratio and Yule's Q values

RENT EXPENSE	TYPE OF SPENDING BEHAVIOR			TOTAL	
	Definitely not following the set budget	Not consistent in following the set budget	Strictly following the set budget		
3,500 and below	77	78	17	172	
3501 and above	13	13	2	28	
	90	91	19	200	
Odds ratio (Yule's Q*)					
3,500 and below	.70	-.18	.71	-.17	-
3501 and above	-	-	-	-	-

Legend: * Yule's Q values are bold

Interpretation: $0 < |Q| < 0.2$ =very weak association

$0.2 \leq |Q| < 0.4$ =weak association

$0.4 \leq |Q| < 0.6$ =moderate association

$0.6 \leq |Q| < 0.8$ =strong association

$0.8 \leq |Q| < 1.0$ =very strong association

Relationship Between Type of Spending Behavior and Transportation Expense

Table 15 shows the cross-tabulation of the type of spending and transportation expense of the respondents. The table reveals that there is a weak association between students' transportation expense and the type of spending habit. The odds ratio .70 and .96 which is close to 1.0 implies statistical independence, that is, there is no association between transportation expense and type of spending behavior.



Table 15. Transportation expense and spending behavior of the respondents and the odds ratio and Yule's Q values

TRANSPORTATION EXPENSE	TYPE OF SPENDING BEHAVIOR			TOTAL	
	Definitely not following the set budget	Not consistent in following the set budget	Strictly following the set budget		
1,000 and below	83	86	18	187	
1,001 and above	7	5	1	13	
Total	90	91	19	200	
Odds ratio (Yule's Q*)					
1,000 and below	.70	-.18	.96	-.02	-
1,000 and above	-	-	-	-	-

Legend: * Yule's Q values are bold

Interpretation: $0 < |Q| < 0.2$ =very weak association

$0.2 \leq |Q| < 0.4$ =weak association

$0.4 \leq |Q| < 0.6$ =moderate association

$0.6 \leq |Q| < 0.8$ =strong association

$0.8 \leq |Q| < 1.0$ =very strong association

Relationship Between Type of Spending Behavior and Personal Expense

The Yule's Q value shows that there is negative moderate association between type of spending behavior and personal expense. A respondent who are spending 1,500 and below has an odds ratio of .40 shows that there is a negative association in definitely following and not consistent in following the set budget.



Table 16. Personal expense and spending behavior of the respondents and the odds ratio and Yule's Q values

PERSONAL EXPENSE	TYPE OF SPENDING BEHAVIOR			TOTAL	
	Definitely not following the set budget	Not consistent in following the set budget	Strictly following the set budget		
1,500 and below	79	80	18	177	
1,501 and above	11	11	1	23	
Total	90	91	19	200	
Odds ratio (Yule's Q*)					
1,500 and below	.40	-.43	.40	-.43	-
1,501 and above	-	-	-	-	-

Legend: * Yule's Q values are bold

Interpretation: $0 < |Q| < 0.2$ =very weak association

$0.2 \leq |Q| < 0.4$ =weak association

$0.4 \leq |Q| < 0.6$ =moderate association

$0.6 \leq |Q| < 0.8$ =strong association

$0.8 \leq |Q| < 1.0$ =very strong association

Relationship Between Type of Spending Behavior and Personal Course of the Respondents

As shown in table 17, the odds of group I (BSE, BEE, BLIS and BSHE) in definitely not and not consistent in consistent in following the set budget I 1.71 and 2.02 times greater, respectively than strictly following it over group III (BSAS,BSIT,BSES,BSND, BSA and BSET). The association between being in group I and group II (BSF,BSN,DVM,BSAEng and BSDC) in definitely not following the set budget is weak and negative weak (0.26 and -0.20). The odds ratio 1.00 implies that the tendency of group II in not consistent in following the set budget is the



same to strictly following the set budget. Not consistent in following the set budget has no relationship on students in group II while students in group I has a weak association.

Table 17. Course and Spending Behavior of the Respondents and the Odds Ratio and Yule's Q values

COURSE	TYPE OF SPENDING BEHAVIOR			TOTAL	
	Definitely not following the set budget	Not consistent in following the	Strictly following the set budget		
Group I	25	25	3	53	
Group II	26	33	8	67	
Group III	39	33	8	80	
Total	90	91	19	200	
Odds ratio (Yule's Q*)					
Group I	1.71	.26	2.02	.34	-
Group II	.67	-.20	1.00	0	-
Group III	-	-	-	-	-

Legend: * Yule's Q values are bold

Interpretation: $0 < |Q| < 0.2$ =very weak association

$0.2 \leq |Q| < 0.4$ =weak association

$0.4 \leq |Q| < 0.6$ =moderate association

$0.6 \leq |Q| < 0.8$ =strong association

$0.8 \leq |Q| < 1.0$ =very strong association



SUMMARY, CONCLUSION AND RECOMMENDATION

Summary

The objective of the study was to determine the association of the type of spending behavior to socio-demographic, socio-economic and expenditures of Benguet State University students.

Number of households' member of the family shows a moderate association to the type of spending behavior of BSU students. Weak to very weak association of the type of spending behavior was revealed in regional origin, gender, year level and food expense. The inverse of that association was seen in the source of income.

Type of spending behavior shows a positive association on the number of household member of the family, course, monthly income of parents/guardian, how often students receive their allowance, food expense and educational attainment of parents/guardian. However, it implies a negative association to educational attainment on those in the not consistent in following the set budget.

For age group it implies a very weak association to the type of spending behavior. Furthermore, rent expense and how often parents receive their income revealed a weak association to the type of spending behavior. From weak to moderate association on the source of income of parents was revealed.



Conclusion

Based on the findings of the study, the following conclusions were drawn. Source of income of the respondents shows a very weak to weak association. Variables which strongly affect the decision of students to follow the set budget are monthly income, number of household member of the family, how often students receive their allowance, educational attainment of parents and their food expenses. The type of spending behavior is independent from age, regional origin and monthly allowance.

In the results it revealed that the chances of students to strictly follow the set budget who were highlanders, ages 19 and below, males, course under group III (BSAS, BSIT, BSES, BSND, BSA and BSET), first years to second years, with 7 and above members of the family, source of financial support is family and parents attained secondary or vocational were higher than those belonging to other groups. In addition, there were higher chances to follow strictly the set budget of students whose parents' source of income is business, personal employment, private employee, government employee, and receiving pension, receiving income in a daily and weekly basis, receiving allowance in monthly, quarterly and not regular, monthly allowance of 3,001 and above, spend 1,501 and above, 3,500 and below, 1,000 and below, 1,500 and below on food, rent, transportation and personal, respectively.



Students of BSU are more likely to be not consistent in following the set budget if they are lowlanders, females, with monthly allowance of 3,000 and below and with transportation expenses of 1,001 and above.

On the other hand, students with age 20 and above, female, course under group II (BSF, BSN, DVM, BSAEng, and BSDC) , with parents source of income is farming and monthly allowance of 3,000 and below are seen to be definitely not following the set budget.

Recommendation

It is recommended that further study be done on the same research with the wider scope of expenditures, spending habit and other related to spending behaviors. The same statistical tools/analysis or other statistics can be used to measure association, variation and other measurements. Consideration of other objectives is also recommended.



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APPENDIX A

Letter to the President

Benguet State University
College of Arts and Sciences
Math-Physics-Statistics Department
La Trinidad, Benguet

February 4, 2009

DR. ROGELIO D. COLTING
President
Benguet State University

SIR:

We, the undersigned fourth year students taking up Bachelor of Science in Applied Statistics at Benguet State University are conducting a research entitled “Multinomial Logit Analysis on Spending Behavior of Benguet State University Students”.

In view hereof, we would like to request permission from your good office to float questionnaires to selected College Students of Benguet State University.

Thank you very much for your favorable consideration.

Respectfully yours,

Filmer A. Bagayao
Bonifacio G. Calizar Jr.
Myla A. Palao-ay
Ronald T. Lingbaoan

Noted:

DR. MARIA AZUCENA B. LUBRICA PROF. AUREA MARIE M. SANDOVAL
Thesis adviser CAS Dean

DR. MARIA AZUCENA B. LUBRICA
MPS Chairman

DR. ROGELIO D. COLTING
President



APPENDIX B

Categories and Codes of Variables

Variable Description	Observed	Variable Code
Type of Spending Behavior	Definitely not following	1
	Not consistent on following	2
	Strictly following	3
Regional Origin	Highlander	1
	Lowlander	2
Age	19 yrs old and below	1
	20 yrs. Old and above	2
Gender	Male	1
	Female	2
Course	BSE,BEE,BLIS and BSHE	1
	BSF,BSN,DVM,BSAEng and BSDC	2
	BSAS, BSIT,BSES,BSND, BSA and BSET	3
Year level	I and II	1
	III and IV	2
No. of household in the family	1-6	1
	7and above	2
Sources of financial support	Family	1
	Grand scholarship and self supporting	2
Educational attainment of person sending you to school	Elementary	1
	Secondary and vocational	2
	College level and degree holder	3
Sources of income	Business and personal employment	1
	Pensions, private employee and government employee	2



	Farming	3
Often they received their income	Daily and weekly	1
	Monthly and quarterly	2
Average monthly income	Php 15,000 and below	1
	Php 15,001 above	2
Often do you receive your allowance	Daily and weekly	1
	Monthly, quarterly, not regular	2
allowance Monthly given	3000 and below	1
	3001 and above	2
Foods expenses	1500 and below	1
	Php 1501 and above	2
Rent expenses	Php 3000 and below and not renting	1
	Php 3001 and above	2
Transportation expenses	Php1000 and below	1
	Php 1001 and above	2
Personal expenses	Php1500 and below	1
	Php 1501 and above	2



APPENDIX C

Data Set

Resp #	Y	Ethnic	Age	Gender	Course	Year	NOH	SFS	EA	SI	RI	MI	RA	MA	FE	RE	TE	PE
1	1	1	1	2	3	2	1	1	2	2	2	2	2	1	1	1	1	1
2	1	1	2	2	3	2	2	1	1	1	1	1	1	1	1	1	1	1
3	2	1	2	1	3	2	1	1	2	1	2	1	1	1	1	2	1	1
4	2	1	1	2	1	1	2	1	1	2	2	2	1	1	1	1	1	1
5	2	1	2	2	1	2	2	1	3	1	2	2	1	1	1	2	1	1
6	3	1	1	1	3	1	1	1	2	2	2	1	2	1	1	1	1	1
7	2	1	2	1	3	2	2	1	2	2	2	1	2	1	1	1	1	1
8	2	1	2	2	3	1	2	1	2	2	2	1	2	1	1	1	1	1
9	2	1	2	2	3	2	2	1	2	3	2	1	2	1	1	1	1	1
10	2	1	2	1	2	1	2	1	3	2	1	1	1	1	2	1	1	1
11	3	2	2	1	2	2	2	1	3	2	1	1	1	1	1	1	1	1
12	2	2	2	1	2	2	1	1	2	3	2	1	2	1	1	1	1	1
13	1	1	1	1	3	2	1	1	3	2	2	1	2	2	1	1	1	1
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15	2	2	2	2	2	1	2	1	2	3	2	1	1	1	2	1	2	1
16	2	1	2	2	1	1	2	1	3	3	2	1	2	1	1	1	1	1
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18	2	2	1	1	3	1	1	1	3	3	2	1	2	2	1	2	1	2
19	2	2	1	2	3	1	2	1	1	2	2	1	2	1	1	1	1	1
20	1	1	1	1	3	1	1	1	2	1	1	1	1	1	1	1	1	1
21	2	1	2	1	1	2	2	1	2	2	2	1	1	1	1	1	1	1
22	1	2	2	2	3	2	2	2	1	2	2	1	2	1	1	1	1	1
23	2	1	2	2	3	2	2	1	1	2	2	1	2	1	1	1	1	1
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25	2	1	2	2	2	2	1	1	2	2	2	1	1	1	1	1	2
26	1	2	1	1	1	1	2	1	2	1	2	1	2	2	1	1	1
27	2	2	1	2	2	1	2	1	3	3	2	2	2	1	2	1	1
28	3	1	1	2	3	1	2	1	2	2	2	1	1	1	1	1	1
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30	1	1	2	2	3	2	2	2	2	3	2	1	2	1	1	1	2
31	1	1	1	1	2	1	2	1	2	2	2	1	2	1	1	1	1
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65	1	2	1	2	3	1	2	1	1	2	2	2	2	2	1	1	1	1
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69	1	2	1	1	3	1	2	1	3	3	2	2	1	1	1	1	1	1
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71	1	1	2	2	3	2	1	1	2	2	2	1	1	2	1	1	1	2
72	2	1	2	1	1	2	2	2	2	3	2	2	1	1	1	1	1	1
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81	3	1	2	1	1	2	1	1	2	2	2	2	1	1	1	2	1	1
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83	1	2	1	2	2	1	2	1	1	1	1	1	1	1	1	1	2	1
84	1	1	2	2	3	2	2	1	1	1	2	2	2	1	1	1	2	1



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87	2	1	1	2	3	1	1	2	3	3	2	1	1	1	1	1	1	1
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93	3	2	2	2	2	2	2	1	1	2	2	1	1	2	1	1	1	1
94	2	2	1	2	3	2	2	2	2	2	1	2	1	1	1	1	1	1
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99	1	1	1	2	2	1	1	1	3	1	2	1	1	1	1	1	1	1
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109	2	1	1	1	2	1	1	1	1	2	1	1	1	2	1	2	1	1
110	1	2	2	2	3	2	2	1	1	2	1	2	1	2	1	2	1	1
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113	1	1	2	2	1	2	1	1	2	3	2	2	1	1	1	1	1	2
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129	3	2	2	2	3	2	2	2	2	2	2	2	1	1	1	1	1	1
130	1	2	2	1	2	2	2	2	3	3	2	1	1	1	1	1	1	1
131	3	1	2	1	1	2	2	2	2	1	1	1	1	2	1	1	1	1
132	2	1	2	2	2	2	1	1	3	3	2	1	1	1	1	2	1	2
133	3	1	1	2	2	1	2	1	2	2	2	2	2	1	1	1	2	1
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138	1	2	2	2	3	2	1	2	2	2	2	1	1	1	1	1	1	1
139	2	2	1	2	2	1	2	1	2	1	1	1	2	1	1	1	1	1
140	1	1	1	2	1	1	2	1	2	3	2	2	1	1	1	1	1	1
141	2	1	1	1	3	1	2	1	3	3	2	2	1	1	1	1	1	1
142	1	1	2	1	2	1	2	2	2	1	1	2	2	1	1	1	1	1
143	1	2	1	2	1	1	1	1	1	1	2	1	1	1	1	2	1	2
144	1	1	2	2	1	1	2	1	2	2	2	1	2	1	1	1	1	2



145	1	2	1	1	3	1	2	1	2	2	2	1	1	2	1	1	1	1
146	2	1	1	1	1	1	2	1	2	1	1	2	2	2	1	1	1	1
147	2	1	1	1	1	1	1	2	3	3	2	2	1	2	2	1	1	1
148	2	2	1	2	3	1	1	1	3	3	2	1	1	1	1	1	1	1
149	1	1	1	2	1	1	2	2	2	2	2	2	1	1	1	1	1	2
150	1	1	2	2	1	2	2	1	3	1	1	2	1	1	1	1	1	1
151	3	1	2	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1
152	1	2	2	1	1	2	2	1	1	1	1	1	1	2	1	1	1	1
153	1	2	1	2	1	2	1	2	1	2	2	1	1	2	1	1	1	1
154	1	1	1	2	3	1	1	1	2	2	2	1	1	1	1	2	1	2
155	1	1	1	2	3	2	2	1	2	2	2	1	2	1	1	1	1	1
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157	2	2	2	1	1	1	1	2	2	2	2	1	1	2	1	1	1	1
158	2	2	1	2	3	1	2	1	1	2	2	2	1	1	2	1	1	1
159	1	1	1	2	3	1	2	1	1	2	2	2	1	1	2	1	1	1
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165	3	1	1	2	2	1	2	1	2	2	2	2	2	1	1	1	1	1
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169	2	1	2	1	3	2	1	1	2	1	2	1	1	1	1	1	1	2
170	1	1	2	1	3	2	2	1	2	2	2	2	1	1	1	1	1	1
171	1	1	2	2	1	2	2	2	1	2	2	1	1	1	1	1	1	1
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173	1	1	2	2	1	2	1	1	1	2	2	2	1	1	1	1	1	1
174	1	1	1	2	3	2	1	1	2	2	2	1	1	1	1	1	1	1



175	2	2	1	2	3	1	1	1	2	1	2	2	1	1	1	1	2	1
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177	2	2	2	2	2	2	1	1	1	2	2	2	2	1	1	1	1	1
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191	2	1	1	1	3	1	2	1	2	1	1	2	1	1	1	1	1	2
192	3	2	1	1	3	1	1	1	2	1	1	2	2	1	1	1	1	1
193	1	1	1	2	3	1	1	2	2	2	2	2	1	2	1	1	1	1
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199	2	1	2	2	3	2	1	2	2	2	2	1	2	1	1	1	1	1
200	1	2	1	2	3	2	1	1	1	2	2	2	2	1	1	1	1	1



Legend:

Y (Dependent variables) = Type of Spending Behaviour Resp.#=Respondents Number
Ethnic= Ethnic of Origin RE = Rent Expenses Monthly
Year= Year Level NOH= Number of Household in the family
SFS = Sources of Financial support EA = Educational attainment of parents/ guardians
SI = Sources of Income of parents/guardians RI= How often do they receive income
MI= Average Monthly Income RA = how often do you receive allowance
MA = Monthly allowance FE= Food Expenses Monthly
TE = Transportation Expenses Monthly PE = Personal Expenses Monthly





APPENDIX D

Result of Multinomial Logit Model

Nominal Regression

Case Processing Summary

		N
Y	1	90
	2	91
	3	19
REGION	1	119
	2	81
Valid		200
Missing		0
Total		200



Parameter Estimates

Y		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
1	Intercept	1.692	.411	16.916	1	.000			
	[REGION=1]	-.225	.521	.187	1	.666	.798	.287	2.217
	[REGION=2]	0 ^a	.	.	0	.	.	.	.
2	Intercept	1.638	.413	15.716	1	.000			
	[REGION=1]	-.115	.522	.049	1	.825	.891	.321	2.478
	[REGION=2]	0 ^a	.	.	0	.	.	.	.

a. This parameter is set to zero because it is redundant.



Case Processing Summary

		N
Y	1	90
	2	91
	3	19
AGE	1	97
	2	103
Valid		200
Missing		0
Total		200



Parameter Estimates

Y		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
1	Intercept	1.631	.364	20.034	1	.000	.861	.320	2.319
	[AGE=1]	-.150	.506	.088	1	.767			
	[AGE=2]	0 ^a	.	.	0	.			
2	Intercept	1.674	.363	21.238	1	.000	.806	.300	2.170
	[AGE=1]	-.215	.505	.182	1	.670			
	[AGE=2]	0 ^a	.	.	0	.			

^a. This parameter is set to zero because it is redundant.

Case Processing Summary

		N
Y	1	90
	2	91
	3	19
GENDER	1	79
	2	121
Valid		200
Missing		0
Total		200



Parameter Estimates

Y		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
1	Intercept	1.792	.342	27.518	1	.000	.556	.204	1.512
	[GENDER=1]	-.588	.511	1.323	1	.250			
	[GENDER=2]	0 ^a	.	.	0	.			
2	Intercept	1.629	.346	22.193	1	.000	.871	.323	2.348
	[GENDER=1]	-.138	.506	.074	1	.786			
	[GENDER=2]	0 ^a	.	.	0	.			

^a. This parameter is set to zero because it is redundant.

Case Processing Summary

		N
Y	1	90
	2	91
	3	19
YEAR	1	99
	2	101
Valid		200
Missing		0
Total		200



Parameter Estimates

Y		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
1	Intercept	1.812	.381	22.590	1	.000			
	[YEAR=1]	-.497	.511	.946	1	.331	.609	.224	1.655
	[YEAR=2]	0 ^a	.	.	0	.	.	.	.
2	Intercept	1.705	.384	19.673	1	.000			
	[YEAR=1]	-.252	.510	.245	1	.620	.777	.286	2.110
	[YEAR=2]	0 ^a	.	.	0	.	.	.	.

a. This parameter is set to zero because it is redundant.

Case Processing Summary

		N
Y	1	90
	2	91
	3	19
NOH	1	80
	2	120
Valid		200
Missing		0
Total		200



Parameter Estimates

Y		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
1	Intercept	1.281	.292	19.261	1	.000			
	[NOH=1]	.916	.602	2.313	1	.128	2.500	.768	8.143
	[NOH=2]	0 ^a	.	.	0	.	.	.	.
2	Intercept	1.224	.294	17.359	1	.000			
	[NOH=1]	1.079	.601	3.221	1	.073	2.941	.906	9.553
	[NOH=2]	0 ^a	.	.	0	.	.	.	.

a. This parameter is set to zero because it is redundant.

Case Processing Summary

		N
Y	1	90
	2	91
	3	19
SFS	1	155
	2	45
Valid		200
Missing		0
Total		200



Parameter Estimates

Y		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
1	Intercept	2.140	.748	8.196	1	.004			
	[SFS=1]	-.683	.795	.738	1	.390	.505	.106	2.398
	[SFS=2]	0 ^a	.	.	0	.	.	.	.
2	Intercept	2.565	.734	12.218	1	.000			
	[SFS=1]	-1.224	.783	2.444	1	.118	.294	6.342E-02	1.364
	[SFS=2]	0 ^a	.	.	0	.	.	.	.

a. This parameter is set to zero because it is redundant.

Case Processing Summary

		N
Y	1	90
	2	91
	3	19
EA	1	45
	2	123
	3	32
Valid		200
Missing		0
Total		200



Parameter Estimates

Y		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
1	Intercept	1.872	.760	6.073	1	.014			
	[EA=1]	.165	.977	.029	1	.866	1.179	.174	7.998
	[EA=2]	-.522	.817	.408	1	.523	.593	.120	2.941
	[EA=3]	0 ^a	.	.	0	.	.	.	.
2	Intercept	2.140	.748	8.196	1	.004			
	[EA=1]	-.294	.972	.092	1	.762	.745	.111	5.007
	[EA=2]	-.772	.805	.919	1	.338	.462	9.536E-02	2.240
	[EA=3]	0 ^a	.	.	0	.	.	.	.

a. This parameter is set to zero because it is redundant.

Case Processing Summary

		N
Y	1	90
	2	91
	3	19
SI	1	54
	2	115
	3	31
Valid		200
Missing		0
Total		200



Parameter Estimates

Y		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
1	Intercept	1.705	.769	4.918	1	.027			
	[SI=1]	-.318	.894	.127	1	.722	.727	.126	4.194
	[SI=2]	-9.53E-02	.837	.013	1	.909	.909	.176	4.686
	[SI=3]	0 ^a	.	.	0	.	.	.	.
2	Intercept	2.197	.745	8.690	1	.003			
	[SI=1]	-.811	.874	.861	1	.353	.444	8.014E-02	2.465
	[SI=2]	-.703	.817	.742	1	.389	.495	9.987E-02	2.453
	[SI=3]	0 ^a	.	.	0	.	.	.	.

a. This parameter is set to zero because it is redundant.

Case Processing Summary

		N
Y	1	90
	2	91
	3	19
RI	1	42
	2	158
Valid		200
Missing		0
Total		200

Parameter Estimates

Y		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
1	Intercept	1.726	.301	32.855	1	.000			
	[RI=1]	-.684	.562	1.480	1	.224	.505	.168	1.519
	[RI=2]	0 ^a	.	.	0	.	.	.	.
2	Intercept	1.712	.301	32.264	1	.000			
	[RI=1]	-.559	.557	1.008	1	.315	.572	.192	1.703
	[RI=2]	0 ^a	.	.	0	.	.	.	.

a. This parameter is set to zero because it is redundant.

Case Processing Summary

		N
Y	1	90
	2	91
	3	19
MI	1	119
	2	81
Valid		200
Missing		0
Total		200



Parameter Estimates

Y	B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
							Lower Bound	Upper Bound
1	Intercept	1.440	.371	15.096	1	.000		
	[MI=1]	.208	.507	.169	1	.681	1.232	.456 3.324
	[MI=2]	0 ^a	.	.	0	.	.	.
2	Intercept	1.329	.375	12.572	1	.000		
	[MI=1]	.411	.508	.656	1	.418	1.509	.557 4.084
	[MI=2]	0 ^a	.	.	0	.	.	.

a. This parameter is set to zero because it is redundant.

Case Processing Summary

		N
Y	1	90
	2	91
	3	19
RA	1	126
	2	74
Valid		200
Missing		0
Total		200

Parameter Estimates

Y	B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
							Lower Bound	Upper Bound
1	Intercept	1.322	.398	11.034	1	.001		
	[RA=1]	.375	.516	.528	1	.467	1.455	.529 3.996
	[RA=2]	0 ^a	.	.	0	.	.	.
2	Intercept	1.504	.391	14.807	1	.000		
	[RA=1]	.105	.512	.042	1	.837	1.111	.408 3.029
	[RA=2]	0 ^a	.	.	0	.	.	.

a. This parameter is set to zero because it is redundant.

Case Processing Summary

		N
Y	1	90
	2	91
	3	19
MA	1	168
	2	32
Valid		200
Missing		0
Total		200



Parameter Estimates

Y		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
1	Intercept	1.609	.632	6.476	1	.011			
	[MA=1]	-6.45E-02	.690	.009	1	.925	.938	.243	3.624
	[MA=2]	0 ^a	.	.	0	.	.	.	.
2	Intercept	1.540	.636	5.863	1	.015			
	[MA=1]	3.077E-02	.693	.002	1	.965	1.031	.265	4.011
	[MA=2]	0 ^a	.	.	0	.	.	.	.

a. This parameter is set to zero because it is redundant.

Case Processing Summary

		N
Y	1	90
	2	91
	3	19
FE	1	168
	2	32
Valid		200
Missing		0
Total		200



Parameter Estimates

Y		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
1	Intercept	1.099	.577	3.621	1	.057			
	[FE=1]	.550	.643	.733	1	.392	1.733	.492	6.106
	[FE=2]	0 ^a	.	.	0	.	.	.	.
2	Intercept	1.386	.559	6.150	1	.013			
	[FE=1]	.223	.626	.127	1	.722	1.250	.366	4.268
	[FE=2]	0 ^a	.	.	0	.	.	.	.

a. This parameter is set to zero because it is redundant.

Case Processing Summary

		N
Y	1	90
	2	91
	3	19
RE	1	172
	2	28
Valid		200
Missing		0
Total		200



Parameter Estimates

Y		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
1	Intercept	1.872	.760	6.073	1	.014	.697	.144	3.378
	[RE=1]	-.361	.805	.201	1	.654			
	[RE=2]	0 ^a	.	.	0	.			
2	Intercept	1.872	.760	6.073	1	.014	.706	.146	3.422
	[RE=1]	-.348	.805	.187	1	.665			
	[RE=2]	0 ^a	.	.	0	.			

a. This parameter is set to zero because it is redundant.

Case Processing Summary

		N
Y	1	90
	2	91
	3	19
TE	1	187
	2	13
Valid		200
Missing		0
Total		200

Parameter Estimates

Y		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
1	Intercept	1.946	1.069	3.313	1	.069	.659	7.624E-02	5.691
	[TE=1]	-.417	1.100	.144	1	.704			
	[TE=2]	0 ^a	.	.	0	.			
2	Intercept	1.609	1.095	2.159	1	.142	.956	.105	8.679
	[TE=1]	-4.55E-02	1.126	.002	1	.968			
	[TE=2]	0 ^a	.	.	0	.			

a. This parameter is set to zero because it is redundant.

Parameter Estimates

Y		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
1	Intercept	2.398	1.044	5.271	1	.022	.399	4.837E-02	3.291
	[PE=1]	-.919	1.077	.728	1	.393			
	[PE=2]	0 ^a	.	.	0	.			
2	Intercept	2.398	1.044	5.271	1	.022	.404	4.898E-02	3.333
	[PE=1]	-.906	1.077	.709	1	.400			
	[PE=2]	0 ^a	.	.	0	.			

a. This parameter is set to zero because it is redundant.

