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The Expenditure Patterns and Consumer Rationality

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ABSTRACT

Emerging issue in consumer behavior theory is consumer rationality where it has certain relationship with income and expenditure of consumers. Consumer rationality is binary dependent variable which can be expressed in three dimensions- price, quality and brand. The major objective of this study is to examine the relationship of consumer rationality with income and expenditure of the consumers. It aims to explain the impact of income and expenditure on consumer rationality. Primary data are obtained from the survey questionnaire from Hetauda sub- metropolitan city and entered into statistical software e.g. SPSS and E-Views for inferential analysis then binary logistic regression model is used for the relationship of consumer rationality with income and expenditure of the consumers. Binary logistic results show expenditure and number of family members are significant at 5 percent and 10 percent level of significance for consumer rationality on price. Income and expenditure are significant at 5 percent level and number of family members is significant at 10 percent level of significance for quality dimension. Expenditure of the consumers is significant at 5 percent level and occupation is significant at 10 percent level for brand. So consumer rationality is influenced by income and expenditure of the consumer where higher the level of income and expenditure show the higher awareness towards rationality.

1. INTRODUCTION

Consumer rationality is an emerging topic in consumer behavior theory and researches are conducted on this topic on its relationship with multiple factors. It is binary variable which shows dual pattern and have positive and negative responses - rational in some aspect and biased from it in the other. A rationality theory is a theory that evaluates the reasoning as rational, irrational, or rational/irrational to some degree (Sosis, & Bishop, 2014). In classical theory rationality is the major assumption of economics and most of the economic theories rest on this assumption.

On the other hand, consumers are seemed biased from rationality and their behaviors are influenced by many factors. In recent analysis, consumer's status quo can limit economic rationality, bias consumer decisions and make serious

errors in the valuation of private and public goods (Hartman et al., 1991). Again, technology analysts and behavioral researchers, argue those consumers' decisions in real-world deviate from the ideals of rationality, providing a possible justification of government intervention (Howarth, 1994).

Consumer rationality is studied with different factors by the researchers and conflicting views are obtained in terms of rationality but this study attempts to show the relation between the consumer rationality with expenditure, income, occupation and number of family members in Nepalese context. The major objective of this study is to examine the effect of expenditure patterns on consumer rationality. It also aims to find the relationship between expenditure patterns and consumer rationality on price, quality and brand in Nepalese context. For this purpose, the study is focused on the following research questions -what is the effect of expenditure on consumer rationality on price, quality and brand? Again, the next question is -what is the relationship between expenditure and consumer rationality on price, quality and brand? For inferential analysis following hypotheses are formed to test the relationship between expenditure patterns and consumer rationality in this study.

Hypothesis (1): There is significant relationship between expenditure patterns and consumer rationality on price.

Hypothesis (2): There is significant relationship between expenditure patterns and consumer rationality on quality.

Hypothesis (3): There is significance relationship between expenditure patterns and consumer rationality on brand.

The study is organized in the following ways: Literature Review is included in section 2, Data and Methodology in section 3, Result is in section 4, and Conclusion and Discussion are presented in section 5.

2. REVIEW OF THE LITERATURE

Literatures related with consumer rationality and expenditure patterns are reviewed in this sections that show the dichotomous behavior of the consumers and they are presented as follows.

Fareed and Riggs (1982) assert that, for consumer units headed by older (65+) and younger (<65), the average and marginal propensities to spend relative to after-tax income were virtually the same when they are estimated at the mean values of respective characteristics, such as family size and after-tax income.

Brown (1988) argues that rational conclusions are drawn through the interplay of critical analysis and judgements by the community of persons who have the expertise. This leads to discussions of the relations between truth, objectivity and rationality and to an examination of the rational debate.

G. Gigerenzer et al (1989) find over the last centuries, models of rationality have changed when they have conflict with actual behavior, yet, they provided prescriptions of behavior. The double role — to describe and to prescribe — does not measure easily onto a sharp divide between the descriptive and normative models, which plays the actual exchange between the psychological and the rational.

In the study Hartman et al. (1991) state the existence of the effect of status quo in consumer valuation of a certain unpriced products. Such valuations are important in the planning of electric utility resource and rate making. There are substantial status quo effects, that must be addressed in welfare of electric service reliability.

Nozick (1994) explores rationality of belief and rationality of decision, he shows how principles actually function in our thinking and in our efforts to live productively and peacefully with each other.

Explaining about rationality, Chase et al. (1998) assert that the heuristics are ecologically rational in which they exploit aspects of both the social and physical environment to make adaptive inferences. They review the work exploring the multifaceted conception of rationality.

Explaining consumer behavior and expenditure, Chang and Fawson (1994) state that the study reveals certain systematic patterns in consumer behavior in Taiwan. The method of estimation and precision revealed by higher R2 and significant t statistics make the system a useful tool for characterizing broad tendencies of individual expenditure behavior.

In the research Shafir and LeBoeuf (2002) reviewed selected findings in research on judgment, reasoning, and choice and considers the systematic ways where people violate basic requirements of the normative analyses. Recent objections to the empirical findings are considered; these objections question relevance of the findings to assumptions about rationality.

Dhar and Novemsky (2008) find that individuals do not know *exactly* what they want to imply always that consumers do not have *any* preferences substantively. This clearly overstepped the evidence bounds, which showed agnostic toward the presence of reasonably stable substantive preferences.

In the study Arcidiacono (2011) asserts the hypothesis of a critical consumer appears blurred by a decision-making process of revealing of traditional attitudes with a strong sensitivity to price, and the emergence of new cohorts of stimulation of customers, as shown by the focus on the "quality" attribute. It seems an approach of multidisciplinary is beneficial in terms of heuristics.

Koenig-Lewis et al. (2014) explore that this paper contributes to evidence which emotions rather than rational evaluations are key drivers to change pro-environmental purchase behavior and that adds new knowledge on the role of negative emotions by pro-environmental packaging.

Frank et al. (2014) state that the model predicts the observed ways where individual savings rates respond to changes in own and others' permanent income, and numerous other stylized patterns that are difficult to reconcile with the prevailing models.

3. METHODOLOGY

3.1 DATA AND SAMPLING

Data are obtained from field survey of 385 respondents from Hetauda Sub-Metropolitan City where stratified random sampling is taken for the data collection from 19 wards. Then pilot study is conducted taking 10 percent of the respondents in the study. Cronbach alpha test is applied to test the reliability of the questionnaire that shows the study is reliable and consistence. .

3.2 MODEL SPECIFICATION AND RESEARCH DESIGN

After collection of data from survey, the data are entered into SPSS and E-Views software then inferential analysis are performed. Binary logistic regression model is applied to test the relationship between the variables where six models are specified for calculation. Income and expenditure are kept in different models due to high correlation between them. Model for inferential analysis is specified in the following ways:

$$L_i = \ln\left(\frac{P_i}{1-P_i}\right) = Z_i = b_0 + \sum_{i=1}^{4} b_i X_i$$

Where, L is the odds of log ratio which is linear in all parameters in logistic regression model. L ranges from $-\infty$ to$+\infty$ and value of Z also ranges from $-\infty$ to$+\infty$. Pi is the probability which ranges from 0 to 1 expresses 1 for being rational and 0 for otherwise. X_1 = income, X_2 = expenditure, X_3 = occupation and X_4 = number of family members in this model. Income and expenditure are changed into natural log forms. Separate models are developed for inferential analysis due to high correlation between income and expenditure. The econometric models can be specified as

$RAT = b_0 + b_1 lnINC + b_2OCC + b_3NOF + \varepsilon$

$RAT = b_0 + b_1 lnEXP + b_2OCC + b_3NOF + \varepsilon$

Where RAT is for rationality, lnINC is log of income, lnEXP denotes log of expenditure, OCC for occupation, NOF is for number of family members and ε indicates error term. Six models are developed for three dimensions of rationality i. e. price, quality and brand due to nigh correlation between income and expenditure.

4. RESULT

Consumer rationality is regressed on income, expenditure, occupation and number of family members where the dependent variable has three dimensions- price quality and brand. For inferential analysis SPSS and E-Views are used and results are presented in the following tables.

4.1 CRONBACH'S ALPHA

Before collection of survey data, pilot study of 40 respondents are conducted for sample survey. Cronbach's alpha test is performed to test the reliability and consistency of the questionnaire. Test shows the test is significant that the value of Cronbach's alpha is 0.829 of four questions on consumer rationality on price. The value is 0.812 of 2 questions related with consumer rationality on quality and the value of Cronbach's alpha is 0.804 for four questions related with rationality on brand dimension. All the values are more than 0.6 indicate consistency and reliability of the questionnaire.

Table 1: *Cronbach's Alpha Tests*

Cronbach's Alpha	No. of Items	Rationality
0.829	4	Rationality on Price
0.812	2	Rationality on Quality
0.804	4	Rationality on Brand

4.2 CORRELATION

Correlation test is conducted to test the linear relationship between the variables in the model. Correlation between number of family members with income and expenditure are insignificant at the coefficients 0.047 and 0.055. The correlation coefficient between income and expenditure is 0.794 which is significant at one percent level. High correlation is found between income and expenditure which indicates the problem of multicollinearity in the model. So different models are developed for analysis and presented in the tables.

Table 2: *Correlation*

CORRELATIONS

		Number of family members	Monthly Income	Monthly Expenditure
Number of Family Members	Pearson Correlation	1	0.047	0.055
	Sig (2 tailed)		0.354	0.285
	N	385	385	385
Monthly Income	Pearson Correlation	0.047	1	0.794
	Sig (2 tailed)	0.354		0.000
	N	385	385	385
Monthly Expenditure	Pearson Correlation	0.055	0.794	1
	Sig (2 tailed)	0.285	0.000	
	N	385	385	385

4.3 BINARY LOGISTIC REGRESSION

4.3.1 CONSUMER RATIONALITY ON PRICE

Price is the first dimension of consumer rationality that is regressed on income, expenditure, occupation and number of family members. Binary logistic regression is applied to test the relationship between the variables. Due to high correlation between income and expenditure, two different models are developed and results are presented.

Table 3: *Binary Logistic Regression on Price*

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	3.566787	5.769166	0.618250	0.5364
lnINC	0.234079	1.306240	0.179201	0.8578
OCC	-0.056494	0.225723	-0.250281	0.8024
NOF	-0.263192	0.091772	-2.867901	0.0041

McFadden R-squared: 0.051988 LR statistics: 7.869985 Prob(LR statistic): 0.048777

Table 3 shows the result of binary logistic model of consumer rationality on price with income (lnINC), occupation (OCC) and number of family members (NOF). Number of family is significant at 5 percent level which shows the coefficient is -0.263192 that indicate one unit change in NOF can cause 0.26 units change in rationality on price in the negative direction and other variables seem insignificant in this model. Probability of LR statistics is also significant at 5 percent level signifies the model is best fitted.

Table 4: *Binary Logistic Regression on Price*

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-4.206849	4. 647843	-0.905119	0.3654
lnEXP	2.140259	1.129516	1.894846	0.0581
OCC	-0.016319	0.218295	-0.074758	0.9404
NOF	-0.292598	0.091987	-3.180858	0.0015

McFadden R-squared: 0.075351 LR statistics: 11.40679 Prob(LR statistic): 0.009718

Table 4 shows the result of binary logit model of consumer rationality on price with expenditure (lnEXP), occupation (OCC) and number of family members (NOF). It indicates number of family members and expenditures are significant at 5 percent and 10 percent level of significance. The coefficient of lnEXP is 2.140259 indicates one percent change in expenditure of the consumer can change consumer rationality on price by 2.14 percent in the positive direction. The coefficient of NOF is -0.292598 which implies one-unit increase in number of family members can increase the consumer rationality on price by 0.29 percent. The probability of LR statistic is significant at 5 percent level.

4.3.2 CONSUMER RATIONALITY ON QUALITY

Quality is the second dimension of consumer rationality which is regressed with income, expenditure, occupation and number of family members. Binary logistic regression is run to find the relationship between the variables under study. Two models of rationality on this dimension are formed and results are presented in the following tables.

Table 5: *Binary Logistic Regression on Quality*

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-14.30716	2.886868	-4.955945	0.0000
lnINC	3.193539	0.649113	4.919848	0.0000
OCC	0.131127	0.108631	1.207087	0.2274
NOF	0.116919	0.076463	1.529085	0.1262

McFadden R-squared: 0.066556 LR statistics: 32.68127 Prob(LR statistic): 0.000000

In table 5, the results of binary regression on quality are presented where income is significant at one percent level of significance. The coefficient is 3.193539 shows one unit change in income causes 3.19 units change in rationality on quality. Other variables are not significant in this model. The probability of LR statistics is 0.00000 shows the model is significant.

Table 6: *Binary Logistic Regression on Quality*

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-11.77283	2.384223	-4.937807	0.0000
lnEXP	2.731599	0.553923	4.931367	0.0000
OCC	0.157446	0.108481	1.451362	0.1467
NOF	0.128307	0.077078	1.664635	0.0960

McFadden R-squared: 0.064503 LR statistics: 8.892388 Prob(LR statistic): 0.000001

In the table 6 consumer rationality on quality is regressed on expenditure, occupation and number of family members where expenditure and number of family members are significant at one percent and 10 percent level of significant. The coefficients of lnEXP is 2.731599 and NOF is 0.128307 in which one percent increase in expenditure can cause 2.73 percent increase in rationality on quality and one unit change in number of family members can change 0.13 unit in rationality on quality. Occupation seems insignificant in this dimension and probability of LR statistic is significant at 1 percent level shows the model is best fitted.

4.3.3 CONSUMER RATIONALITY ON BRAND

Brand is the third dimension of rationality which is regressed on income, expenditure, occupation and number of family members. Separate models are developed due to high correlation between income and expenditure. Binary logistic regression is applied to test the relationship between dependent and independent variables and results are presented in the table below.

Table 7: *Binary Logistic Regression on Brand*

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	0.331353	2.677482	0.123755	0.9015
lnINC	0.359089	0.602226	0.596269	0.5510
OCC	-0.205259	0.107549	-1.908527	0.0563
NOF	-0.066841	0.062306	-1.072787	0.2834

McFadden R-squared: 0.011072 LR statistics: 4.973642 Prob(LR statistic): 0.173737

Brand is the third dimension of rationality which is regressed on income, occupation and number of family members and the result is shown in Table 6. Occupation is significant at 10 percent level of significant at the coefficient 0.359089 that shows one unit change in occupation can change the rationality on brand by 0.36 units. Other variables are seen insignificant in this dimension of rationality and probability of LR statistics is not significant in this model.

Table 8: *Binary Logistic Regression on Brand*

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-2.778279	2.310702	-1.202353	0.2292
lnEXP	1.123244	0.545764	2.058114	0.0396
OCC	-0.186778	0.107507	-1.737361	0.0823
NOF	-0.074815	0.062543	-1.196206	0.2316

McFadden R-squared: 0.019796 LR statistics: 31.67320 Prob(LR statistic): 0. 030756

Table 8 shows the result of logistic regression of consumer rationality on brand dimension where brand of the commodity is regressed on expenditure,

occupation and number of family members. It shows expenditure is significant at 5 percent level and other variables seem insignificant to explain dependent variable. It gives the coefficient 1.123244 that indicates one percent increase in expenditure can increase the rationality on brand by 1.12 percent. Probability of LR statistic is significant at 5 percent.

4.4 VARIANCE INFLATION FACTORS

Variance Inflation Factor is the test of multicollinearity of independent variables in the models. The independent variables in this model are income (lnINC), expenditure (lnEXP), occupation (OCC) and number of family members (NOF). The results of VIF test are given in the following Tables.

Table 9: *Variance Inflation Factor*

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.063572	533.5577	NA
lnINC	0.003209	525.8698	1.008602
OCC	3.87E-05	5.783355	1.008731
NOF	0.000108	7.760538	1.001986

Result of VIF test of the independent variables lnINC, OCC and NOF are presented in the Table 9. VIF of all independent variables are below 5 signifies no multicollinearity in the model where more than 5 is problematic. The model is free from multicollinearity problem and the inferential analysis can be taken for the study.

Table 10: *Variance Inflation Factor*

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.047258	399.9220	NA
lnEXP	0.002586	383.6586	1.013188
OCC	3.83E-05	9.761728	1.006501
NOF	0.000107	7.811352	1.008547

Table 10 shows the result of VIF test of the variables lnEXP, OCC and NOF that indicates VIF of all the variables are below 5. It signifies no multicollinearity in the model because this model is free from this problem signifies no violation of OLS properties.

5. CONCLUSION AND DISCUSSION

The binary dependent variable consumer rationality is influenced by different factors where income and expenditure patterns are the prominent ones. The major objective of this study is to examine the effect of income and expenditure patterns on consumer rationality. It shows multiple dimensions such as price, quality and brand which are regressed on income, expenditure, occupation and number of family members. Primary data are obtained from field survey of the consumers from Hetauda Sub-Metropolitan City. Cronbach alpha test is performed to test the reliability and validity of the questionnaire. Binary logistic regression model is applied to find the relationship between dependent and independent variables then variance inflation factor (VIF) test is conducted to detect multicollinearity in the model.

Results show number of family members and expenditure are significant at 5 percent and 10 percent level for consumer rationality on price. Income and expenditure are significant at 5 percent level and number of family is significant at 10 percent level for rationality on quality dimension. Brand is the third dimension of consumer rationality which shows expenditure is significant at 5 percent level and occupation is significant at 10 percent level of significance. All the variables used in this study seem significant that show income and expenditure have positive effect on consumer rationality. The consumer with higher income and

expenditure patterns show higher degree of rationality in terms of price, quality and brand.

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APPENDICES

Correlations

		Number of family members	Monthly income	Monthly Expenditure
Number of family members	Pearson Correlation	1	.047	.055
	Sig. (2-tailed)		.354	.285
	N	385	385	385
Monthly income	Pearson Correlation	.047	1	.794**
	Sig. (2-tailed)	.354		.000
	N	385	385	385
Monthly Expenditure	Pearson Correlation	.055	.794**	1
	Sig. (2-tailed)	.285	.000	
	N	385	385	385

**. Correlation is significant at the 0.01 level (2-tailed).

Dependent Variable: PRL
Method: ML - Binary Logit (Newton-Raphson / Marquardt steps)
Date: 07/22/23 Time: 09:07
Sample: 1 385
Included observations: 385
Convergence achieved after 5 iterations
Coefficient covariance computed using observed Hessian

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	3.566787	5.769166	0.618250	0.5364
LNINC	0.234079	1.306240	0.179201	0.8578
OCC	-0.056494	0.225723	-0.250281	0.8024
NOF	-0.263192	0.091772	-2.867901	0.0041

McFadden R-squared	0.051988	Mean dependent var	0.950649
S.D. dependent var	0.216881	S.E. of regression	0.212566
Akaike info criterion	0.393535	Sum squared resid	17.21530
Schwarz criterion	0.434608	Log likelihood	-71.75555
Hannan-Quinn criter.	0.409825	Deviance	143.5111
Restr. deviance	151.3811	Restr. log likelihood	-75.69054
LR statistic	7.869985	Avg. log likelihood	-0.186378
Prob(LR statistic)	0.048777		

Obs with Dep=0	19	Total obs	385
Obs with Dep=1	366		

Dependent Variable: PRL
Method: ML - Binary Logit (Newton-Raphson / Marquardt steps)
Date: 07/22/23 Time: 09:07
Sample: 1 385
Included observations: 385
Convergence achieved after 4 iterations
Coefficient covariance computed using observed Hessian

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-4.206849	4.647843	-0.905119	0.3654
LNEXP	2.140259	1.129516	1.894846	0.0581
OCC	-0.016319	0.218295	-0.074758	0.9404
NOF	-0.292598	0.091987	-3.180858	0.0015

McFadden R-squared	0.075351	Mean dependent var	0.950649
S.D. dependent var	0.216881	S.E. of regression	0.211064
Akaike info criterion	0.384349	Sum squared resid	16.97285
Schwarz criterion	0.425421	Log likelihood	-69.98715
Hannan-Quinn criter.	0.400638	Deviance	139.9743
Restr. deviance	151.3811	Restr. log likelihood	-75.69054
LR statistic	11.40679	Avg. log likelihood	-0.181785
Prob(LR statistic)	0.009718		

Obs with Dep=0	19	Total obs	385
Obs with Dep=1	366		

Dependent Variable: QLT
Method: ML - Binary Logit (Newton-Raphson / Marquardt steps)
Date: 07/22/23 Time: 09:06
Sample: 1 385
Included observations: 385
Convergence achieved after 3 iterations
Coefficient covariance computed using observed Hessian

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-14.30716	2.886868	-4.955945	0.0000
LNINC	3.193539	0.649113	4.919848	0.0000
OCC	0.131127	0.108631	1.207087	0.2274
NOF	0.116919	0.076463	1.529085	0.1262

McFadden R-squared	0.066556	Mean dependent var	0.664935
S.D. dependent var	0.472627	S.E. of regression	0.455523
Akaike info criterion	1.211308	Sum squared resid	79.05808
Schwarz criterion	1.252381	Log likelihood	-229.1768
Hannan-Quinn criter.	1.227598	Deviance	458.3536
Restr. deviance	491.0349	Restr. log likelihood	-245.5175
LR statistic	32.68127	Avg. log likelihood	-0.595264
Prob(LR statistic)	0.000000		

Obs with Dep=0	129	Total obs	385
Obs with Dep=1	256		

Dependent Variable: QLT
Method: ML - Binary Logit (Newton-Raphson / Marquardt steps)
Date: 07/22/23 Time: 09:11
Sample: 1 385
Included observations: 385
Convergence achieved after 3 iterations
Coefficient covariance computed using observed Hessian

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-11.77283	2.384223	-4.937807	0.0000
LNEXP	2.731599	0.553923	4.931367	0.0000
OCC	0.157446	0.108481	1.451362	0.1467
NOF	0.128307	0.077078	1.664635	0.0960

McFadden R-squared	0.064503	Mean dependent var	0.664935
S.D. dependent var	0.472627	S.E. of regression	0.456676
Akaike info criterion	1.213927	Sum squared resid	79.45863
Schwarz criterion	1.254999	Log likelihood	-229.6809
Hannan-Quinn criter.	1.230216	Deviance	459.3617
Restr. deviance	491.0349	Restr. log likelihood	-245.5175
LR statistic	31.67320	Avg. log likelihood	-0.596574
Prob(LR statistic)	0.000001		

Obs with Dep=0	129	Total obs	385
Obs with Dep=1	256		

Dependent Variable: BRN
Method: ML - Binary Logit (Newton-Raphson / Marquardt steps)
Date: 07/22/23 Time: 09:09
Sample: 1 385
Included observations: 385
Convergence achieved after 4 iterations
Coefficient covariance computed using observed Hessian

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	0.331353	2.677482	0.123755	0.9015
LNINC	0.359089	0.602226	0.596269	0.5510
OCC	-0.205259	0.107549	-1.908527	0.0563
NOF	-0.066841	0.062306	-1.072787	0.2834

McFadden R-squared	0.011072	Mean dependent var	0.729870
S.D. dependent var	0.444604	S.E. of regression	0.442750
Akaike info criterion	1.174637	Sum squared resid	74.68650
Schwarz criterion	1.215709	Log likelihood	-222.1175
Hannan-Quinn criter.	1.190926	Deviance	444.2351
Restr. deviance	449.2087	Restr. log likelihood	-224.6044
LR statistic	4.973642	Avg. log likelihood	-0.576929
Prob(LR statistic)	0.173737		

Obs with Dep=0	104	Total obs	385
Obs with Dep=1	281		

Dependent Variable: BRN
Method: ML - Binary Logit (Newton-Raphson / Marquardt steps)
Date: 07/22/23 Time: 09:09
Sample: 1 385
Included observations: 385
Convergence achieved after 4 iterations
Coefficient covariance computed using observed Hessian

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-2.778279	2.310702	-1.202353	0.2292
LNEXP	1.123244	0.545764	2.058114	0.0396
OCC	-0.186778	0.107507	-1.737361	0.0823
NOF	-0.074815	0.062543	-1.196206	0.2316

McFadden R-squared	0.019796	Mean dependent var	0.729870
S.D. dependent var	0.444604	S.E. of regression	0.440562
Akaike info criterion	1.164458	Sum squared resid	73.95023
Schwarz criterion	1.205531	Log likelihood	-220.1582
Hannan-Quinn criter.	1.180748	Deviance	440.3163
Restr. deviance	449.2087	Restr. log likelihood	-224.6044
LR statistic	8.892388	Avg. log likelihood	-0.571839
Prob(LR statistic)	0.030756		

Obs with Dep=0	104	Total obs	385
Obs with Dep=1	281		

Variance Inflation Factors
Date: 08/09/23 Time: 09:02
Sample: 1 385
Included observations: 385

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.063572	533.5577	NA
LNINC	0.003209	525.8698	1.008602
NOF	3.87E-05	9.783355	1.008731
OCC	0.000108	7.760538	1.001986

Variance Inflation Factors
Date: 08/09/23 Time: 09:04
Sample: 1 385
Included observations: 385

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.047258	399.9220	NA
LNEXP	0.002586	383.6586	1.013188
NOF	3.83E-05	9.761728	1.006501
OCC	0.000107	7.811352	1.008547

Cronbach's alpha of dependent variable rationality on price

Case Processing Summary

		N	%
Cases	Valid	40	100.0
	Excluded[a]	0	.0
	Total	40	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.829	4

Cronbach's alpha of dependent variable rationality on quali

Case Processing Summary

		N	%
Cases	Valid	40	100.0
	Excluded[a]	0	.0
	Total	40	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.812	2

Cronbach's alpha of dependent variable rationality on Brand

Case Processing Summary

		N	%
Cases	Valid	40	100.0
	Excluded[a]	0	.0
	Total	40	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.804	4

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