

Investigating into factors accounting for cognitive dissonance (Post purchase regrets)

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Abstract

This study seeks to look into the factors that account for consumers' post-purchase regrets (cognitive dissonance). From the review of relevant literature, Impulse Buying, Price of the Item Purchased, Level of Consumer Decision Process, Level of Expectation, Level of Consumer Involvement and Reversibility of Purchase Decision were identified as some of the factors that account for consumers' post-purchase regrets. As a result, these factors were discussed in the paper and used as the independent variables in the research, with Cognitive Dissonance (Post Purchase Regrets) being the dependent variable. Quantitative approaches were used for data collection. The finding in this research shows that only price is significantly related to post-purchase regret. As a result, marketers are advised to adopt the most cost effective method of production to be able to charge relatively lower prices without losing sight on the quality of the product.

Keywords: cognitive dissonance (post purchase regrets), impulse buying, price, consumer decision process, expectation, consumer involvement and purchase decision

1. Introduction

"One cannot live without desire; we cannot live without feelings and one cannot live without regret" (He, 2002). Post purchase regret exist in our lives and only a few people are spared from this feeling. Post purchase regret is an important emotion; since it can intervene in all spheres of our lives. Therefore, the purpose of this paper is to investigate into the factors accounting for post-purchase regrets.

Cognitive dissonance is the final stage in the decision process of consumers. After a customer assessing whether he is satisfied or dissatisfied with a purchase, the feeling he obtains about a purchase will significantly influence his decision as to whether he will make a re-purchase or consider alternatives. A customer will also be able to influence the purchase decision of others through word of mouth.

Post purchase regret, a form of buyer's remorse, is sometimes used in modern psychology to describe "the state of simultaneously holding two or more conflicting ideas, beliefs, values, or emotional reactions". For instance, customers may be exposed to advertising for a competitive product or brand which could put into question the product that they have purchased. A customer may also have a change of heart and decide that he no longer has a need for this particular product. Some marketers now choose to involve their customers with post purchase communications in order to influence their feelings about their purchase and future patronage (Armstrong & Kotler, 2010).

2. Problem Statement

This study has come up as a result of the need to address the problem of post purchase regrets. Identifying the source of a problem actually makes it easier to deal with it. Many studies have shown a significant relationships between regret and satisfaction levels (Heitmann *et al.*, 2007; Tsiros & Mittal, 2000) [44, 87] the more the feeling of regret for a purchase decision, the less satisfied one tends to be with that decision (Roese & Olson, 1995b).

Research has also shown that cognitive dissonance can cause dissatisfaction (Zeelenberg & Pieters, 1999, 2004) [100, 99] and brand switching (Zeelenberg & Pieters, 1999, 2004) [100, 99]. Indeed, the mere anticipation of regret is enough to change consumers' subsequent re-purchase behaviour (Cooke *et al.*, 2001; Greenleaf, 2004) [22].

Despite the fact that a number of researches have been done about this phenomenon of post purchase regret and its consequences, the main causes of post purchase regrets are less well known. Most empirical studies of post purchase regret to date have manipulated the regret response experimentally, using recall or scenarios about poor product or service performance (Inman & Zeelenberg, 2002) [21], in order to examine the actual effect of regret.

Post purchase regret is an unpleasant feeling that negatively affects our being, behaviour and we are motivated to avoid it. Several research works were interested in regret, but very few of them have attempted to find out the factors accounting for this painful emotional experience. Excellent opportunities therefore remain to further research and come out with the causes of cognitive dissonance.

3. Research Objectives

The *main* objective of this research is to identify the factors accounting for consumers post purchase regrets. However the research also hopes to achieve the following *specific* objectives:

- To determine the level of cognitive dissonance (post purchase regrets) among respondents
- To identify whether the level of cognitive dissonance differ with respect to Gender, Age, Level of Education and Race.
- To assess the impact of Impulse Buying, Price of the Item Purchased, Level of Consumer Decision Process, Level of Expectation, Level of Consumer Involvement and Reversibility of Purchase Decision on Consumers' Post purchase Regrets.

4. Research Questions

To be able to achieve the objectives stated above, the following research questions would be posed for the purpose of the research:

- What is the level of Cognitive Dissonance (Post purchase Regrets) among respondents?
- Does the level of Cognitive Dissonance differ with respect to Gender, Age, Level of Education, and Race?
- What are the level of impacts of Impulse Buying, Price of the Item Purchased, Level of Consumer Decision Process, Level of Expectation, Level of Consumer Involvement and Reversibility of Purchase Decision on Consumers' Post purchase Regrets?

5. Literature Review

According to Landman (1993), regret is defined as “. . . a more or less painful judgment and state of feeling sorry for misfortunes, limitations, losses, shortcomings, transgressions, or mistakes”. The first feeling of regret prompts an assessment of whether or not the consumer can correct a given situation and then facilitates the consumers' use of coping strategies. “Post purchase regret refers to a state of grief and psychological pain experienced by consumers when they compare the brands they bought with the alternatives they had decided not to buy and perceive that their purchasing decisions were wrong”. (Loomers & Sugden, 1982; Landman, 1987;

Boles & Messick, 1995; Shanker *et al.*, 2006; Simpson *et al.*, 2008) ^[10, 80].

Impulse Buying and Post purchase Regrets

Impulsive purchase is defined as an “unplanned or spontaneous purchase (Rook & Fisher, 1995) or a purchase with no intention to buy before entering the store” (Engel *et al.*, 1982) ^[33]. It involves “the feel of urgency to buy something which is normally associated with unconsciousness” (Muller & Reinecker 2005) ^[57].

Impulse buying by consumers is a common human behaviour. Studies have shown a lar portion of the sale level of reailer for instance is obtained through inpuse purchase. (Underhill, 1999; Nicholas, Li *et al.* 2001). As soon as impulse buyers enter retail stores, they place themselves in contexts to be appealing to all the senses (Pooler, 2003) ^[72]. Many research have shown a significant direct positive relationship between unplanned buying and Post purchase regret (Hoch & Loewentein, 1991 ^[46]; Wood, 1998 ^[95]; George & Yaoyuneyong, 2010) ^[38].

A number of reseaches assessed the effect of impulse purchase on consumers' post purchase regret. Wood (1998) ^[95] concluded that “in most cases, unplanned buying led to post purchase regret and anger”. Hoch & Loewentein (1991) ^[46] concluded that “impulsive buying, that comes from consumers' low involvement in purchasing decision, leads to a sense of post purchase regret as shown in the diagram below.

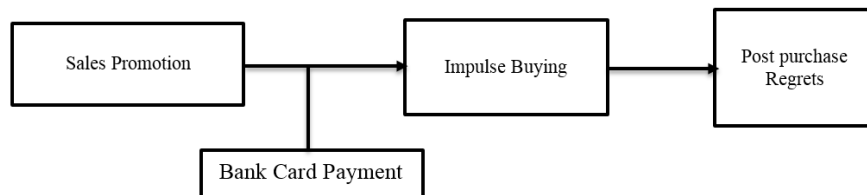


Fig 2.3: A model showing the impact of impulse buying on post purchase regret (O'Guinn & Faber, 1989). From the review, the following hypothesis could be developed.

H1: *Impulse buying has a significant positive relation with post purchase regret.*

Price and Post purchase Regrets

The price of a product refers to “the amount of money or compensation given by the consumer to obtain a particular product. research have exhibited that cognitive dissonance is likely to be higher if the price ogf the product is higher and vice versa. Thus, price has a positive relationship with cognitive dissonance (Blackwell, Miniard & Engel, 2006) ^[7].

The prospect theory (Kahneman & Tversky, 1979) stipulates that “there is ample evidence that our willingness to take risks is influenced by prior (financial) gains and losses” (Grinblatt & Keloharju 2000; Weber & Camerer 1998; Gneezy & Potters 1997, Haigh & List 2005). The theory suggests that the amount gained or lost in a transaction actually predicts the consumers' level of regret.

Just as consumers compare prices and evaluate the fairness of an exchange in the alternative evaluation stage of the consumer decision process, so do they revisit these issue during post purchase evaluation. Research show that how consumers view the fairness of an exchange in terms of the price paid for the product in a particular time affect the level of consumers' post purchase regret which affects overall

satisfaction and re-purchase intention. The below hypothesis could be developed from this discussions.

H2: *Price of the item purchased has a significant positive relation with post purchase regret.*

Consumer Decision Process and Post purchase Regrets

Consumer decision process refers to the steps a consumer goes through in buying a product. It involves stimulus, problem awareness, and information search, evaluation of alternatives, purchase, and post purchase behaviour. Demographics and life-style factors affect this decision process. (Blackwell, Miniard & Engel, 2006) ^[7]. Generally, it may be argued that a consumer is likely to experience more regret after a purchase when he/she did not take time to go through all the stages in the consumer decision process thus leading to the purchases of a brand that is inferior to the preferred stock out brand.

As far as marketing is concern, most of the consumers' external search literature explains how buyers search for information and evaluate alternatives before making purchase decisions (Beatty & Smith, 1987; Newman, 1977; Schmidt & Spreng, 1996). The intended view is that consumers go through the decision making process to be able to make a better buying decisions (Punj & Staelin, 1983) and experience increased satisfaction with the outcome (Bloch *et al.*, 1986).

Indeed, this seems only like common sense. However, research has shown that if consumers fail to make extensive search for information and evaluate alternatives, they are likely to experience post purchase regret. The hypothesis below could thus be obtained from the discussion above.

H₃: *Level of consumers’ decision has a significant negative relation with post purchase regret.*

Consumers’ Involvement and Post purchase Regrets

Consumers’ involvement refers to “the level of perceived personal importance and interest evoked by stimuli in a specific purchase situation”. (Blackwell, Miniard & Engel, 2006) [7]. It involves the level of concern for a purchase process prompted by the need to consider a particular purchase; the level of deliberation and acquisition of information.

In social psychology, "involvement" describes “the effort, investment, and commitment used in the purchase process”. The level of involvement is often associated with the level of post purchase regret. In most cases, buyer's remorse resulting from the purchase of a product is likely to be high, resulting in cognitive dissonance if the consumer does not make enough effort to look for information for example (involvement). Research have shown that the lower the involvement a consumer put in a purchase decision, the higher the possibility of the customer experiencing dissonance since there exist the possibility of buying a regrettable product (Babu & Manoj, 2009). From the discussions above, the below hypothesis could be developed.

H₄: *Level of consumers’ involvement has a significant negative relation with post purchase regret.*

Consumers’ Expectation and Post purchase Regrets

Customer expectations are defined as “the perceived values and satisfaction that customers seek from the purchase of goods and services”. Consumers’ expectation involves an “anticipation of future consequences based on prior experience, current circumstances, or other sources of information” (Oliver, 1996, p.68).

Comparing the outcome obtained before a purchase with that after purchase have been linked with the emotional response of disappointment and post purchase regret (Marcatto & Ferrante, 2008; Mellers *et al.*, 1997; Van *et al.*, 1999). When the obtained outcome from the purchase of a product exceeds the consumers’ expectation, the consumer will be

satisfied but when experience and product performance fall short of expectation, cognitive dissonance occurs (Oliver, 1996)

From this review, a hypothesis could be developed as show below;

H₅: *Level of consumers’ expectation has a significant positive relation with post purchase regret.*

Reversibility of a Purchase Decision and Post purchase Regret

Reversibility of a purchase decision refers to “the ability of consumers to return a product purchased or reverse the whole purchase decision process”. The level of regret experienced, regardless whether it is actual or anticipated, can be influenced by "the reversibility of the result." Being able to change the purchase decision can dramatically reduce the level of cognitive dissonance.

Indeed, previous research have shown that irreversible alternatives can generate intense post purchase regret than reversible ones (Engel *et al.* 1995; Landman, 1993; Tsiros & Mittal, 2000) [87]. For example, most consumers tend to regret their decisions in the absence of a guarantee in case of purchase with guarantee (Tsiros & Mittal, 2000) [87]. With reversible alternatives, consumers are more active, which makes them less likely to expend energy in cognitive counterfactual thoughts. The hypothesis below could thus, be developed;

H₆: *Reversibility of a purchase decision has a significant negative relation with post purchase regret.*

6. Methodology

This research uses the Causal Research Design which determines the cause and effect relationship between variables, manipulate one or more independent variables and determine the nature of the relationship between the causal variables and the effect to be predicted. Quantitative approaches with the appropriate experimental designs are used throughout the study to establish the relationship between the dependent variable and the independent variables.

The framework focuses on the causes of Cognitive Dissonance (Post purchase Regrets). The dependent variable is Cognitive Dissonance whiles Impulse Buying, Price of the Product, Consumer Decision Process, Level of Consumer Involvement, Consumers’ Expectations and Reversibility of a Purchase Decision are the independent variables.

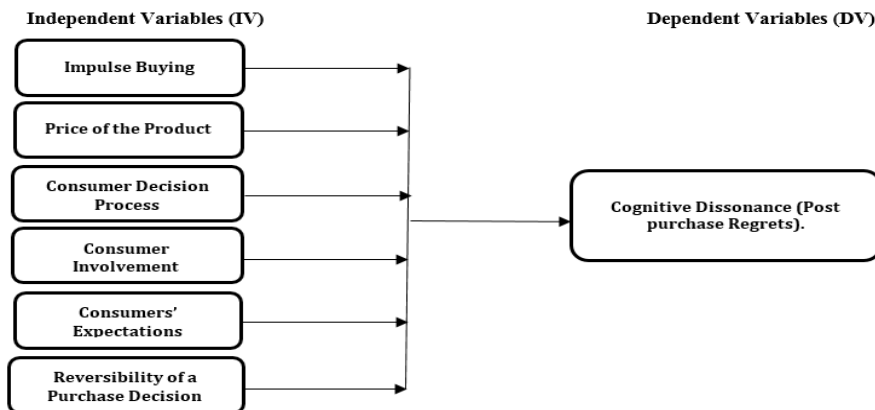


Fig 3.1. Research Framework.

To be able to achieve the research objectives, the study proposes the following hypotheses which were extracted from various discussions in the literature review for investigation:

- H₁:** Impulse buying has a significant positive relation with post purchase regret.
- H₂:** Price of the item purchased has a significant positive relation with post purchase regret.
- H₃:** Level of consumers' decision has a significant negative relation with post purchase regret.
- H₄:** Level of consumers' involvement has a significant negative relation with post purchase regret.
- H₅:** Level of consumers' expectation has a significant positive relation with post purchase regret.
- H₆:** Reversibility of a purchase decision has a significant negative relation with post purchase regret.

The main instrument used to collect data from respondents for

analysis is the survey questionnaire. For the purpose of this research, our population of interest is defined as all consumers. The unit of analysis for this study is consumer groups since the analysis is based on the average responses of various consumers. The convenience sampling technique is used to select the sample. A sample size of 120 is used in this research for the purpose of data collection and analysis. The data which is mainly used in this research is the primary data and it was analysed by the use of Statistical Package for Social Sciences (SPSS) 19.0, Excel, and Minitab software for windows.

Validity refers to how "well a test measures what it purports to measure". (Colin & Julie, 2006) [20]. Reliability on the other hand refers to "the degree to which an assessment tool produces stable and consistent results". (Colin & Julie, 2006) [20]. The Cronbach's Alpha is used in our case for this measure.

Table 1: Reliability Analysis

Scale	Cronbach's alpha (α)	Number of Items
Impulse Buying	0.707	4
Price Of A Product	0.801	4
Consumer Decision Process	0.706	3
Consumers' Involvement	0.704	3
Consumers' Expectation	0.791	4
Reversibility of purchase decision	0.798	4
Cognitive Dissonance	0.731	7
Overall	0.763	29

From table 1, the overall Cronbach's Alpha for the data is 0.763. If we contrast our reliability value with the standard value alpha of 0.7 advocated by Cronbach (1951) and Bagozzi & Yi's (1988) it implies that generally the scales used by the researcher are reliable for data analysis. Table 1 further shows the Cronbach's Alpha for the various variables used in the research.

7. Results and Discussions

7.1 Descriptive statistics for demographic information

Table 1: Frequency Distributions

Gender			
		Frequency	Percent
Valid	Male	75	62.5
	Female	45	37.5
Age			
Valid	Below 20	22	18.3
	21-30	90	75.0
	31-40	6	5.0
	41-50	2	1.7
Education			
Valid	Certificate	6	5.0
	Diploma	15	12.5
	Degree	77	64.2
	Masters	22	18.3
Race			
Valid	Chinese	36	30.0
	Malay	10	8.3
	Indian	10	8.3
	African	46	38.3
	Other	18	15.0

Out of the total of 120 respondents who answered the questionnaire, according to table 4.1., 75 (62.5%) of them are

males whiles 45 (37.5%) of them are females.

Table 4.1 further depicts that 22 (18.3%) of the total respondents are below the age of 20, 90 (75.0%) of them are between the ages of 21-30, 6 (5.0%) of them are between the ages of 31-40 and only 2 (1.7%) of them are between the ages of 41-50. It must be noted that none of the respondents is above the age of 50.

In terms of level of education, from table 4.1., it could be observed that 6 (5.0%) of the total sample of 120 respondents had only a certificate, 15 (12.5%) had diploma whiles 77 (64.2%) were degree holders. However, 22 (18.3%) of the respondents had post graduate (masters) degree. It is notable once again that none of the respondents had a PhD.

As far as race is concern, according to table 4.1., 36 (30.0%) of the respondents are Chinese, 10 (8.3%) are Malay whiles Indians also totalled 10 (8.3%). The number of Africans among the total respondents are 46 (39%) and 18 (15.0%) of the respondent are of other race apart from those ones mentioned.

7.2 Determining the level of cognitive dissonance (post purchase regrets)

Table 3: Descriptive Statistics

	Mean	Std. Deviation	Variance
	Statistic	Statistic	Statistic
Ave. Impulse	1.8646	.70629	.499
Ave. Price	3.3437	.59767	.357
Ave. Decision	1.9250	.76509	.585
Ave. Involvement	1.8778	.75585	.571
Ave. Expectation	2.9437	.72215	.521
Ave. Reversibility	3.2875	.57399	.329
Ave. Regret	3.6655	.55204	.305

Table 4.2 shows the basic statistics such as the mean, standard deviation and variance for both the dependent and independent variables in the research. From table 4.2, the average level of post purchase regret among the respondents is 72% (i.e. $\frac{3.6}{5} \times 100\%$).

This percentage according to the researcher’s judgment shows that the level of cognitive dissonance among respondents is

relatively high since it is more than 50%.

7.3 Identifying whether the level of cognitive dissonance differ with respect to Gender, Age, Level of Education and Race.

Research question two seeks to discover whether the levels of consumers’ post purchase regret differ with respect to gender.

Table 4: Independent Samples Test

		F	Sig.	T	Df	Sig. (2-tailed)
Ave Regret	Equal variances assumed	.791	.376	-.407	118	.685
	Equal variances not assumed			-.397	85.782	.692

From table 4.3, the *p-value* (sig 2-tailed) = 0.685 \neq *alpha* (α) = 0.05 at 95% confidence level. This implies that at 5% significant level, there is enough evidence to support the

assertion that the average level of consumers’ post purchase regret does not differ with respect to gender.

Table 5: ANOVA Table for age

Ave. Regret					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	.303	3	.101	.326	.807
Within Groups	35.962	116	.310		
Total	36.265	119			

Table 6: Homogeneous Subsets for Age Post Hoc Tests

Ave. Regret			
	Age	N	Subset for alpha = 0.05
Tukey HSD ^{a,b}			1
	41-50	2	3.4286
	31-40	6	3.5000
	Below 20	22	3.6623
	21-30	90	3.6825
	Sig.		.873
Waller-Duncan ^{a,b,c,d}	41-50	2	
	31-40	6	
	Below 20	22	
	21-30	90	

Means for groups in homogeneous subsets are displayed.

From table 4.4, the *p-value* (sig) = 0.807 \neq *alpha* (α) = 0.05 at 95% confidence level. This implies that at 5% significant level, there is enough evidence to support the assertion that the average level of consumers’ post purchase regret does not

differ with respect to age. Therefore, there is no significant difference in the level of consumers’ post purchase regret as far as age is concern.

Table 4.5 further illustrates the specifics age groups that differ on post purchase regret. The table shows no strong variation in the level of post purchase regret for all the age groups. This is because all the age groups are in the same subsets for alpha. They are actually not disjoint.

Table 7: ANOVA Table for educational levels

Ave. Regret					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	.525	3	.175	.568	.637
Within Groups	35.740	116	.308		
Total	36.265	119			

Table 8: Homogeneous Subsets Table for Educational Levels (Post Hoc Tests)

Ave. Regret			
	Education	N	Subset for alpha = 0.05
Tukey HSD ^{a,b}			1
	Diploma	15	3.4952
	Certificate	6	3.6667
	Degree	77	3.6827
	Masters	22	3.7208
	Sig.		.712
Waller-Duncan ^{a,b,c,d}	Diploma	15	
	Certificate	6	
	Degree	77	
	Masters	22	

Means for groups in homogeneous subsets are displayed.

From table 4.6, the *p-value* (sig) = 0.637 \neq *alpha* (α) = 0.05 at 95% confidence level. This implies that at 5% significant level, there is enough evidence to support the assertion that the average level of consumers’ post purchase regret does not

differ with respect to the level of education of the consumer. Thus, there is no significant difference in the level of consumers’ post purchase regret as far as education is concern.

Table 4.7 again shows the specifics levels of education that differ on post purchase regret. The table shows no strong variation in the level of post purchase regret for all the levels of education. This is because all the educational levels are in the same subsets for alpha.

Table 9: ANOVA Table for Race

Ave. Regret					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	.817	4	.204	.663	.619
Within Groups	35.448	115	.308		
Total	36.265	119			

Table 10: Homogeneous Subsets Table for Race Post Hoc Tests

Ave. Regret			
	Race	N	Subset for alpha = 0.05
			1
Tukey HSD ^{a,b}	Chinese	36	3.5556
	Malay	10	3.6000
	Indian	10	3.6857
	African	46	3.7205
	Other	18	3.7698
	Sig.		.804
Waller-Duncan ^{a, b, c, d}	Chinese	36	
	Malay	10	
	Indian	10	
	African	46	
	Other	18	

Means for groups in homogeneous subsets are displayed.

From table 4.8, the *p-value* (sig) = 0.619 \neq *alpha* (α) = 0.05 at 95% confidence level. Thus, at 5% significant level, there is enough evidence to support the claim that the average level of consumers' post purchase regret does not differ with respect to the race of the consumer. Therefore, there is no significant difference in the level of consumers' post purchase regret as far as the race of the consumer is concern.

Table 10 further illustrates the specifics race that differs on post purchase regret. The table shows no strong variation in the level of post purchase regret for all the race. This conclusion is drawn because all the race are in the same subsets for alpha. They are not disjoint.

7.4 Assessing the impact of Impulse Buying, Price of the Item Purchased, Level of Consumer Decision Process, Level of Expectation, Level of Consumer Involvement and Reversibility of Purchase Decision on Consumers' Post purchase Regrets

Table 11: Multiple Regression Results

	Beta	T	Sig
Ave. Impulse	.096	.261	.794
Ave. Price	.634	8.331	.000*
Ave. Decision	-.083	-.372	.710
Ave. Involvement	-.136	-.576	.565
Ave. Expectation	.113	1.504	.135
Ave. Reversibility	-.030	-.400	.690
R Square		.399	
F		12.512	
Sig.		.000 ^a	
		* <i>p</i> <0.001	
a. Independent variables: Ave. Reversibility, Ave. Involvement, Ave. Expectation, Ave. Price, Ave. Decision, Ave. Impulse.			
b. Dependent Variable: Ave. Regret.			

The use of table 11 is required to identify the significance of each of the individual independent variables. This will further help to answer our main research hypotheses;

- H1:** Impulse buying has a significant positive relation with post purchase regret.
- H2:** Price of the item purchased has a significant positive relation with post purchase regret.
- H3:** Level of consumers' decision has a significant negative relation with post purchase regret.
- H4:** Level of consumers' involvement has a significant negative relation with post purchase regret.
- H5:** Level of consumers' expectation has a significant positive relation with post purchase regret.
- H6:** Reversibility of a purchase decision has a significant negative relation with post purchase regret.

The beta values in table 11 show which of our independent variables is significantly impacting on the dependent variable at 5% significance level.

Impulse purchase has a beta value of 0.096 with a *p-value* of 0.749 $>$ 0.05 at 95% confidence level. This implies that impulse buying does not significantly impact on post purchase regret. Even though, the beta value of 0.096 supports the claims that impulse purchase is positively related to post purchase regret, the relationship is not significant, which makes the first hypothesis in this research not supported. As a result, the finding in this research show that buying a product impulsely does not necessarily predict the level of consumers' post purchase regret. This finding contradicts the earlier finding of Hoch & Loewentein, (1991) [46]; Wood, (1998) [95]; and George & Yaoyuneyong, (2010) [38] who demonstrated a significant direct positive relationship between unplanned buying and Post purchase regret. The disparities in the findings may be as a result of the different respondent used in these different researches. Since this research used students with low income and as result do not buy high involvement (expensive) products, it is possible for them not to experience any post purchase regret even if they buy impulsely thus leading to this finding. The finding would possibly have been different if employees who have enough income and can afford high involvement products were used as respondents. Differences in perception, lifestyle, culture and other demographic and psychological attributes among respondents used in these different researches might also account for such disparities in the findings.

Price of a product also, has a beta value of 0.634 with a *p-value* of 0.000 $<$ 0.05 at 95% confidence level. This shows that the price of a product significantly impact on post purchase regret. The beta value of 0.634 for price of the product purchased supports the second hypothesis of this research which claim that the price of a product purchased has a significant positive relation with consumers' post purchase regret. An increase in the price of a product would lead to an increase in consumers' post purchase regret and vice versa. As a result, a consumer is likely to experience a higher level of post purchase regret if he/she paid higher for a product and vice versa. This finding supports the earlier finding of Blackwell *et al.* (2006) [7] who found a significant positive relation between the price of a product and cognitive dissonance.

The level of consumers' decision process on the other hand, has a beta value of -0.083 with a *p-value* of 0.710 $>$ 0.05 at 5% significant level. This implies that the level of consumers'

decision process does not significantly impact on post purchase regret. Even though, the beta value of -0.083 supports the claims that the level of consumers' decision process is negatively related to post purchase regret, the relation is not significant thus making the third hypothesis in this research not supported. Thus, according to the findings in this research, the level of decision made by a consumer before making a purchase does not significantly determine his level of post purchase regret. This finding contradicts the earlier findings of Bloch *et al.*, (1986) who established a significant negative relationship between the level of consumers' decision process and post purchase regret. This contradiction can still be attributed to the different respondents used in these different researches. This research used responses from students who have low income and as result normally buy convenient products. This implies that these students do not normally go through a lengthy pre purchase decision process before buying their products since they are low involvement products. As a result, the level of consumers' decision making before purchase does not significantly determine their level of post purchase regret. The differences in age, level of education and other psychographic factors might also account for such contradictions.

The level of consumers' involvement in the pre purchase decision process also has a beta value of -0.136 with a *p-value* of $0.565 > 0.05$ at 95% confidence level. This implies that the level of consumers' involvement in the pre-purchase decision process does not significantly impact on post purchase regret. Although, the beta value of -0.136 support the claims that the level of consumers' involvement in the pre purchase decision process is negatively related to post purchase regret, the relation is not significant, thus making the fourth hypothesis of this research not supported. This finding further implies that the level of consumers' involvement in the pre purchase decision process does not significantly predict their level of post purchase regret. This finding contradicts the earlier conclusion of Babu & Manoj, (2009) who discovered a significant negative relation between the level of consumers' involvement and post purchase regret. Since respondents used in this research mostly buy low involving products because they are students and not high income earning workers, it is possible for them not to experience any post purchase regret even if they do not involve themselves in a lengthy pre purchase decision making before buying their product; thus resulting in this finding.

Consumers' expectation has a beta value of 0.113 with a *p-value* of $0.135 > 0.05$ at 95% confidence level. This implies that Consumers' expectation does not significantly impact on post purchase regret. Even though, the beta value of 0.0113 supports the claims that Consumers' expectation is positively related to cognitive dissonance, this relation is not significant, thus making the fifth hypothesis of this research not supported. This finding further implies that the level of consumers' expectation for a product does not significantly determine his level of post purchase regret. This finding again contradicts the earlier finding of Zeelenberg & Pieters, (2004)^[99] who discovered a significant positive relation between consumers' expectation for a product and post purchase regret. When consumers do not buy products that are relatively expensive, it is likely that they might not have high expectations for the product purchased. As a result, the level

of post purchase regret by such consumers might not necessary be predicted by their level of expectation for the product. Since the respondents used in this research as described in the previous discussions fits into this description, it is not surprising that this research is yielding this result.

Reversibility of a purchase decision has a beta value of -0.30 with a *p-value* of $0.690 > 0.05$ at 5% significant level. This means that reversibility of a purchase decision does not significantly impacts on post purchase regret. Although, the beta value of -0.030 supports the claims that reversibility of a purchase decision is negatively related to post purchase regret, the relation is not significant; thus making the last hypothesis in this research not supported. This finding implies that the reversibility of a purchase decision does not significantly determine a consumers' level of post purchase regret. This finding also contradicts earlier conclusions of Engel *et al.* (1995); Landman, (1993) and Tsiros & Mittal, (2000)^[87] who discovered a significant negative relation between reversibility of a purchase decision and post purchase regret. The disparity in the findings may be as a result of the differences in the products purchased by the respondents used in these different researches. Since this research used solely students as respondents who normally do not buy high involving products of which the irreversibility of such products do not matter that much to them, it is possible for them not to experience any post purchase regret if even the products do not meet their expectation and cannot be returned, thus giving rise to this finding. Other factors such as the age difference which matches with the level of emotional intelligence of the respondents used in these different researches can also give rise to this disparity.

In summary, the analysis showed that at 5% significant level, only price is significantly related to post purchase regret. Thus, the price a consumer pays for a product significantly determines his level of post purchase regret. The research further showed that impulse buying, level of consumer decision process, level of expectation, level of consumer involvement and reversibility of purchase decision are not significant predictors of consumers' post purchase regrets.

This findings actually supports the suggestion made by Blackwell, *et al.*, (2006)^[7] that consumers post purchase regret is likely to be higher if they paid a higher price for a product than when the price of the product is relatively low. However, the findings contradicts earlier findings of George & Yaoyuneyong (2010)^[38], Keaveney *et al.* (2006), Babu & Manoj (2009), Huang & Tseng, (2007) and Tsiros & Mittal, (2000)^[87] who discovered impulse buying, level of consumers' decision process, level of consumers' involvement, level of consumers' expectation and the reversibility of a purchase decision respectively to be a significant predictor of consumers' post purchase regret. This disparity in the findings may be due to the differences in the income level of respondents, perceptual differences, age differences, cultural or other demographic, psychological or psychographic differences among the respondents used in these different researches.

The beta values in table 11 further show that the dependent variable (post purchase regret), would increase by 0.096 , 0.634 and 0.113 for every one unit increase in average level of impulse buying, price of the product and expectation of the consumer respectively. The table however shows that the

dependent variable (post purchase regret), would decrease by 0.083, 0.136 and 0.030 for every one unit increase in average consumer decision process, level of involvement and reversibility of a purchase decision respectively.

7.5 Model Fit

Coefficient of Determination and Correlation Coefficient

Coefficient of determination (r^2) measures the percentage of the dependent variable that can be explained by the independent variables (Jim Frost, 2013).

From table 11, the Coefficient of Determination (r^2) = 0.399 \approx 0.400. This implies that about 40.0% of the variation in the dependent variable, (post purchase regret) can be explained by the independent variables (impulse buying, price of the item purchased, level of consumer decision process, level of expectation, level of consumer involvement and reversibility of purchase decision). The figure further implies that the other 60% of the variation in the dependent variable, (post purchase regret) can be explained by other variables or factors not stated in this study.

It must be noted that since r^2 is approximately 0.4, the regression model for this study can be seen to have predictive power. This implies that at least one of the independent variables can actually predict our dependent variable (post purchase regret). This conclusion is further justified by table 11 which shows an F value of 12.512 at $p = 0.000 < \alpha = 0.05$, showing the predictive power of the regression model.

Correlation coefficient (r) measure how strong our dependent and independent variables are linearly related (Jim Frost, 2013). From the model summary table in Appendix G, our correlation coefficient (r) = 0.632. This figure shows that the dependent variable for this study and our independent variables together are highly positively related.

7.6 Multi-Collinearity Analysis

Under the multi-collinearity analysis, we want to check the level of correlation among our independent variables. This is because if our independent variables are highly correlated, ($|r| > 0.7$) it becomes difficult to determine the separate effects of any particular independent variable on our dependent variable. For a data to have a serious multi-collinearity problem, it must satisfy the following conditions;

- $VIF > 10$
- $Tolerance < 0.1$
- $Condition\ index > 30$

From The multi-collinearity table in Appendix G, it could be observed that some of the figures do satisfy the multi-collinearity conditions while others do not. This shows that there may be multi-collinearity problems in the independent variables. Thus it might be a bit difficult to determine the separate effects of any particular independent variable on the dependent variable in this study.

8. Conclusions and Recommendations

The main motive of this research was to investigate into the factors accounting for post purchase regret as well as the level of post purchase regret among consumers.

Results from the analysis in this study showed that the level of post purchase regret among respondents used in this research

is 72%. This percentage according to the researcher's judgement is relatively higher since it is more than 50%.

The analysis further showed that the level of consumers' post purchase regret does not differ with respect to gender, age, level of education or the race of the consumer. Upon further analysis, it has been discovered in this study that making an unplanned purchase does not necessarily lead to post purchase regret. The study however indicated price of the product purchased to have a strong impact on consumers' post purchase regret. The analysis further showed that a consumer is likely to regret his purchase decision if he paid a higher price for a product than when he paid a lower price. The analysis in this study finally showed that the level of consumers' decision process, consumers' involvement in the pre-purchase decision process, and reversibility of a purchase decision do not actually determine the level of post purchase regret experienced by consumers.

9. Recommendations

Since dissatisfaction leads to post purchase regret (Tsiros & Mittal, 2000) [87], consumers, especially those at low income levels have to manage their incomes in a more rational way in order to obtain a product that will give them maximum satisfaction thus reducing their level of post purchase regret.

In depth planning of expenditure will enable consumers to buy only products that satisfy their actual needs. Consumers should get used to increasing their degree of involvement in purchasing decisions process. Preparing a list of the needed products and discussing them with family members before going to the store can reduce the probability of purchasing unplanned goods leading to the reduction of post purchase regret.

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