

Consumers' Psychological Factors Association with Brand Equity of High-Involvement Product: Case of Laptop

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The paper reports on a study of Consumers' psychological factors association with brand equity of high-involvement product, laptop. In the light of increasing popularity of laptop in Bangladesh, this paper focuses on the matter how choice of brand be affected by consumers' psychological factors. To find out the relationship four hypotheses are developed and a structured questionnaire is distributed among 47 professionals and 45 students for collecting primary data between August, 2011 and September, 2011. Survey results are further tested through statistical tools (chi-square, paired sample t-test). The result shows that the needs that motivate people to use laptop most are associated with their day today purposes (office or class assignment, internet). They consider battery lifetime as important feature while satisfying those purposes. In addition, Family plays the most significant role in constructing their attitude. Respondents show a positive association between their attitudes with one of the highest ranking laptop Apple. Though newspaper and websites play the vital role for organizing, evaluating information, they rarely help them to choose the brand.

Field of Research: consumer behavior, high-involvement product, motivation, perception, attitude, brand, brand equity.

1. Introduction

Organizing laptop fairs frequently every year show how laptop/notebook's popularity is increasing in a rapid pace in Bangladesh. Just 2-3 years ago, laptop considered to be a luxury item to most people because of its high price in accordance with their income (Ahmed, 2010).. Now desktop Computer is getting replaced by the Laptop Computer with its unique feature of portability and is becoming a basic necessity for all the individuals- from businessmen to students to teachers and even for the kids (Bhuiyan, 2009)

Understanding consumers' behaviour is a crucial factor in the companies' success around the world (Khasawneh, Hasouneh, 2010), especially when this understanding factor related with high-tech product like laptop. For buying this kind of complex article, customers try to gather as much information as possible and take time before reaching the final decision of purchasing. This behavior is termed as "Complex buying-behavior". More precisely, complex buying-behavior occurs when significant brand differences are present and consumers are high involved, such as comparing features and prices of different brands. (Kotler, Armstrong; 2010).

Marketers, considering that, dedicate a lot of efforts in trying to specify the exact needs and wants for their customers and target markets, they also try to determine the best products characteristics that can satisfy the target market from the consumers own perspective. However, we have to say that different customers in different places have various needs and wants; they also act and behave in different ways to fill these

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needs. (Khasawneh, Hasouneh, 2010). Replacement of Desktop Computer by the laptop is the reflection of this perspective. The unique feature of portability makes laptop basic necessity for all the individuals- from businessmen to students to teachers and even for the kids.

The objective of this study is to explore factors that play important roles to motivate consumers, constructing their perception, and determining attitude (psychological factors) while choosing high-involvement product like laptop and how they associate these psychological factors with brand equity (brand loyalty, brand association, perceived quality, and brand awareness) of laptop.

The reminder of the paper is designed in twelve sections. Section 2 demonstrates the purpose of the study. Section 3 discusses theoretical background followed by hypothesis development in section 4 and methodology in section 5. Sampling method, survey instrument, statistical methods for calculation and survey result are arranged in section 6, 7, 8, 9. Section 10 analyses hypotheses where conclusion and limitations of the study are discussed in section 11 and 12 subsequently.

1.1 PC (Personal Computer) Market in Bangladesh

Ultra portable subnotebooks or netbooks are rapidly gaining popularity in the country's vibrant PC market as evident from the latest bout of the annual ICT fair currently being held in the city. Despite lacking some basic features like a built in optical drive, these petite cousins of more familiar notebook PCs are drawing significant attention in this year's BCS ICT World 2009; owing to their lower than conventional size and price. (Bhuiyan, 2009)

Netbooks first came to fore in the local market back in 2008; when the Taiwanese high-tech giant duo Acer and Asus brought their groundbreaking Acer Aspire One and Asus EEE PC in the Dhaka outlets followed by their successful launch in international scene. (Bhuiyan, 2009)

Other big names in the PC market followed soon and by the beginning of 2009, almost every laptop brand available in the market had their own version of notebooks to offer.

Price is one of the major determinants while choosing a brand in Bangladesh. Prices of notebooks can be as much varied as the number of brands and models, so that they range from Tk. 36000 to as high as Tk. 155,000. But an average laptop usually is priced between Tk. 50,000.00 to Tk. 70,000.00. (Bhuiyan, 2009)

2. Purpose

The focal point of this study is to explore how consumers' psychological factors (Motivation, perception, and attitude) are associated with brand equity (brand loyalty, brand association, perceived quality, and brand awareness) of laptop.

3. Theoretical Background

3.1 Psychological Factors

According to Kotler and Armstrong (2007) psychological factors that influence consumer behavior are motivation, perception, learning, belief and attitude. Among those motivation, perception and attitude are self driven factors, whereas, learning and belief are driven by family and society. Here, motivation, perception, and attitude will be highlighted because of their nature of not affected wholly by society or family.

Motivation refers to the forces that encourage people to take or avoid certain action or behavior in order to satisfy certain needs. As we can notice, the study to motives is related to the knowledge of people needs, because the action which was motivated wouldn't arise if the need didn't arise. Though Maslow suggested that humans needs fall within five levels, after person satisfy the needs in one level, he/she will proceed to the higher level and try to satisfy the needs, in reality, humans can try to fill several needs in different levels at the same time. (Chisnall, 1995; Blythe, 1997; Adcock, D. *et al*, 2001) Motivation, meanwhile, is identified as "an inner drive that reflects goal-oriented arousal" (Arnould *et. al.*, 2004 p259). Moreover, Sigmund Frued says that people's subconscious mind motivate them more than their conscious feelings.

Perception is the process by which people select, organize, and interpret information to form a meaningful picture of the world from three perceptual processes

- *Selective attention* is the tendency for people to screen out most of the information to which they are exposed
- Selective distortion is the tendency for people to interpret information in a way that will support what they already believe
- Selective retention is the tendency to remember good points made about a brand they favor and to forget good points about competing brands

Attitudes describe a person's relatively consistent evaluations, feelings, and tendencies toward an object or idea. Blythe (1997) defined attitude as "*a learned tendency to respond to an object in a consistently favourable or unfavorable way*". Attitude is that lasting general evaluation of something. It represents how consumers feel about products, services, and companies. Attitudes can tell you a lot about your consumers and how well you're (brand) accepted in the marketplace. Just remember that consumers easily screen information that conflicts with their own attitudes. A consumer's attitudes are learned. They're formed by direct personal experiences, and they're influenced by the individual's ideas and personality, the experiences of friends and family members, and media exposure. The good news is that you can influence attitudes. In fact, when you combine knowledge with a positive or negative attitude about a specific object or product, you drive the perception of that consumer. (Lake, 2009).

3.2. Brand

A brand can be defined as a "name, term, symbol, or design, or a combination of them, which is intended to signify the goods or services of one seller or group of sellers and to differentiate them from those of competitors" (Keller 1993, p. 2). Brand image takes place when brand associations held in the mind of consumers are conveyed onto a

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consumer's perception about a brand. These associations can either be developed from direct experience with the product, from the information communicated by the company, or from previous associations held about the company and origin, etc. (Martinez et al. 2003).

3.2.1 Brand Equity

To entice consumer response, marketers strive to build brand equity. Brand equity is, according to Aaker (Aaker, 2005, p. 173) "a set of assets and liabilities to a brand's name and symbol that adds to or subtracts from the value provided by a product or service to a firm and/or a firm's customers". These assets and liabilities can be grouped into four categories: brand loyalty, brand awareness, perceived quality, and brand associations. (Andersson, et al. 2006)

- **Brand Loyalty**

Brand loyalty is a "*form of repeat purchasing behaviour reflecting a conscious decision to continue buying the same brand*" (Solomon et al. 2001, p. 259). Moreover, in order for brand loyalty to take place, customers must have a positive attitude towards a brand, as well as being involved in repeated buying. If, in actual fact, a brand has been greatly advertised and been around for some time, it can generate an emotional attachment by either being integrated into the consumer's self-image or linked to past experiences (Ibid).

- **Brand Awareness**

Brand awareness entails that recognition is communicated onto a brand, which allows consumers to identify with the brand product, and thus providing companies with constant competitive advantage (Aaker, 2005). For low involvement products, products "*bought frequently and with a minimum of thought and effort*" (buseco.monash.edu.au), awareness can affect a consumer's buying decision through a sense of familiarity, whereas for high involvement products, brand awareness provides consumers with a sense of presence and assurance (Aaker, 2005).

- **Perceived Quality**

Perceived quality can be defined as "*the customer's perception of the overall quality or superiority of a product or service with respect to its intended purpose, relative to alternatives*" (Aaker, 1991 p. 85). Perceived quality is initially a consumer's perception about a product, and thus is a tangible overall opinion about a brand. Nevertheless, this feeling is usually based upon fundamental dimensions, such as product features and performance. Furthermore, perceived quality is often differentiated from the actual quality, and can derive from past experiences involving former products or services (Ibid).

- **Brand Association**

Brand association can either be linked directly or indirectly with a customer's thought about a brand. Those associations that have the clearest significance are built upon product attributes, such as physical product characteristics and non-material product characteristics (Armstrong et al. 2005), and customer benefits - "*the desirable consequences consumers seek when buying and using products and brands*" (Peter et al. 1994, p. 87), which provide customers with a motive to buy the product, consequently resulting in brand loyalty (Aaker, 1991).

4. Hypothesis Development

According to theory, motivation depends on a consumer's need, that is, the feeling of deprivation. After that a consumer is expected to inquire physical and non-physical characteristics of a product or service either directly or indirectly associated with his/her need. Based on this assumption we can say,

H1: There is a strong relationship between motivation and brand association.

Attitude is defined by scholars as relatively permanent evaluation, feelings and tendencies towards an object or idea which is directed by a consumer himself/herself, or by family and society. So, we can assume that,

H2: Consumers are strongly influenced by others while choosing brand.

Perception deals with organizing, interpreting information available in different media like newspaper, websites, exhibitions etc. also people associated perceived quality with overall tangible opinion about a brand. So,

H3: Choosing brand is affected by organizing, interpreting information available in different media.

H4: People associate perceived quality with overall tangible opinion about a brand.

5. Research Method

As objective of this study is to find out how consumers' psychological factors (motivation, perception, and attitude) affected by brand equity in case of high-involvement product (laptop), empirical research method is applicable in this situation. Empirical study is more appropriate in such situation when proof is sought that certain variables affect other variables in some way (Kothari, 1998). Finally, we analyzed the findings in relation to theory. As a result, a deductive approach was applied, which implies that the researcher "*begins with a theoretical or applied research problem and ends with empirical measurement and data analysis*" (Neuman 2003, p. 267).

6. Sample

Following a structured questionnaire, 50 undergraduate students and 50 employed/ self employed respondents were chosen for survey. Initially data were collected from 100 respondents following convenience sampling. Among them, only 92 respondents (where 47 from employed people and 45 from undergraduate students) screened to be useable. These two groups were chosen as they were the frequent user of laptop. In addition, educated respondents were chosen intentionally to reduce sampling bias. The selected respondents were presumed to be better responsive, well-informed, and representative following the purpose of the study.

7. Survey Instrument

A structured question may either entail multiple choices, dichotomous questions, or a scale, For primary data collection from the respondents, a structured questionnaire with

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9 statements has been developed. Among those, four questions (1,2,4,5) were concerned with consumers' psychological factors (motivation, perception and attitude), four questions were related to brand (3,6,7,8) one question compiled required demographic information (age, occupation, gender) of respondents. Different scaling techniques such as five-point Likert-type scale, multiple choice, and itemized rating scales were deployed to obtain response with less error.

8. Statistical Methods for Calculations

The purpose of the survey was to understand how consumers' psychological factors (Motivation, perception, and attitude) are affected by brand equity (brand loyalty, brand association, perceived quality, and brand awareness) of laptop. These aspects are further surveyed, scrutinized and analyzed through some statistical techniques through both qualitative and quantitative methods. Simple descriptive statistics like frequency distribution, mean and standard deviation are used to quantify the opinions of the respondents. Statistical chi-square test following cross tabulations and descriptive statistics, paired sample t test, were used to test the hypotheses furnished in the objective part.

9. Survey Result

Psychological factors	purpose of the use (Motivation) [table: 1]	Respondents recommended office/class assignment purpose and internet as most important uses. Mode for both purposes is 1 (very important). In addition, standard deviations reflect small deviation from means. [Table:1]
	Sources of information (Perception) [table: 2]	Website is the most reliable source to find information. After that respondents rely most on newspapers and exhibitions. Website ranked # 1 by 48.9% respondents whereas newspaper ranked #1 by 28.3%.
	Influence of others (Attitude) [table: 3]	40.7% say family plays the significant role in influencing their purchase decision. Also, friends and colleagues persuade their decision. (table: 3)
Brand	Importance of the features (Brand) [Table: 4]	Result shows mode for HDD, RAM, Graphics, Battery Lifetime, price is 1. That is, people consider these criteria most important features. But standard deviation results show very small spread compared to mean in case of RAM, warranty, and price. [Table:4]
	Ranking of Brands (Brand) [Table: 5]	Most of the respondents ranked sony vio number 1 (42.5%), after that 32.1% ranked Apple as number 1. HP and Dell hold second position consecutively (25%). Asus is in the 6 th position (52.4%). [Table:5]
	Perceived quality (Brand) [Table: 6]	People strongly agree with the fact that they choose a particular brand as it serves their purpose (72.4%) and it is technically sound (72.7%). Only 53.3% put emphasis on brand itself. (table:4)

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	Office/ class assignment	entertainment	Internet	Gaming
N Valid	92	92	92	91
Missing	0	0	0	1
Mean	1.49	2.36	1.60	3.34
Median	1.00	2.00	1.00	4.00
Mode	1	2	1	4
Std. Deviation	.871	1.163	.984	1.447

Ranking (%)	Sources	Newspaper	Website	television	Exhibition/Laptop fair	Leaflets
1		28.3	48.9	3.3	17.4	1.1
2		34.8	15.2	13	21.7	8.7
3		14.1	16.3	23.9	20.7	20.7

Table 3: Who Influence to Take Purchase Decision?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Family	37	40.2	40.7	40.7
	Friends	21	22.8	23.1	63.7
	Colleagues	20	21.7	22.0	85.7
	others	13	14.1	14.3	100.0
	Total	91	98.9	100.0	
Missing	System	1	1.1		
Total		92	100.0		

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Table: 4: Important Features

		HDD_	RAM_	Graphics	Battery Lifetime_	warranty period	Color_	outlook_	price_
N	Valid	92	92	92	92	91	92	92	91
	Missing	0	0	0	0	1	0	0	1
Mean		1.68	1.37	1.96	1.59	1.68	2.17	1.92	1.62
Mode		1	1	1	1	2	2	2	1
Std. Deviation		1.089	.808	1.194	.996	.815	1.055	1.008	.892
Percentiles	10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Table: 5: Ranking of Brands

Ranking (%)	Sony Vio	HP	Dell	Apple	Compaq	Asus
1	42.5	19.6	14.8	32.1	2.5	11.0
2	18.4	25.0	25.0	23.8	6.2	0
3	17.2	18.5	28.4	19	6.2	13.4
4	10.3	26.1	22.7	3.6	22.2	3.7
5	6.9	4.3	4.5	17.9	34.6	18.3
6	1.1	1.1	3.4	3.6	27.2	52.4

Table 6: Perceived Quality of a Brand

Opinion	Ranking	Strongly agree (%)	Much agree (%)	Neither agree nor disagree (%)	Little agree (%)	Strongly Disagree (%)
It serves my purpose		72.4	21.8	4.6	0	1.1
it is an established name in market		53.3	42.4	3.3	1.1	0
it is technically sound and durable		72.7	23.9	2.3	1.1	0

10. Hypothesis Analysis

H1: There is a strong relationship between motivation and brand association. Factors that motivate people to use laptop are either for office work/class assignments or access internet. Fulfill their purposes they emphasize on two attributes of laptop, one is RAM and another one is battery lifetime. To test the statistical association between the considered variables, null and alternative hypotheses are designed as the following format:

H₀ : There is no significant association between the variables.

H_a : There is significant association between the variables.

	Hyp. No. 1	Description of the variables to be associated	Value of chi-square	Degree of freedom	Cramer's V	P-value
Motivation Vs. brand association (H1)	1.1	Office/class assignment Vs. RAM	20.570	16	.231	.196
	1.2	Office/class assignment Vs. Battery Lifetime	47.035	16	.350	.000
	1.3	Internet Vs. RAM	17.016	16	.211	.385
	1.4	Internet Vs. Battery Lifetime	24.522	16	.253	.076

We can see here that in column 1.2, $P = .000$ which means, there is a significant relationship between battery lifetime and office/study purposes. That is, when consumers use laptop for office/study purposes, they consider battery lifetime as important feature of laptop. Also, Cramer's $V = 0.385$ shows a moderate relationship between these two variables. But null hypothesis is accepted in other cases.

H2: Consumers are strongly influenced by others while choosing laptop. Consumers are influenced by others, especially by family while buying high-involvement products. The degree of influence of others while choosing laptop is quantified by chi-square test. Here, associations of others are tested only with Sony vio and Apple because of their image among respondents. (see: result part). To test the statistical association between the considered variables, null and alternative hypotheses were designed as the following format:

H₀ : There is no significant association between the variables.

H_a : There is significant association between the variables.

Influence of others vs. Top Brand (H2)	Hyp. No 2	Description of the variables to be associated	Value of chi-square	Degree of freedom	Cramer's V	P-value
	2.1	Sony Vs, influence of others	18.259	18	.266	.439
	2.2	Apple vs. influence of others	18.920	15	.276	.217

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A very surprising result is found in case of the association between influences of others while choosing laptop brand. In result part (See: result part) we can see that respondent's decision making mostly influenced by family, also, they choose Sony vio and Apple more than other brands. But there is no association between these two variables. Here, chi-square value= 18.259, $P= .439$ in case of brand sony and influence of others, that is, null hypothesis is accepted here. The similar result is found between Apple and influence of others, where chi-square value= 18.920, $P= .217$

H3: Choosing brand is affected by organizing, interpreting information available in different media.

In result section we found that websites and newspaper were the important sources of information to organize and interpreting data. But do they affect brand choice? Paired-sample T-test gives us the answer here.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	website	1.52	92	2.360	.246
	newspaper	1.40	92	.995	.104

Paired sample T-test

			Pair 1
			Website-Newspaper
Paired Difference	Mean		.120
	Std. Deviation		2.601
	Std, Error Mean		.271
	95% confidence interval	Lower	-.419
	Of the difference	upper	.658
t			.441
df			91
Sig (2- tailed)			.660

The Sig. (2-Tailed) value is 0.660. This value is more than .05. Because of this, we can conclude that there is no statistically significant difference between the means choosing the laptop brand for the newspaper and websites. We can conclude that, choosing brand can be affected by chance of these two information sources.

H4: people associate perceived quality with overall tangible opinion about a brand. To test the association between brand and perceived quality, only Sony vio and Apple are chosen for their popularity among respondents plus first and third statement of perceived quality for the same reason. Null and alternative hypothesis are developed as follows:

H₀: There is no association between perceived quality and brand

H_a: There is an association between perceived quality and brand

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Hyp. No. 4	Description of the variables to be associated	Value of chi-square	of freedom	Cramer's V	P-value
1.	Its serves my purpose best vs. sony vio	21.711	18	.287	.245
2.	Its serves my purpose best vs. Apple	30.790	15	.352	.009
3.	It is technically sound and durable Vs. Sony vio	5.772	18	.152	.997
4.	It is technically sound and durable Vs. Apple	50.342	15	.774	.000

There is a strong relationship ($P=.000$, Cramer's value=.774) between technically soundness and brand Apple. Though in survey result, 42.5% respondents ranked sony vio as 1 but do not associate their perceived qualities with it (table: , column: 1, 3). In both cases null hypothesis is accepted ($P=.245$, $P=.997$). whereas Apple is less preferred than Sony vio, but they associate it with perceived quality. ($P=009$, $P=.000$).

11. Conclusion

The purpose of this study is to explore how consumers' psychological factors (Motivation, perception, and attitude) are associated with brand equity (brand loyalty, brand association, perceived quality, and brand awareness) of laptop. The result revealed that, consumers' motivation to use laptop and brand association criteria work separately. The needs that motivate people to use laptop are associated with factors that help them keep themselves up to date (office or class assignment, internet). They consider battery lifetime (brand association) as important feature while satisfying those purposes. Consumers' attitudes are shaped up by others, especially by family members while buying high-involvement products. Respondents show a positive association between their attitudes with one of the highest ranking laptop Apple. Like other products, consumers' perception for choosing laptop relies upon different sources of information. In this particular case, they choose newspaper and websites to build up their perception. Though newspaper and websites play the vital role for organizing, evaluating information, they rarely help them to choose the brand.

12. Limitations of the Study

The study focused only on psychological patterns of consumers. But demographic features are ignored here. In addition, by ignoring low-involvement products, only high-involvement product like laptop is chosen here. Sample size is limited to 100 and respondents are chosen from Dhaka city only.

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