

The Impact of Product Packaging Design on Consumer Repurchase Intention — A Study of VinaMilk, Vietnam

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Abstract—This research was conducted to identify the direct impact of product packaging design factors to consumer repurchase intention as well as the indirect association of these factors to the repurchase intention through two terms of brand awareness: brand recognition and brand recall. Quantitative method was applied with the sample size of 293 respondents who were Vinamilk users living in Ho Chi Minh City. The results demonstrated that in order to attain high level of consumer repurchase intention, board of management of Vinamilk should: a) mitigate the number of colors applying on the packages, b) create unique fonts and use recycle materials for the packages, and c) introduce products with easy-to-store and differentiated shapes. Furthermore, this study found out empirical evidence that brand recognition and brand recall could predict the consumer 'repurchase intention' level. On the other hand, colorful packages, packaging materials and fonts, and packaging shapes indirectly affected on the repurchase intention.

Index Terms—Repurchase intention, brand recognition, brand recall, packaging design.

I. INTRODUCTION

In recent market place, capturing large consumer loyalty can help enterprises or brands to maintain growing profit as well as promote organizations position in global competitions among various enterprises and brands. Therefore, it is important to consider what factors can be effective more exactly and completely in increasing the consumer loyalty. Organizations can only capture consumer loyalty when they understand the recent consumer's repurchase intention.

Besides, the fact that recent consumers are too busy lead to an increasing demand for more aesthetics and appealing product's packages. It was estimated that consumers spend less than a minutes to scan and decide to buy the products they need. This is the reason why packaging is considered as one of the most essential factors in point-of-purchase decision making [1]. Therefore, companies, especially drinking milk producers, strongly focus on creating unique and attracting packages to catch consumer's attention [2]. As a result, studies about the product's packaging design were conducted and learnt widely. Studies about the relationship between the consumer repurchase intention and product's packaging design are more and more appreciated.

With the advantage of young population, Vietnam dairy market, especially drinking milk segment, has enjoyed the growing demand. During 2014-2015, together with the

economic recovery, domestics drinking milk manufacturer such as TH Food Chains JSC, Dutch Lady Vietnam Food & Beverage Co., Ltd, etc. launched new products to satisfy the potential raising demand as well as to gain more market share. Despite the continuous release, Vinamilk still took the role of the leader of the drinking milk products' leader in Vietnam, making up 48% of the value sales in 2015 [3].

II. LITERATURE REVIEW

A. Product's Packaging Design

Packaging is considered as a powerful vehicle of communication between manufacturers or service providers with the consumers [4]. Factors of packaging are categorized into 2 types: visual and informational elements. The visual elements includes Colors, Pictures, Fonts, Shapes and Sizes of packaging, and relate more to the affective side of decision making. Informational elements relate to information provided and materials used in the packaging process, and are more likely to address the cognitive side of decisions [5].

Colors and pictures include layout, color combinations, typography and product photography, all of which create an aesthetic image. For low involvement, graphics and colors are critical because they have strong impacts on marketing communication, especially in terms of image building [6].

According to Deliya, Parmar, & others, font is an important element of packaging which attracts the consumer attention. Packaging information can create contrary results. It can lead to misleading or inaccurate information through small fonts and dense writing styles which are used on the package [7].

Package size and shape affects consumer judgment and decisions more and more directly. Consumers tend to experience same products from different brands and will decide the bought volume later. This implies that disconfirmation of package size after consumption may not lead consumers to revise their volume judgments in the long term, especially if the discrepancy is not very large [8].

Kupiec and Revell (2001) successfully prove that the behavior of consumers toward products characterized by high involvement is less influenced by image issues and visual response. In such cases, consumers need more information about the products such as ingredients, expiry date, country of origin, etc. Written information on the package can assist consumers in making their choice carefully as they consider product characteristics [9].

Material of packaging is important element which prevents the product from loss. High quality material will attracts customers more than a low [10].

Manuscript received March 25, 2016; revised August 10, 2016.

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B. Brand Awareness

Brand Recognition is the process of perceiving a brand as previously encountered [11], and relates to consumer's ability to match experience to the brand when given the brand as a cue [12]. Francois and MacLachlan (1995) define Brand Recognition as the percentage of people stating that they have heard or seen of a specific brand [13].

According to Maciej Koniewski (2012), Brand Recall has a number of desirable effects on Consumer's Buying Behavior, and therefore result in the revenue of the company [14]. Keller (2007) suggests that Brand Recall relates to consumers' ability to retrieve the brand from memory when given the product category, and needs fulfilled by the category or a purchase or usage situation as a cue [12]. Thus, Brand Recall requires consumers to generate the brand correctly from the memory when given a relevant cue [15].

C. Consumer Repurchase Intention

Repurchase intention is a measure of the willingness to buy a product again and has also been operated as the probability that a consumer will buy a product or service more time [16]. According to Hellier *et al.* (2003), consumer's repurchase intention is defined as the individual's judgment about buying again a designated service from the same company, taking into account his or her current situation and likely circumstances [17]. Seider (2005) describe repurchase intention as the degree to which customers are willing to purchase the same product or service after having experienced it [18]. Customers' repurchase intent depends on the value obtained in their previous transactions [19].

III. METHODOLOGY

A. Questionnaire Design and Data Collection

This study mainly focused on consumer's repurchase intention. Thus, the quantitative method was the major approach applied. In other words, questionnaire survey was used to collect data from selected sample chosen from the target population of Vinamilk's consumers living in Ho Chi Minh City. Most of the measures were designed based on a five point Likert scale, in which 1 is "totally disagree" to 5 is "totally agree". Completed questionnaire was sent directly to the consumers. This research only acknowledged consumers who usually used Vinamilk's drinking milk products would have enough perceptive ability to answer all questions without any outside influence.

Data Collection: Convenience sampling method was used to collect data. The paper questionnaire survey was delivered and collected face-to-face with the respondents at supermarkets, grocery stores, universities and hospitals. The final sample size achieved the number of 293 cases.

B. Factor Analysis and Reliability

Three factors analysis used the principal component extraction method and varimax rotation of 14 items of the group of dependent variables and 35 items of the group of independent variables related to the packaging design factors affecting the consumer repurchase intention, were conducted on the sample size of 293 consumers of

Vinamilk's drinking milk products. Prior to running the analysis with the SPSS, the data was screened by examining the descriptive statistics on each item. In this study, the factor analysis procedure was conducted twice: once for the group of 3 dependent variables, and again for the other group of 7 independent variables. 2 items from the group of 3 dependent variables was rejected, and 24 items together with 4 independent variables were rejected after running the effective factor analysis. The Kaiser-Meyer Olkin measure of sampling adequacy was .790 for the group of dependent variables and .675 for the group of independent variables (according to Pallant [20], in order to be significant, the value has to be .60 or above), indicating that the present data was suitable for principal component analysis. Similarly, Bartlett's test of sphericity [21] was significant ($p < .001$), indicating sufficient correlation between the variables to proceed with the analysis.

TABLE I: SUMMARY OF DEPENDENT VARIABLES WITH RELIABILITY COEFFICIENTS

Given Names	Number of Items	Alpha
1. Repurchase Intention (REPURIN)	4	.887
2. Brand Recognition (BRARECO)	4	.771
3. Brand Recall (BRARECA)	4	.750

Using the Kaiser-Guttman's retention criterion of Eigenvalues greater than 1.0, a three-factor solution provided the clearest extraction for the group of dependent variables, including 12 items [22], [23]. The three factors accounted for 67.820% of the total variance and the Cronbach's coefficient ranged from .750 to .887 among the factors, indicating good subscale reliability as shown in Table I. In addition, another three factors solution was conducted for the group of independent variables consisting of 11 items. These three factors took up 66.332% of the total variance and the Cronbach's coefficient varied between .726 and .839 among the three factors indicating good subscale reliability as shown in Table II.

TABLE II: SUMMARY OF INDEPENDENT VARIABLES WITH RELIABILITY COEFFICIENTS

Given Names	Number of Items	Alpha
Colorful packages (COLOPAC)	3	.780
Packaging shapes (PASHA)	4	.839
Packaging materials -font (PAMAFONT)	4	.726

The rationale used in naming these four factors was guided in part by the recommendations of ref. [24], where sorted factor weights in excess of .65 were used to "drive" the process of labeling and interpreting each factor. The present three factor models of this study were deemed the best solution because of their conceptual clarity and ease of interpretability.

IV. RESEARCH FINDINGS

A. Characteristics of Respondents

Table III illustrates the basic characteristic of the 293 respondents, who are Vinamilk consumers living in Ho Chi

Minh City. Among 293 respondents, the largest percentage of 61.8% is group of respondents from 18 to 24 years old. In term of gender, there are 134 male and 159 female, equal to 45.7% and 54.27% respectively. In term of occupation, “student” has the biggest level at 57.34%. Finally, the monthly income of consumer was divided into 5 different group as shown in Table III below.

TABLE III: VINAMILK CONSUMERS PROFILES

	Frequency	Percentage (%)
Age		
Under 18	13	4.4
18-24	181	61.8
25-34	53	18.1
35-44	38	12.9
Over 44	8	2.7
Total	293	100
Gender		
Male	134	45.7
Female	159	54.27
Total	293	100
Occupation		
Student	168	57.34
Housekeeper	15	5.12
Worker	37	12.63
Officer	59	20.14
Businessman/ Businesswoman	14	4.78
Total	293	100
Monthly Income		
Under 3 million VND	123	41.98
3 – 5.9 million VND	64	21.84
6 – 9.9 million VND	55	18.77
10 – 14.9 million VND	10	3.41
15 – 20 million VND	15	5.11
Over 20 million VND	26	8.87
Total	293	100

B. Factors Affecting Consumer Repurchase Intention

In order to figure out which factors affect consumer repurchase intention as well as to test hypothesis H1, H2 and H3, a series of three multiple regressions were employed. Table IV shows that there were significantly positive relationships between the consumer repurchase intention and the three independent variables of packaging shapes, packaging materials and fonts, and colorful packages.

TABLE IV: CORRELATIONS BETWEEN VARIABLES

	REPURIN	1	2	3	4
1. PASHA	.237**				
2. PAMAFONT	.075	.402**			
3. COLOPAC	.119	.398**	.211**		
4. BRARECO	.331**	.367**	.153	.624**	
5. BRARECA	.318**	.350**	.279**	.319**	.484**
Mean	3.48	3.76	2.93	3.45	3.96
STD	.711	.679	.719	.754	.585

Note: ** Significant level at $p < .001$

In these significant relationships, there was moderate correlation between consumer repurchase intention and packaging shapes ($r=.237$, $p<.001$). This means that the more satisfied the consumers felt about the packaging shapes of a product, the higher chance they repurchased that product. Besides, the variables of brand recognition and brand recall were also moderately correlated with consumer repurchase intention at ($r=.331$, $p<.001$) and ($r=.318$, $p<.001$), respectively. This means that the higher the brand

recognition and brand recall could lead to higher consumer repurchase intention.

C. Direct Effect of Consumer Repurchase Intention

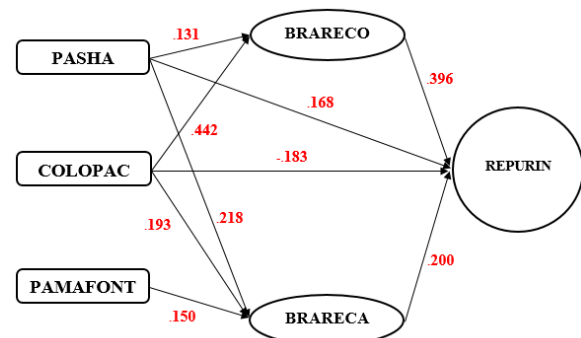
The result of multiple regression showed that the consumer repurchase intention was directly affected by four predictors: brand recognition ($\beta=.396$, $p<.001$), brand recall ($\beta=.200$, $p<.005$), packaging shapes ($\beta=.168$, $p<.005$) and colorful packages ($\beta=-.183$, $p<.005$). This means that every 1-standard deviation increase in brand recognition, or brand recall, or packaging shapes yielded an increase of a score of .396, or .200, or .168, respectively in consumer repurchase intention. However, a 1-standard deviation increase in colorful packages lead to a decrease of a score of .183 in consumer repurchase intention.

D. Indirect Effects of Consumer Repurchase Intention Brand Recognition and Consumer Repurchase Intention

The results of multiple regression analysis pointed out that the brand recognition significantly affected by two important predictors: packaging shapes ($\beta=.131$, $p<.005$) and colorful packages ($\beta=.442$, $p<.001$). Based on beta indicator and p value, these two factors directly affected the brand recognition and then brand recognition directly caused an effect on the consumer repurchase intention with ($\beta=.396$, $p<.001$). Therefore, through the intervening variable of brand recognition, the factors of packaging shapes and colorful packages created indirect effects on consumer repurchase intention. Thus, this study suggests that as a high level of packaging shapes and colorful packages, the brand recognition and consumer repurchase intention are likely to be greater.

E. Brand Recall and Consumer Repurchase Intention

Brand recall was mainly affected by these three important predictors: packaging shapes ($\beta=.218$, $p<.005$), colorful packages ($\beta=.193$, $p<.005$), and packaging materials and fonts ($\beta=.150$, $p<.005$). These three factors directly affected the intervening variable of brand recall and then brand recall directly caused an effect on consumer repurchase intention with ($\beta=.200$, $p<.005$). Consequently, though the intervening variable of brand recall, the factors of packaging shapes, colorful packages, and packaging materials and fonts created indirect effects on consumer repurchase intention. Thus, this study suggests that as a high level of packaging shapes, colorful packages, and packaging materials and fonts become apparent, the brand recall and consumer repurchase intention are likely to be greater.



* Note: All coefficients in the model are significant at the .05 level.

Fig. 1. Significant path coefficients model.

F. Total Causal Effects of the Consumer Repurchase Intention

Table V summarizes the impacts of the independent variables (packaging shapes, colorful packages, and packaging materials and fonts) together with brand recognition and brand recall on the dependent variable (consumer repurchase intention) of this research. Regarding the total effects, brand recognition had the strongest effect on consumer repurchase intention with $\beta=.396$, according to [25], this can be considered as a moderate effect. Follow were packaging shapes with $\beta=.264$, brand recall with $\beta=.200$, colorful packages with $\beta=.031$ and lastly, packaging materials and fonts with $\beta=.030$. The total casual effects of all these independent and dependent variables on the main dependent variable of this study was .921.

Regarding to the direct effects, brand recognition with $\beta=.396$ was considered to have moderate effect on consumer repurchase intention, followed by brand recall with $\beta=.200$, packaging shapes with $\beta=.168$ and colorful packages with $\beta=.183$. The total direct effects of all these independent and dependent variables on the main dependent variable of this study was .581.

Regard to the indirect effects, the colorful packages had the strongest indirect effect on the consumer repurchase intention with $\beta=.214$, followed by packaging shapes with $\beta=.096$ and packaging materials and fonts with $\beta=.030$. The total indirect effects of all these independent and dependent variables on the main dependent variable of this study was .340.

TABLE V: INDIRECT AND TOTAL CAUSAL EFFECTS

Variables	Casual effects		
	Direct	Indirect	Total
PASHA	.168	.096	.264
PAMAFONT030	.030
COLOPAC	-.183	.214	.031
BRARECO	.396396
BRARECA	.200200
Total	.581	.340	.921

V. DISCUSSIONS AND RECOMMENDATIONS

A. Practical Implications and Contributions to Marketing

The practical implications to be drawn from this study have to do with the manner in which marketing managers of the drinking milk products should notice in the future. First, the findings of this study, based on significant correlations between the independent and dependent variables, suggest that in order to have high level of consumer repurchase intention, the manufacturer should: a) mitigate the number of colors printed on the packages, b) focus on colors that create good mood, c) concentrate on developing easy-to-store and unique shapes for packaging purposes, d) pay intention on recycle materials to produce packages and create differentiated font styles for the packages.

Increasing consumer repurchase intention should interpret more brand awareness, in terms of brand recognition and brand recall.

The results of this research also pointed out that there were significant correlations between brand recognition and independent variables. Consequently, to have significant brand recognition in brand awareness, this study suggests

that marketing managers of the companies should pay more attention on packaging shapes and colorful packages.

The brand recall in brand awareness was proved to be one of the reasons why the companies designed to identify in repurchase intention. This study figured out that there were significant correlations between the factors of brand recall in brand awareness and the independent variables. It was stated that in order to reach higher level of brand recall, the companies should focus on packaging shapes, colorful materials and packaging materials and fonts. The correlation between brand recall and packaging materials and fonts made brand recall different from brand recognition.

Finally, in order to attain a high level of consumer repurchase intention when the companies are in need of improving it, the marketing managers should pay greatly attention and consideration to the important factors that provide significantly unique contribution to predict repurchase intention directly and indirectly, as suggested by this study. The significant determinants that marketing managers of the companies should assign priority to product's packaging design are packaging shapes, colorful packages, and packaging materials and fonts. Moreover, this study also found that brand recognition and brand recall were the main aspects that the drinking milk products expected to obtain and that the product's packaging design directly affected consumer repurchase intention.

B. Applied Implications

By conducting this specific study, a review of a wide range of literature in the field of management studies was conducted, especially in the field of marketing. In addition, the application of consumer repurchase intention model to practice in the marketing industry with empirical research and hypothesis testing was the contribution of this study to assert the firmness of consumer repurchase intention and at least, to initially make it more applicable in the field of marketing.

C. Conclusion

All the objectives of this study have been successfully obtained: firstly to figure out what factors of product's packaging design affect consumer repurchase intention, brand recognition, and brand recall; secondly to measure direct and indirect effect of independent variables (packaging shapes, colorful packaging, and packaging materials and fonts) on dependent variable of consumer repurchase intention through brand awareness; and thirdly to provide recommendations for improving product's packaging design and how to raise brand awareness as well as consumer repurchase intention.

The application of the multivariate statistical techniques with factor analysis, standard multiple regression analysis, and path analysis allows the exertion of a causal relationship between the exogenous and endogenous variables of the consumer repurchase intention model. Explanations and suggestions given were based on the review of the literature and the empirical findings of the study. In terms of significant relationships, bivariate correlations and Pearson product-moment correlation coefficients were employed to explore the relationship and its strength between each independent variable and the consumer repurchase intention, as well as between each intervening variable and the

dependent variable of the study. The direct and indirect effects of purchase decision were discussed and explained in order to achieve clear answers and evidence for all research hypotheses. Thus, the implications of this study provide both theoretical and practical contributions to the marketing field.

Although this study can be considered an initiation into measuring the consumer repurchase intention through intervening variables, the results of this study showed that not all factors have direct and indirect effects on the consumer repurchase intention for several subjective and objective reasons. Future researches should apply the model in other contexts with more meaningful statements for each factor or determinants of consumer repurchase intention.

This study argued that in order to increase the level of consumer repurchase intention, drinking milk producers should have a high level of product's packaging design, especially packaging shapes, colorful packages, and packaging materials and fonts in Ho Chi Minh City in particular and in Vietnam in general. Furthermore, this study also found that the factors of brand recognition and brand recall were the main purposes and motivations of improving the repurchase intentions since these factors directly influenced the repurchase intention. On the other hand, the factor of packaging materials and fonts did not directly affect the consumer repurchase intention, but indirectly affects the main dependent variable through brand recall.

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