

Factors Influencing Purchase Intention of Private Label Products: The Case of Smartphones

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Abstract. A growth of the market share of private label brands has been observed in developed countries. This growth was initially confirmed for food and drugstore categories, but it quickly expanded to new product categories, particularly technology products.

This study focus on a specific technology segment - the private label brands in smartphones, due to the growth observed in its demand, in recent years.

In this context, we analyzed and studied the smartphone market and consumer, and examine the factors influencing purchase intention of private label smartphones. The literature review on private label technological products proved to be scarce, which raised a challenge in exploring the main differences among factors influencing purchase intention for this specific product category.

In this study, through the development and application of an analytical model, we test a set of variables that resulted from the literature review, which could potentially influence the purchase intention of smartphones. We applied a questionnaire to a study population, and recorded 339 valid answers. The results were estimated in accordance with the Structural Equation Model. Our analysis highlights the importance given to technology by consumers, as well as price and quality. This study also revealed the importance of private label brands in a market which has as yet been underexplored.

Keywords: Owned Brands; Store Brands; Private Label Brands; Smartphones; PLS.

1 Introduction

As a result of constant product quality improvement, lower prices than manufacturer brands and the growing concentration and development of the retail sector [1], a growth of the market share of private label brands (PLBs) has been observed in developed countries [2].

According to Nielsen (2008) *cit. in* [3], PLBs were associated to food and drugstore products until recently, but they are now also associated to durable goods, such as technological products or home appliances, which are dynamic categories. The assumptions of this study were based on the growth of PLBs in different product categories and their implications on the purchase decision process, particularly for technology product categories.

The main aim of this research is to determine which factors influence the purchase intention of PLB smartphones. Therefore, we will study the following factors that potentially influence the purchase intention of PLB smartphones: price consciousness,

quality perception, technology perception, functional risk, social risk, brand awareness and country of origin.

Following the introduction, this paper is divided in three sections. The first section portrays the main theories and concepts of PLBs. This theoretical approach starts by explaining the theme of PLBs, highlighting the importance of "brand", and the importance of "private label brands". In this section, we also describe the purchase decision process and the factors influencing it. Then, the next section describes the study design and the methodology employed. Next, an analysis of the results and the model estimation are performed. Finally, we present the conclusions of this study and the respective implications.

2 Theoretical Framework

Brands were designed to identify and distinguish specific products, so that they are visible and distinct in the market. "A brand is a name, term, sign, symbol or design, or a combination of all these elements, with the aim of identifying goods or services of one seller and to differentiate them from the competitors" ([4], p.418).

The term "private label brand - PLBs" will be used in this study, based on the property rights and exclusivity of these products, which are owned and marketed by companies operating in distribution, rather than held by companies operating in production [6]. In other words, PLBs are owned, controlled and marketed exclusively by distributors [7]. This definition also suggests that the distributor has exclusive rights over the brand, given that, unlike when they sell manufacturer brands, retailers do not sell the same PLBs [8].

The purpose of PLBs is to allow the distributor to improve its position, in purchases and sales, while trying to retain consumers [10]. Consumers also have benefits from PLBs [11], due to the value they represent, because the budget available for the purchase of PLB goods is more elastic than the budget for buying national brands and, therefore, the same budget enables more quantity, variety and sometimes more quality. Several studies have shown that the market share of PLBs rises in periods of economic recession ([2], [12-13]), justified by greater price awareness by consumers resulting from a drop in income.

2.1 Purchase Decision Process and Smartphone Features

"The attitude is based on a set of information about the object evaluated and progressively accumulated by the individual (cognitive component), the attitude is oriented since it expresses a positive or negative evaluation in relation to the object (affective component), the attitude is dynamic and is a predisposition to action, and as such is a prediction of the behavior (behavioral component)" ([14], p.195).

Studying and consequently understanding the consumer's purchase intention is the key to winning market share within the respective market segment, it is necessary to understand which factors influence the purchase intention of smartphones.

Smartphones, a mobile phone that offers a more advanced computing ability and connectivity than a basic mobile phone, emerge as a powerful tool because of their portability and location detection (can be located via satellite), able to provide highly personalized and localized services [16]. Smartphone manufacturers provide, along

with their devices, an open operating platform, encouraging creators to develop new mobile applications. Wang *et al.* [17] reveal as such, not only do manufacturers create applications valued by users, but third parties can also develop different applications and deliver them directly to users through the purchased device. Consequently, today we are witnessing the "app world" phenomenon, with thousands of applications, whose goal is to provide a variety of information services.

2.2 Research Hypothesis

Regarding durable goods, several authors suggest that some variables which influence the purchase intention of durable goods differ when compared with the purchase intention of consumer goods ([3], [23], [24], [25], and [26]).

One of the main features of PLBs is that they are sold at a lower price than manufacturer goods ([15], [27]). However, not all consumers attach the same importance to the price variable; consumers may be more or less sensitive to price when they buy a product from one category over another, for example, due to the difference in perceived risk between the different product categories [28]. According to the literature reviewed, the main hypotheses to be tested are:

H1. Price consciousness positively influences the purchase intention of private label smartphones. ([15], [27-28])

H2. Quality perception of private label goods positively influences the purchase intention of private label smartphones. ([3], [5], [12], [20], [23], [29-30])

H3. Technology perception positively influences the purchase intention of private label smartphones. (Mohr and Nader (2003) cit. in [26], Cooper and Edgett (2009) cit. in [26], [31-33])

H4. Functional risk negatively influences the purchase intention of private label smartphones. ([19], [22], [24], [34-36])

H5. Social risk negatively influences the purchase intention of private label smartphones. (Harrell (1986), cit. in [24], [18], [24])

H6. Brand awareness positively influences the purchase intention of private label smartphones. ([37-38])

H7. The reputation of the country of origin negatively influences the purchase intention of private label smartphones. ([26], [39])

H8. The purchase intention of a private label smartphone positively influences the consumer's purchase decision. ([40-42])

3 Methodology

Based on hypothesis, we made a quantitative analysis by collecting a large number of information related to the target population, allowing us to validate or reject the research hypotheses.

3.1 Questionnaire

A questionnaire was designed for this study, aimed at empirically testing our research model which resulted from the literature review and then draw conclusions about the

factors that influence the purchase intention of PLB smartphones. The questionnaire's questions were extracted from the theoretical framework, although some were specifically formulated for the purpose (table 1). In order to assess the degree of agreement or disagreement for each statement in this block, we used the Likert scale of 1-7 (1-Strongly Disagree; 7-Strongly Agree). The other block aimed to collect demographic data on the respondents, so as to characterize the study population.

The entire questionnaire was processed via Web ("Facebook", "LinkedIn" and "Twitter", technology blogs, as well as personal and professional contacts).

Table 1. Representation of rating scales

Scale	Nr of items	Source
Price Consciousness	4	[27] (<i>Price Consciousness Scale</i>)
Perceived Quality	4	[27] (<i>Quality Consciousness Scale</i>)
Perceived Technology	4	[26] (<i>Technology Scale</i>)
Functional Risk	4	Authors
Social Risk	4	Authors
Brand Awareness	4	[26] (<i>Brand Reputation Scale</i>)
Country of origin	4	[26] (<i>Country of Origin Scale</i>)
Purchase Intention	4	[42] (<i>Purchase Intention</i>)
Effective Purchase	3	[27] (<i>Store Brand Usage Scale</i>)

3.2 Model Estimation

The PLS was chosen based on its estimation algorithm, to analyze a latent variable at each time, serving to minimize the residual variance of all the dependent variables of the model by applying multiple linear regressions to the estimated latent variables, and subsequently, be able to compare our study results with those of [3] and [26].

4 Main Results

4.1 Model Validation

The questionnaire was available between 12th May to 16th June 2012 and 339 responses were recorded.

The first step consisted in validating the model in terms of measures of reliability and construct validity. The scale's consistency, measured by Cronbach's Alpha is greater than or equal to 0.70 for all the scales used in our study, what means, according to [43] that all are acceptable. All scales have acceptable reliability because composite reliability (CR), which varies between 0.80 and 0.96, fall within the range of recommended values by [44] and [45]. High values of the average variance extracted (AVE) occur when the indicators are truly representative of the latent variable. The values of AVE should exceed 0.50 [44], which also holds for the variables studied. For the correlation coefficients, [44] indicate that the correlations between all the variables should be less than 0.90. The correlation coefficients have values ranging from -0.13 to 0.77. A measure of a variable has discriminant validity when it is not significantly correlated with measures of other variables that theoretically should not be highly correlated with this variable [46]. We compared the

square of the correlation coefficients with the AVE for each pair of variables and found that the AVE of all pairs of variables was higher than the square of the correlation coefficient between the respective variables, confirming the existence of discriminant validity.

The following table reveals the tests of significance, in order to understand which variables are statistically relevant.

Table 2. Parameter estimation results via *Bootstrapping*

Variables	Original Sample (O)	Standard Error (STERR)	T Statistics (O/STERR)
Purchase intention -> Effective purchase	0.7766	0.0238	32.6587
Brand -> Purchase intention	0.1503	0.0398	3.7745
Country of origin -> Purchase intention	-0.1257	0.1054	1.1925
Price -> Purchase intention	0.2582	0.0427	6.0533
Quality -> Purchase intention	0.1893	0.0508	3.7235
Functional risk -> Purchase intention	0.1752	0.0462	3.7939
Social risk -> Purchase intention	0.0877	0.0443	1.9769
Technology -> Purchase intention	0.2977	0.0547	5.4400

4.2 Analysis and Discussions

This study identifies seven variables that potentially influence the purchase intention of PLB smartphones: price consciousness, quality perception, technology perception, functional risk, social risk, brand awareness and country of origin reputation; however, the "country of origin" variable cannot be validated because it is not statistically relevant (statistic $T < 1.96$).

We can accept hypothesis H1, H2, H3, and H6. Regarding hypothesis H4 and H5, they have an opposite sign (positive) than expected. Consequently, we confirmed that these six variables directly influence the purchase intention of PLB smartphones. The R^2 value associated to the "purchase intention" variable is 0.39.

The variable with the greatest influence on purchase intention is "technology perception", yielding an estimated parameter value of 0.30, followed by "price consciousness" (0.26), "quality perception" (0.19), "functional risk" (0.18), "brand awareness" (0.15), and "social risk" (0.09).

The "technology perception" variable is the variable with the greatest influence on the purchase intention of PLB smartphones, mainly due to its importance in this product category. [26] found in his study that technology, as well as product characteristics influence the purchase intention of technological products.

With regard to the "price consciousness" variable, contradicting the results obtained in our study, [3] did not observe any significant relation between the "price consciousness" variable and the purchase intention of durable PLB goods. This lack of impact was highlighted by Jin and Suh (2005) *cit. in* [3], who also found that price consciousness does not influence the consumer's attitude regarding durable PLB goods, contrary to the case of PLB consumer goods ([15], [24], [28]).

However, the level of price consciousness is greater in users with low income ([47]; Lumpkin *et al.* 1986, *cit. in* [24]), which may explain the positive influence

found for the “price consciousness” variable, since the annual net earnings of 49% of the respondents ranges from 0 to 15.000€.

As for the "quality perception" variable, [3] revealed in their study that differences in quality perception between two brands and satisfaction with PLBs in general, determines the purchase intention of PLB durable goods. It should be noted that it is difficult for the consumer to perceive differences between manufacturer smartphones and PLB smartphones because both apply the same technology, are manufactured in the same factories and provide the same applications. Thus, and according to [3] and [12], as the difference in quality perception among the manufacturer brand and the PLBs narrows, (when it is lower or zero) the consumer is more likely to buy PLBs.

The "functional risk" variable, contrary to what was defined in our research hypothesis, positively influences the purchase intention of PLB smartphones. We can assume that this effect is due to the knowledge and information consumers have on these products, allowing them to evaluate the complexity of the product category, that is, the know-how that is necessary to manufacture such a device and evaluate the product lifecycle, that is, the time elapsing from product acquisition to product abandonment.

We also found a positive relation between the distributor's brand awareness and purchase intention of PLB smartphones, which can be explained on the basis of familiarity consumers already have of the operator's products and services, which according to [38] can lead to the purchase decision.

The final determinant of purchase intention, the “social risk” variable, positively influences purchase intention, contrary to what was defined as a research hypothesis.

According to [26], society and the influence of groups play an important role in consumer behavior when considering purchase intention of technological products. The author found a relation between the influence of groups and product design, and states that consumers prefer to buy products with an advanced design, due to the influence of groups, and a second relation between society and brand awareness, explained as the consumers' preference in buying national brand products in order to get recognition from society. Although this value is non-significant (the estimated parameter value is 0.09), we assume that consumers believe they are judged if they buy a smartphone instead of a basic mobile phone, and believe that a smartphone gives them status, regardless of the brand.

Finally, hypothesis H8 is validated, confirming that the intention of a person to act (or not) in a certain way, is an immediate determinant that person's present behavior.

5 Conclusion

From the variables listed, only six appear to be direct influencers of the intention to purchase PLB smartphones: the price awareness, quality perception, technology perception, social and functional risk, and brand awareness. The “technology perception” variable is the variable that has the greatest influence on purchase intention of PLB smartphones, due to the importance it represents in this product category (it brings together essential components for excellent product performance).

The “price awareness” variable, overlooked by some researchers ([3]; Jin and Suh, 2005, *cit. in* [3]) in studies on durable goods, was considered relevant for our study and proved to be influential on the purchase intention of PLB smartphones. We

believe that this relationship is justified on the basis of the socio-demographic data of our respondents, the net annual earnings.

Regarding the "quality perception" variable, [3] and [12] suggest that the consumer feels more likely to opt for PLBs when the difference in perceived quality between the manufacturer brand and the PLB is very small. The results for this variable provided support to this statement, which is justified by the difficulty that consumers have in perceiving differences in quality in this particular category.

We also found that brand awareness influences the purchase intention of PLB smartphones, which is justified by the consumer's relation with their telecommunications provider built over time. The "functional risk" and "social risk" variables took the opposite sign to the parameter estimated initially, which made this study even more interesting. We can assume that users of PLB smartphones are familiar with this type of device, being sufficiently knowledgeable about these products, allowing them to evaluate the complexity of the category and define the functional risk inherent to the purchase. As for the social risk, we know that users believe they are judged according to their purchase option (Harrell, 1986, *cit. in* [24]); however, this reversal sign may be due to the fact that when they buy a smartphone instead of a more basic mobile phone, they believe it gives them status, regardless of the brand.

Telecommunication operators can deduce from these findings that their customers or potential customers value technology, price and quality as the most distinctive elements in differentiating their offer, as well as perceived risk and brand awareness.

This study found some limitations that should be mentioned, related to the fact that it used an unrepresentative convenience sample. A second limitation relates to the choice of variables in the theoretical framework. Future studies should also explore the significance and importance of other variables that may influence the purchasing behavior of PLB technological products. For example, analyzing the influence of store image, the variety of products and brands, the importance of added value services, after-sales service, as well as assistance and return period.

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