Porovnání efektivnosti měření cenové citlivosti u nových a zavedených značek

Comparing the Price Sensitivity Measurement Effectiveness for New vs. Established brands

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Abstract:
Purpose of the article: The Price Sensitivity Measurement (PSM) evaluates consumers' expectations to set the optimal price. Applied to a brand's different lifecycle stages, it can show different feasibility. The aim of this paper is showing that PSM is more effective for newly introduced brand products compared to established ones.
Methodology: The difference in PSM effectiveness is tested for a newly introduced Lithuanian cosmetics brand, Ziede, and a well-known vitamin distributor brand, Jamieson. The authors selected 3 products, based on product category, consumer segment and product lifecycle stage. PSM was applied for different consumer categories by differentiating respondents who were familiar with the brands from those who weren't.
Scientific aim: Empirical results show that optimal prices are higher for brand-familiar consumers, since they incorporate the brand value in their perception of optimal price (Salamandic, Alijosiene, Gudonaviciene, 2014). However, as the brand moves along the lifecycle stages, the price perceived by consumers as optimal moves closer to the actual market price. The scientific problem is to find how to reach maximum effectiveness of PSM when setting the optimal price.
Findings: Empirical research confirmed two important recommendations for PSM applications. Firstly, since price sensitivity decreases with increasing brand awareness, PSM should be applied for different consumer categories. Secondly, product lifecycle advances together with brand awareness; therefore, PSM is more effective for newly introduced brand products.
Conclusions: By comparing PSM feasibility for new vs. established brands, it was obtained that PSM is more effective when applied at the early stage of a brand's lifecycle. Mispricing is detected more accurately when information is collected from more respondents who are unfamiliar with the brand, which happens more often when the brand is newly introduced. To avoid future losses, price must be set according to the brand-familiar group, while investing into building brand awareness.

Keywords: Price Sensitivity Measurement (PSM), Optimal Price Point (OPP), new brand, established brand

JEL Classification: D11, D12, L66

Introduction

Being the main driver of consumer behavior and an important component of brand management, price can either make a brand profitable or destroy it. Since it primarily signals about product quality, an incorrectly set product price can cost the producer significant losses. Oftentimes, consumers that perceive a brand that they are unaware of as being too expensive end up never buying it, while if priced too low the product raises suspicion about its features. Erdem, Keane, & Sun (2008) assert that brand awareness is associated with brand loyalty, which decreases price sensitivity and demand elasticity. The crucial task for a producer is to determine the price that matches the brand awareness and sustains the brand image, while maximizing demand and profits. Such a goal requires an in-depth analysis of consumers' willingness-to-pay (WTP) (Roll, Achterberg, Herbert, 2010), in order to define consumer expectations and draw realistic upper and lower bounds of the products' price range.

By applying the classical methodology of the PSM, Harmon, Unni, and Anderson (2007) have proved its high applicability in determining the price for new products. However, there is no empirical evidence as to how effective the PSM is in the case of newly introduced brands, as compared to established ones. This paper aims to determine when does PSM show the highest effectiveness in finding the optimal price that accounts for the awareness of a brand.

1. Literature review

Van Westendorp's PSM has been a cornerstone method in price sensitivity analysis for decades, proving to be an efficient tool in assessing consumers' perceptions about optimal prices. A wide literature covers various extensions of the PSM, as an attempt to estimate the consumer demand function. Among these, a great deal of attention was given to research led by Martin, Rayner (2008), Roll *et al*. (2010), Newton, Miller, Smith (1993). Lyon (2002) situates the PSM as being superior to other models of determining the optimal price, like monadic tests, in that its structure is less prone to sampling error and variance problems. On the other hand, Roll *et al*. (2010) criticizes the PSM as being unable to reason the recommended prices from a mathematical or economic perspective, proving to be efficient only in the initial research stages, but needing to be complemented in the more advanced stages by more metrical techniques.

Bivainiene (2010) identified a strong link between a brand and the product lifecycle. As in a product lifecycle, which assesses the relationship between sales and time, a brand lifecycle evaluates how time influences the value for the customer. Since a brand carries a very strong emotional basis, the transition through the lifecycle stages can be associated with lower price sensitivity, determined by higher brand awareness, brand image and recognition. Therefore, as the brand matures, the consumers get accustomed to the price ranges of the products of a particular brand and gradually perceive the actual prices as being optimal. Under such circumstances, using PSM as a tool to detect mispricing can be less effective, due to the fact that the likelihood of mispricing is lower than in the case of a new brand.

When pricing their product, producers make the error of pooling together consumers that are aware of the brand and are, therefore, less price-sensitive with consumers who, being unaware of the brand, perceive price as the only decision factor, and are more price-sensitive. Averaging the optimal prices from the two groups of consumers costs the producer lost opportunities for additional profits, and, as a result, destroys the brand image. Previous researches attempt to relate brand awareness to price sensitivity, using various approaches. For instance, Oh (2000) engages an extended value model to incorporate brand awareness and price fairness, while Chen and Hitt (2001) propose a model that explains price dispersion among branded and unbranded retailers, arguing that consumers are willing to pay a premium for a product if they are aware of its brand. Evidence from Salamandic, Alijosiene, and Gudonaviciene (2014) shows that, by collecting additional information about the respondents' awareness of the brand in focus, there is a possibility to apply the PSM in order to determine the value of a brand. However, there is little evidence of how the effectiveness of the PSM changes as a brand grows older. The aim of the current study is to show that PSM is more effective for products just being introduced to the market rather than for those that have existed for a while and are well known to the consumers.

Empirical evidence reveals that the method was applied for different industries and sectors and manifested accuracy in predicting optimal prices. For instance, Kupiec, Revell (2001) engage the PSM to estimate how consumers perceive the price of farmhouse Cheddar cheese, revealing low price sensitivity, while Gellynck, Viaene (2002) apply both the PSM and the conjoint analysis to determine the distribution of yoghurt preferences across market segments. Evidence from Carola *et al*. (2009) shows

that PSM proves to be accurate in the hospitality sector too, serving as a very efficient substitute to the usual trial-and-error or intuitive pricing method in the restaurant business. Since the hospitality sector is subject to great competition, pricing products accordingly considerably impacts the ability of a firm to earn profits and stay solvent. The model reveals to be especially useful in the IT sector, where practical, affordable, and efficient ways of assessing consumer expectations need to be applied. The PSM uses a simple structure that quickly constructs suitable price scales, optimal points and price levels at which consumers are indifferent for any software design project (Harmon, 2003). Harmon (2007) complements the PSM with the methodology of cognitive response to incorporate customer values in the pricing tools of new products.

The evidence presented above contributes to the certainty that launching a new product to the market, as well as correcting mispricing for existing products, requires a thorough assessment of market perceptions to ensure that consistent profits can be earned. As observed, the implications of the model generated valuable diagnostics in various industries and sectors. However, the evidence mentioned above lacks a sound argument as to how effectively the PSM works if the brand is newly introduced to the market or has already matured. The current research aims to fill this gap in the literature with empirical evidence regarding the feasibility of the PSM in these two cases. The insights of this research will define how a company can protect itself from generating losses and deterring customers' WTP, as well as determine at what stage of a brand's lifecycle the technique shows the highest effectiveness.

2. Method

The aim of the empirical research is to determine when the PSM displays the highest feasibility in finding the optimal price point (OPP), while taking into account the brand awareness and brand lifecycle stages in the market. The study evolves around three products of focus: Ziede cream for young and problematic skin, Ziede cream for mature skin and Jamieson "Vita-Vim" vitamins. The products were selected according to three criteria: product category, consumer segment and brand lifecycle. The first two products of choice – Ziede creams for young and mature skin – belong to the skincare products group. The Ziede brand was recently introduced to the market and is at the Introduction faze of its lifecycle. The third product, representing the vitamins group, belongs to Jamieson brand, which has been introduced in the Lithuanian market in 2007 and has already reached maturity. In order to detect the difference in effectiveness of the PSM for the three products, the authors differentiate the optimal price point (OPP) for the common sample in optimal prices as assessed by consumers that are familiar with the brand (OPP_f) and by consumers who are unfamiliar (OPP_u).

In order to obtain the information about the optimal price, the authors chose a quantitative structured survey data collection approach. Since the collected data can be compared across the entire sample, the survey method allows conducting a meaningful analysis. Moreover, survey is the best way to collect authentic data when the objective sample is too large to be observed directly. The selected survey type is a direct electronic survey according to the prepared questionnaire with four standardized PSM questions. Additional demographical questions aim to draw the profile of the respondents, as well as separate them into two groups. The first group consists of respondents that are familiar with the brand, while the second group – of those who did not know about the brand before. The respondents were chosen according to a random and convenient selection process. In order to ensure the proportional representativeness of obtained results, the convenient selection process was carried out to survey respondents who are more likely to purchase the products in focus.

The first two products belong to a new line of cosmetics brand, Ziede, which was introduced to the Lithuanian market since March 2013. These are the cream for mature skin and cream for young and problematic skin. The survey data was collected 6 months after the inception of the new brand line. The third product included in the research are the "Vita--Vim" vitamins, under the Jamieson brand, officially distributed in Lithuania since 2007.

The target population is all girls and women in Lithuania from 11 to 50 years old. The sample consisted of 175 female respondents, out of which 97 respondents (55%) are familiar with Ziede brand, while the other 78 respondents (45%) were not. 119 respondents (68%) have previously encountered the Jamieson brand, while 56 (32%) have not. 13 (7%) of the respondents were under 18 years old, 43 respondents (25%) – between 19 and 25 years old, 68 respondents (39%) – between 26 and 35 years, and 51 respondents (29%) – between 36 and 50 years old.

The following questions are at the core of the PSM engaged in this study's methodology, as used by Roll *et al*. (2010):

1. At what price would you consider the product to be so expensive that you would not buy it? (Too expensive)
2. At what price would you consider the product to be so inexpensive that you would feel concerned about the quality? (Too inexpensive)
3. At what price would you consider the product to be starting to be expensive, but you would have to give some thought to buying it? (Expensive)
4. At what price do you perceive the product to be a bargain – of a good value for the money? (Inexpensive)

The method aims to derive four points of intersections of the price curves:

1. The Indifference Point (IPP). The number of participants who consider the product to be expensive is equal to the number of participants for whom the product is inexpensive;
2. The Point of Marginal Cheapness (PMC). The number of participants who consider the product to be expensive is equal to the number of participants for whom the product is too inexpensive;
3. The Point of Marginal Expensiveness (PME). The number of participants who consider the product to be too expensive is equal to the number of participants for whom the product is inexpensive;
4. The Optimal Price Point (OPP). The number of participants who consider the product to be too expensive is equal to the number of participants for whom the product is too inexpensive.

3. Results

The price curves and their intersections for each product category are presented in the figures below. It is common to consider the prices between PMC and PME as being a suitable price range. According to Roll *et al*. (2010), most of the products are typically priced within this range. The OPP is the price the producers strive to in order to increase the demand for their product and, therefore, increase their profits. Since the aim of our research is to apply a new approach to the classic PSM by splitting the sample according to respondents' awareness of the Ziede and Jamieson brands, our research produces two OPPs for the two different categories of respondents. The difference between the two shows the consumers' assessment of the brand value.

Figure 1 shows the responses collected from consumers that are familiar with Ziede, including former customers of the company. It can be observed that consumers do not look for the cheapest products for young skin. Indeed, according to the survey results, they try to match the price they can afford with a natural, effective, and well-recommended product. The acceptable price range for this product category lies between 27 Lt and 40 Lt, while the optimal price is 35 Lt.

A different situation is observed after collecting the responses from consumers that were not familiar with Ziede. The results met the expectations that a person who is unaware of the brand, tends to underpay the product.

In Figure 2, one can observe that the optimal price consumers would be willing to pay is only 25 Lt. The figures are rather indicative: the PMC shows the threshold – 24 Lt, below which consumers would associate the low price with low quality and would not consider buying it, while prices above the PME (45 Lt) are considered to be overstated. Since the purpose of the research is to determine how consumers price the brand, it is expected that the

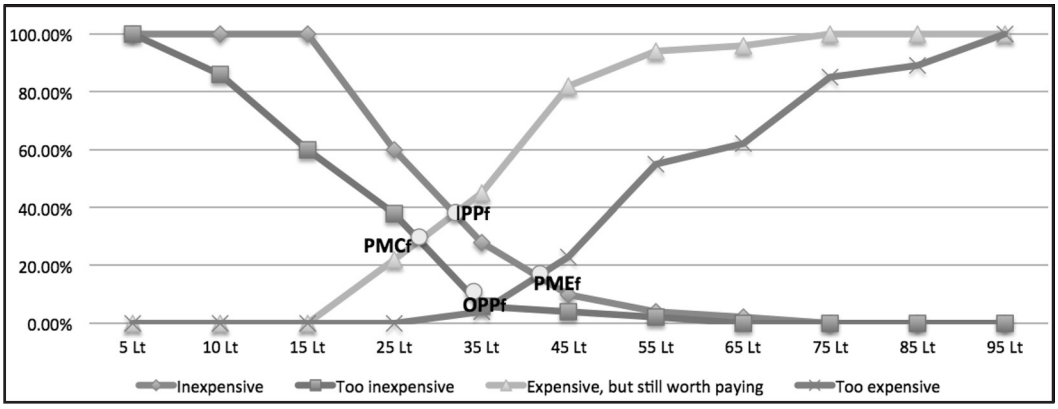

Figure 1 Price curves and their intersections for Ziede cream for young and problematic skin, respondents familiar with the brand. Source: Authors' own study.

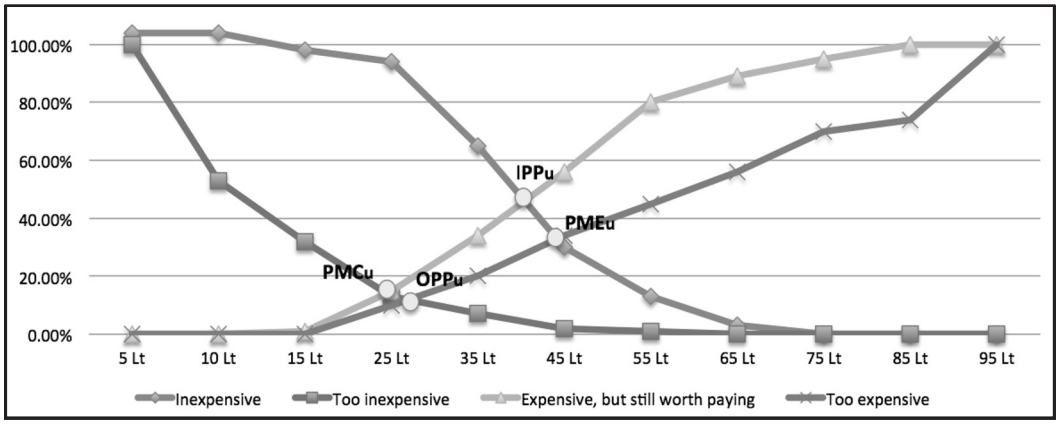

Figure 2 Price curves and their intersections for Ziede cream for young and problematic skin, respondents unfamiliar with the brand. Source: Authors' own study.

difference between OPP_f and OPP_u will show the value of the brand. The difference of 10 Lt in Ziede's case accounts for the value of Ziede brand from the consumers' perspective.

The second product of focus, Ziede cream for mature skin, displayed quite similar results as the first one. The group of respondents familiar with the brand on average priced the product higher than the unfamiliar respondents' group. Figure 3 displays the price curves and their intersections for Ziede cream for mature skin, depicted for the group of respondents that are familiar with the brand. With prices ranging from the low end of 42 Lt to a high end of 62 Lt, the cream was evaluated as being optimally priced at 59 Lt. Since the optimal price point is situated closer to the point of marginal expensiveness, it is reasonable to conclude that consumers are objectively pricing the product according to its quality and are ready to pay a significant premium in exchange for an organic, authentic skincare product.

As expected, the group of respondents unfamiliar with the brand assigned the product a lower optimal price, of only 52 Lt, than the other group (see Figure 4). Surprisingly, the high-end of the price range depicted by the respondents is 75 Lt, while the low-end is 46 Lt. This shift of the price range might be explained by the different profile of the survey respondents. The difference between optimum price points for the two groups is significant and indicates upon the perception of the brand value from a customer's perspective.

So far we have observed that for an emerging brand, the PSM was able to detect noticeable mispricing, by comparing the optimal prices denoted by

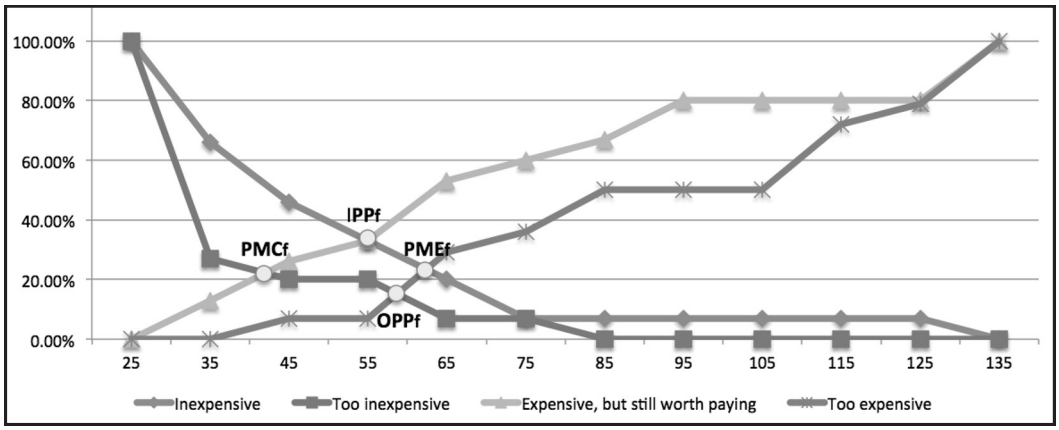

Figure 3 Price curves and their intersections for Ziede cream for mature skin, respondents familiar with the brand. Source: Authors' own study.

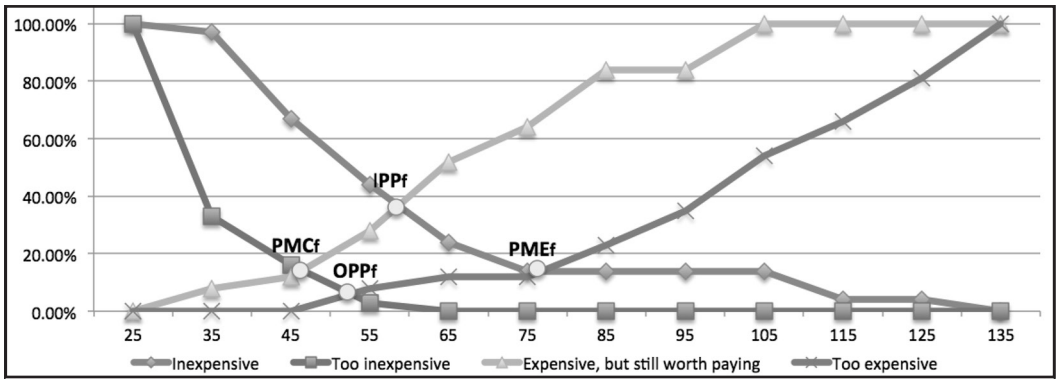

Figure 4 Price curves and their intersections for Ziede cream for mature skin, respondents unfamiliar with the brand. Source: Authors' own study.

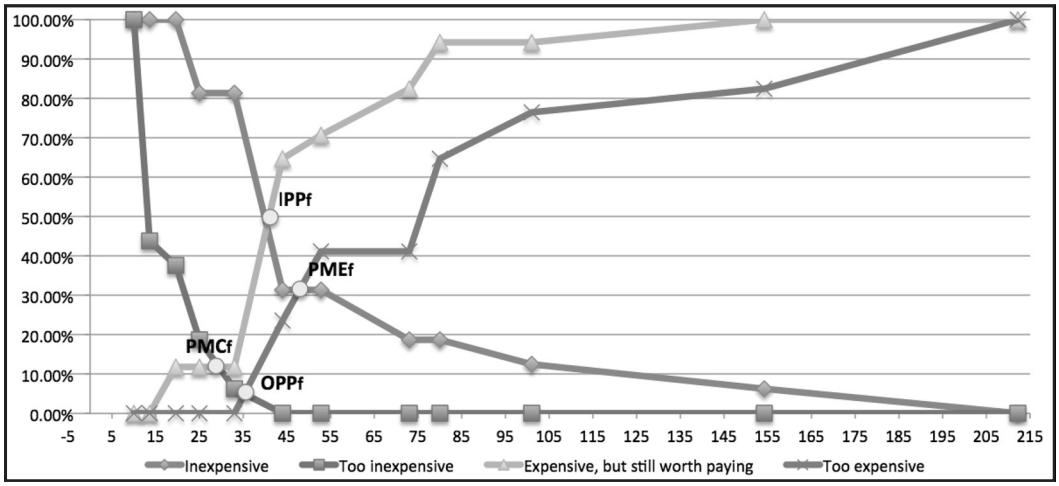

Figure 5 Price curves and their intersections for Jamieson "Vita-Vim" vitamins, respondents familiar with the brand. Source: Authors' own study.

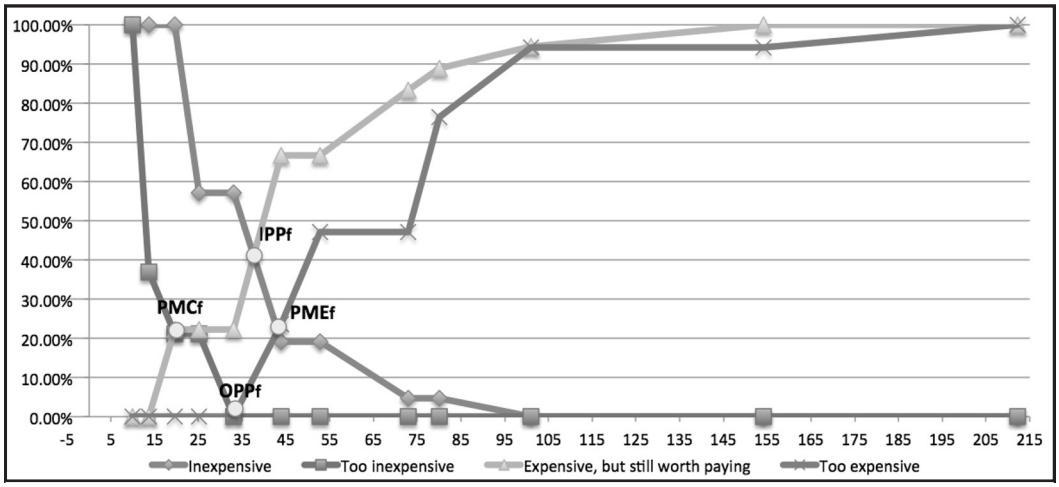

Figure 6 Price curves and their intersections for Jamieson "Vita-Vim" vitamins, respondents unfamiliar with the brand. Source: Authors' own study.

the consumers that were familiar with the brand and those who were not. However, by applying the same methodology to an established brand, the effectiveness of the PSM suffered a sharp drop. The empirical research showed that, as the brand moves further through its lifecycle, it frames the consumer's perception of price, regardless of whether the consumer has previously owned this brand's product or not.

The third reference product, "Vita-Vim" vitamins, belongs to Jamieson brand, which was distributed in Lithuania for the first time in 2007. While the brand was around for several decades and became notorious around the world, it was established in Lithuania for a long enough period to be representative for the present research. In Figure 5, one can see that the price range assigned for the product lies between 30 and 49 Lt. The optimum price point is at 35 Lt, which, in the context of the price range, shows that consumers tend to underpay the product. While these results give some understanding about the price perception of consumers, a more interesting perspective can be analyzed by looking at the same results for the group of respondents unfamiliar with Jamieson brand.

Not surprisingly, the range of acceptable prices shifted towards zero for the second group of respondents, lying now between 20 and 44 Lt. What's more interesting, the optimum price point did not shift significantly, being at 33 Lt. The difference of 2 Lt between the optimal prices as determined by the two groups of respondents is not conclusive enough to justify the application of the PSM. While this discrepancy indicates upon the premium the consumers pay for the brand, it is too small to affirm that PSM was effective in detecting mispricing in such case, since the difference could have happened by pure chance or measurement errors.

4. Discussions

The empirical results led to insightful observations regarding the initial hypotheses about the effectiveness of PSM in determining the optimal price at different stages of a brand's lifecycle. For the first product in focus, Ziede cream for young skin, it was determined that, although consumers are willing to pay a premium for an organic skincare product, there is a discrepancy between the optimal price perceived by consumers who are familiar with Ziede from the price as seen by consumers who are unaware of the brand, and this difference is significant. According to the results, this discrepancy of 10 Lt represents the value of the brand as seen by the consumers.

If the survey respondents were pooled together, the optimal price would be 31 Lt. At this price, the consumers that are familiar with the brand would still buy it, as the price is even lower than their optimal price of 35 Lt. However, the consumers that are unfamiliar with Ziede would not buy the product, since their optimal price is still much lower than 31 Lt. Therefore, by setting the optimal price at 31 Lt, the company would have a loss of 4 Lt per unit, while not increasing its customer portfolio to the extent it could if, instead, it would set the optimal price at 35 Lt and invest in brand communication to lower the price sensitivity of the consumers that are unfamiliar with the brand. The results confirm the initial expectations that the OPP_f would be higher than OPP_u. The difference in the optimal prices (4 Lt) is the price that the consumers are willing to pay for the brand itself, which also assesses the brand value. Differentiating the optimal prices across the two groups of consumers helped to define the value of the brand as perceived by consumers. Therefore, if Ziede's goal is to have a sustainable brand, the price should be set according to the brand-aware consumers' estimation.

Similar to the case of the first product of focus, the optimal price point for Ziede cream for mature skin was situated closer to the marginal expensiveness point, indicating upon consumers' readiness to pay a premium price for a high-quality, authentic product for skin.

Clearly, the research allowed seeing that mispricing can be detected when applying the PSM to a brand product in its early lifecycle stage, as compared to one that is already established and has managed to build awareness among consumers. As the brand grows older, the price perception of consumers is skewed.

Finally, when analyzing the third product in focus, Jamieson "Vita-tim" vitamins, a discrepancy of only 2 Lt was detected after collecting data from the two groups of respondents. Such a small difference is insufficient to support the hypothesis that it should happen as a signal of brand value. The discrepancy of 2 Lt could as well have happened by mere chance or research model errors.

Conclusions

Over the decades, the PSM has been a common approach to define consumers' willingness-to-pay and assess their knowledge about price. Despite that, it has encountered critique regarding its mathematical interpretation, as well as its usefulness in brand ma-

nagement. Empirical evidence lacks recommendations on implementing the PSM at the right stage of a brand's lifecycle, in order to detect mispricing most effectively.

The present empirical research has shown the applicability of the PSM in determining the optimal price aimed to sustain the value of a brand by differentiating the OPP assessed by the common sample of respondents into OPP_f and OPP_u. By separating the sample of the survey respondents who are familiar with Ziede and Jamieson brands from those who are not, it was possible to assess the optimal prices for each category and understand to what extent consumers value the brands. The discrepancy between the optimal prices across groups accounts for the incorporated premium that reflects consumers' perception of the brand value.

Since price is a very important indicator of the brand value, the optimal prices for both consumer groups are quite insightful. The implications of Salamandic, Alijosiene, and Gudonaviciene (2014) suggest that the price should be set in accordance to the opinion of consumers that incorporate their estimation of the brand value into their optimal price. Failing to do so and averaging the optimal prices from the two groups of consumers instead would cost producer lost profits and destroy the brand image. However, the more people become familiar with the brand, the faster they become accustomed to the prices that are typical for a particular brand. As the brand moves down the lifecycle, the PSM becomes an ineffective tool to detect mispricing errors, due to the fact that the consumers become less price-sensitive, explained by brand loyalty, established image and reputation, *etc*.

Despite valuable insights that stem from the proposed improvement of the classic PSM, our study confronts some limitations that require further research. One of these reflects the inability of PSM to account for brands' competitiveness. Roll et al. (2010) suggests a conjoint analysis as a potential solution for this problem, as consumers typically estimate the optimal price they are willing to pay for a product depending on the available substitute products. Combining PSM with a more quantitative technique can also help us to derive a the profit maximizing function for a given sample, at the same time complementing it with the proposed extension for a brand management approach used in this research.

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