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***Research paper***



# Customer Loyalty and its Influence on Price Wars' Intensity in the Indonesian Lighting Industry

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**Abstract**

Several aspects of consumer behavior can increase the likelihood of price conflicts where organizations are subsequently influenced to engage in price wars. As the main aspect of business activities relates to the success of financial transactions, customer loyalty and price sensitivity becomes a decisive factor that defines market characteristics in the long run. Using quantitative survey data from respondents in the Indonesian lighting industry, this research is aimed to generate an understanding of how practitioners view their customer's characteristics in relation to competitive interaction. The study found that within the context of competition, firms regard loyalty and sensitivity to be influenced by sufficient acceptance of price positioning strategies.

***Keywords***: *Price Wars, Customer Characteristics, Brand Loyalty, Price Sensitivity, Lighting Industry*

## 1. Introduction

Previous theories of price wars attribute the condition as the result of low prices influenced by unexpected demand shocks (1,2), where tacit collusion among firms are supported by a trigger price strategy (3). While most literature often discuss the conditions within the context of internal firm conditions (4–9) and external conditions(10–14), real-time competitive interactions are defined by customer's acceptance of price prior to transactional completion.

Customer characteristics are defined by Heil and Helsen (15) as the collective construction of brand loyalty and price sensitivity in a larger market. Subsequently, firms are required to serve their customers according to these two important traits in order to gain sufficient market share. As customers are located at the receiving end of a firm's service output, our overall market structure is shaped and defined by their collective agreement to accept or reject the services offered to them. Brand loyalty and price sensitivity in its basic sense become the indicator to ensure success in gaining customer trust (16).

However, managers tend to overlook the importance of dynamics within these two important aspects and often emphasize only on short-term accomplishment through changes in price (17–19). The results of these actions are often devastating because with respect to customer acceptance, price actions tend to affect and alter their loyalty (20) and switching behavior (10,12,17).

This paper answers to the need for empirical research on the topic of price wars and competitive dynamics, especially within the context of the Indonesian lighting industry. As various research previously focus on price wars that occur in Europe (19,21–23) and the US (10,24–26), results presented in this paper will become an addition to the topic together with other research in regard to similar conditions that occur in Asia (27,28).

The Indonesian lighting industry was chosen due to its unique characteristics. Unlike common generalization in the grocery industry (22) and the tobacco industry (10), consumers in the lighting industry can be structured according to their product utility preference, subsequently creating diverse segments of application with different levels of loyalty. Price sensitivity in this industry is also driven by the standard established by the industry's market leader, where customers adjust their price acceptances according to the value they can obtain through leading products. Nevertheless, the commoditization of light brought certain limitations to the industry because performance is often directly entangled to specific pricing strategies. As the lighting industry has matured for some time since the birth of Edison's incandescent bulb in the late 1800s, light itself has become the source of commercial profit where firms contest each other to gain a larger share of the market (29).

Using the framework of customer characteristics introduced by Heil and Helsen (15), two main variables of loyalty and price sensitivity are presented here as the independent variables that affect the intensity of price wars. These variables are later defined further in smaller dimensions in order to ease measurements. Further explanation in regard to these different dimensions is presented later in the paper, together with literature discussion and its connection to research results.

## 2. Literature Review

Referring to several sources and based on certain customer characteristics, price wars are the result of conditions where firms are competing to gain customer's trust in order to secure their market position. Because our contemporary market structure no longer postulates transactions to happen in isolated conditions, economic achievement is consequently defined by the strength of long-term relationships between customer and supplier which evolve over time (30). Loyalty and sensitivity towards price, therefore, become a volatile aspect of a business that firms need to maintain on a continuous basis in order to ensure future performance.

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### 2.1. Loyalty

Described as an unswerving devotion, loyalty is a faithful description that is difficult to achieve in the context of commercial activities (31). Previous literature has define loyalty in multiple behavioral dimensions. At its core, loyalty has been associated with purchase or repeat purchase intentions and actual purchase behavior, as well as tolerance towards price and propensity to make additional purchases from the same source (32). A behaviorally loyal customer therefore may be spurious or deceptively loyal, as they tend to stay with a specific provider until they found better supply alternative (33). In the certain cases where consumer perceives little information among brands, purchases are repeated on the basis of situational cues such as familiarity or special deals (i.e. price discounts). Based on this understanding, loyalty can also be described using the concept of inertia (34).

When discussed in a competitive environment, the correspondence between relative attitude and repeat patronage has the potential to inflict conflict as firms attempt to gain sales momentum by commanding loyalty (33). In the absence of competitive advantage, loyalty can be used by smaller firms to decrease perceived differentiation with the leading brand (35). However, enhancing relative attitude is often viewed as unfeasible and firms tend to increase customer's spurious loyalty through manipulating other transactional and situational factors such as price and promotion (36). Especially in the case of products with low durability level, high replenishment rate, and common homogeneity, consumer loyalty can be induced through specific programs that divert attention from attitudes to characteristics of the purchase context (33).

Building awareness to generate loyalty often take considerable time and are difficult to assess (11,13). As companies usually conduct their operational activities within a pre-defined time period, the price variable is frequently used by managers as a resolve to generate immediate performance results (17,37). In a competitive context, brands with smaller market share have been previously found to use price in the effort to induce loyalty (19,36), where consumer are often persuaded to reconsider their preference and choices through direct price offering (38). Because brand loyalty is believed to be the expected result of price promotions (39), firms often use price cuts as a defensive move in response to increasing competition from other brands (36).

However, a common misunderstanding occurs when companies deviate prices to achieve short-term objectives while creating incentives for customers that will undermine future sales (40–42). While there are many reasons why managers decide to exploit prices in the market, competitive interactions that lead to the eruption of price wars tend to be the result of negative judgement in regard to market information (17,19). As precise informational evidence are often difficult to obtain (43), lack of positive information will cause firms to act conservatively and respond to rivalry through irregular actions (44,45).

Based on these arguments, it is difficult nowadays to view loyalty from the context of customer intention and behavior as it has been regularly proven that these two aspects of consumer characteristics are subject to commercial manipulation in every transactional setting. Since loyalty is operationalized as the minimum price differential needed before consumers who prefer one brand switch to another brand (36), it can be argued therefore that in situations where brand loyalty are low, customers can be easily lured by price cuts (15).

### 2.2. Price Sensitivity

in the case of price wars, customer price sensitivity was found to be measured based on overall price image (22). Because price wars constitute market disruptions, it has direct effect on consumer spending and leads to increase in price sensitivity (23). In the short run, consumers will be faced with increased uncertainty in regard to their previous purchase value and likely to adopt risk-reducing strategies in their future purchase (46). In cases where purchase activities can be conducted with several sellers across different stores, consumers tend to redistribute their transactions to increase the probability of obtaining the best possible deal (47). As the price variable offer immediate results in performance (15,17), sudden price reduction in comparison to its common market standard will induce consumer perception where instant monetary savings can be attained to their benefit (48).

Reduction in spending is inevitable because price wars lead to lower prices while distributed quantities remain the same. In contrast to the short-term effect of a sudden price cut, transactional redistribution induced by price sensitivity do not offer the promise of future performance since purchase activities are bounded within the limits of customer consumption. An example of this condition could be found in the grocery industry, where an extreme increase in overall food consumption in a particular family household is unlikely, even when prices substantially drops (22).

The success of price eventually depends on the moment where a transactional decision has been made. In several different settings, customers decline to be engaged in purchase commitment due to the fact that better prices can be obtained elsewhere (40). This indicates that sensitivity in price is driven by informational attainment and knowledge acquirement, which in practice creates the consumer's overall construct of price sensitivity. As pricing interactions occur at a faster rate during periods of price wars (15), the barrier to access price information at the customer's end eventually decreased while the importance of price as an attribute of purchase increased (49).

Based on these arguments, price wars between sellers enhances consumer reliance on the actual price objectives that sellers offer and their subjective overall price appeal (22). While the objective of price is to determine the value of a particular product in a particular period (40), subjective appeal to price is more stable over time and develops moderately through incremental acceptance of information in regard to short-term transactions (22,50). Consumer's price sensitivity, therefore, also leads to the consumer's perceived price positioning of sellers which has been found to influence transactional selection (51,52).

## 3. Methodology

This study was conducted using primary data gathered from professionals in the lighting industry with a minimum two-year experience and holds a managerial position in their respective companies. To ease data collection, questionnaires were prepared digitally and distributed through electronic means. While the traditional hard-copy survey was previously considered to be better in providing responses (53), changes in population demography have enabled electronic and paperless survey to deliver responses in a much faster rate (54). It is also believed that as professionals become more proficient in using new technologies, the electronic method has become a more prevalent survey tool in today's contemporary setting (55,56).

Since price wars could be considered as the collective response and reactions to actions implemented by various decision makers, a breadth of managerial positions were included in the survey to ensure the topic can be observed from various different perspectives. Although not all respondents are directly involved in the day-to-day activities related to sales and marketing, several individuals hold managerial positions which influence policies that have been and will later be adopted by the market. Based on the initial sample requirement and other than sales and marketing managers, managerial positions of the respondents in this survey includes financial controllers, channel directors, supply chain managers, quality managers, product managers, project champions, and customer resolution managers.

A set of a questionnaire with 31 questions was prepared, uploaded digitally using Google Forms, and later sent through e-mails and WhatsApp mobile application to 63 respondents. The effort yields

a 90% response rate as 57 fully answered questionnaires were returned within seven working days. Measurement items were gathered from related literature and used as a reference to the questionnaire's design. Loyalty was defined by arguments of customer's value in relation to their emotions (57,58), product functionality (59,60), price (36,59,61,62), and social self-concept (57,63). In regard to price sensitivity, indicators were defined by arguments of customer knowledge (40,64,65) and customer sensitivity (20,47,66).

The questionnaire was prepared as a set of statements that are used as an outline of an operational indicator. Responses are gathered and evaluated using a five-point Likert scale, where a low number (begins with 1) represents *disagreement,* while higher numbers (ends with 5) represents *agreement.* The respondent's demographic background was later analyzed separately from the primary model and only used in the confirmatory phase of the study. To ensure questionnaire validity, a preliminary pre-test was conducted to five individuals prior to the actual survey distribution. Several items were altered and questions were simplified to increase clarity in response and avoid misunderstanding from the respondents.

## 4. Findings & Discussions

Once all returned questionnaires have been gathered, the data were directly analyzed using SmartPLS 3.0 software, where several items with a loading factor lower than 0.6 were removed. Results of reliability and validity test from the second calculation revealed that the remaining item's outer loadings exceed 0.7, except for several items under loyalty and price wars, which only yield results above 0.6. Although the results of Cronbach's α are considerably high for price sensitivity (0.815) and price wars (0.805), a similar result for loyalty cannot be derived (0.644). Nevertheless, it has been previously argued by Hair, Hult, Ringle, and Sarstedt (2014) that PLS-SEM prioritizes the indicators according to their individual reliability, and Cronbach's α assumes that all indicators are equally reliable. This argument was also considered because some variables have more indicators than others. In cases like this, Cronbach's α sensitivity to items number in the scale become prone to internal consistency reliability underestimation (67).

Several literature suggest solutions to this issue by using composite reliability to measure internal consistency. While Cronbach's α measure indicators based on equal reliability, composite reliability takes the variable's indicator outer loading difference into account (67,68). As values of 0.60 to 0.70 are acceptable for exploratory research, results of composite reliability calculation yield better numbers: 0.776 for loyalty, 0.890 for price sensitivity, and 0.859 for price wars, respectively.

The calculation results for the average variance extracted (AVE) for the loyalty variable, however, fall slightly below the acceptable threshold of 0.5 (68,69). This indicates that the convergent validity for loyalty may not be strongly related to its other measures of constructs, as theoretically predicted. Nevertheless, several studies have previously argued whether results below 0.5 should still be considered useful to be used in the analysis (70–72), while others suggest the contrary (68,73).

In respect to this issue, Fornell and Larcker (1981) provide their supporting arguments to contemplate adequacy results of calculations by taking the composite reliability results into account. While 0.5 has become the commonly acceptable AVE threshold, lower results can still be considered acceptable given the composite reliability results are higher than 0.6. An argument in regard to the diversity of results in strategic management studies was also put forward by Hulland (1999), where considerable variability in measurements and theoretical assumptions can provide researchers to achieve new insights. As for this study, the decision to include loyalty as part of the study is ultimately based on its exploratory nature. Although AVE results for loyalty only yields 0.465 and much lower in comparison with price sensitivity (0.731), the composite reliability calculation result for loyalty yields 0.776 and can be considered as satisfactory.

On the contrary, the results of discriminant validity have produced values greater than other correlation values among the latent variables. As individual variables, loyalty (0.682), price sensitivity (0.855), and price wars (0.711) have been adequately discriminated. The evaluation shows that all indicators initially designed to measure theoretically different concepts are accurate and does not correlate with one another. This is an important part of the research as customer characteristics were defined only by two variables, whereas price wars as a collective has been considered to be the result of several different antecedent variables (15). These indicator items can be considered sufficiently significant in the effort to understand the relationships between customer characteristics and price wars intensity. As a substantial amount of indicator has been dropped from the original questionnaire, it becomes essential for the remaining indicators to be able to represent both variables as a theoretically separate entity, in order to provide sufficient understanding to the topic in discussion.

Based on the initial results of the reliability test, eighteen indicators in the questionnaire were removed from the original thirty-one. The remaining thirteen indicators are used to determine the influential effects of customer characteristics in regard to price wars intensity. From 57 respondents, 26 (45.6%) primarily works in the traditional (business to consumer) trade segment, while the remaining 31 (54.4%) largely spends most of their career in the professional (business to business) trade segment. As the Indonesian lighting industry can be structured according to utility needs (general or advance illumination) and application functionality (specific product for specific usage), differences between segments also bring different customer perspectives in regard to loyalty and sensitivity in price.

Although firms in the two segments may not experience the same level of loyalty from their customers, results of the analysis have managed to establish paths and valid relationship in the model to show that common view of customer characteristics in regard to price wars is shared among them. Customers in both segments are usually considered to be price-sensitive rather than spuriously loyal, due to the fact that product selection is often homogeneous and available to be obtained from various different sellers.

Nevertheless, while most respondents regard price as one of the most effective promotional tools that can be used to win customers, the competitive comparison in price between brands was not considered as a decisive variable that affects customer's level of loyalty. Price sensitivity in this sense only works in an intra-brand context, and may not be entirely successful to be used in an inter-brand competitive interactions. While previous findings in other industries have mentioned that consumers can be lured to purchase less-known brand through the aid of price promotions (36,58,59), customers in the lighting industry are considered to have sufficient brand knowledge are well aware of the consequences brought by their decision in product selection. Spurious loyalty in this sense can be argued as the result of the customer's price sensitivity which surprisingly occurs subsequently after purchase intention has been made, in the form of seller selection. Seen from this perspective, price wars in the Indonesian lighting industry can be considered as the outcome of sustained irregular competitive actions made by firms who sell similar products under the same brand, in order to not to increase overall market consumption but rather, as an evidence of performance.

Figure 1 shows that the coefficient of determination ($R^2$) for price wars as the endogenous latent variable is 0.421. This explains that the exogenous latent variables (loyalty and price sensitivity) moderately explain 42.1% of the variance in price wars. Meanwhile, the inner model suggests that price sensitivity (0.440) has the strongest effect to price wars, while the hypothesized path relationship between loyalty (0.355) and price wars in comparison is statistically less significant. Based on these results, we can conclude that sensitivity in price is a strong predictor of price wars while customer loyalty only moderately affects its intensity.

**Table 1:** Results summary for reflective outer models

| Latent Variable | Ind. | Items | Outer Load. | Reliability (Loadings²) | Composite Reliability | AVE |
|---|---|---|---|---|---|---|
| Loyalty | LY5 | Brand loyalty are defined through product durability | 0.652 | 0.4251 | 0.776 | 0.465 |
| | LY6 | Brand loyalty are derived from product utilization and fulfillment of user requirement | 0.777 | 0.6037 | | |
| | LY7 | Brand loyalty are formed through service satisfaction | 0.652 | 0.4251 | | |
| | LY8 | Brand loyalty are formed when product deliver greater value to the consumers | 0.638 | 0.4070 | | |
| Price Sensitivity | PS1 | Price promotions are required to induce brand loyalty among consumers | 0.896 | 0.8028 | 0.890 | 0.731 |
| | PS2 | Price can be used to "purchase" consumer's brand loyalty | 0.906 | 0.8208 | | |
| | PS3 | Consumer loyalty is determined by price comparison between products or brands | 0.756 | 0.5715 | | |
| Price Wars | PW4 | Consumer loyalty determines a product's selling price | 0.647 | 0.4186 | 0.859 | 0.505 |
| | PW5 | Consumer loyalty determines a seller's profitability rate | 0.689 | 0.4747 | | |
| | PW7 | Customer knowledge of past product price affects the product's rate of sale in the future | 0.717 | 0.5141 | | |
| | PW8 | Price information obtained by consumers reduce seller's profitability rate | 0.769 | 0.5914 | | |
| | PW9 | Ease of price information retrieval at the consumer's end limits seller's profitability | 0.704 | 0.4956 | | |
| | PW10 | Ease of price information retrieval at the consumer's end influence rivalry among sellers | 0.733 | 0.5373 | | |

**Table 2:** Criterion analysis for discriminant validity

| | Loyalty | Price Sensitivity | Price Wars |
|---|---|---|---|
| **Loyalty (LY)** | **0.682** | | |
| **Price Sensitivity (PS)** | 0.323 | **0.855** | |
| **Price Wars (PW)** | 0.498 | 0.555 | **0.711** |

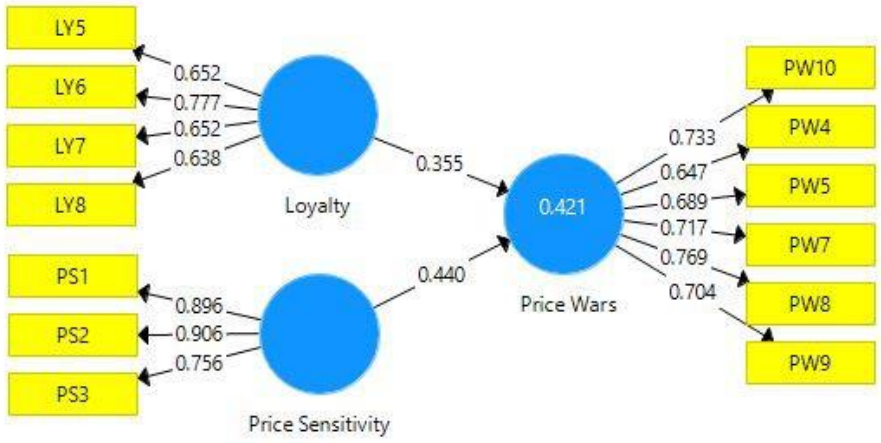



**Figure 1:** Research Model – Customer characteristics and its effect on price war intensity

Nevertheless, as this current research only studied variables with direct influence on customer behavior, further research into other antecedents of price wars needed to be conducted. Findings also indicate that customer's perceptions of monetary sacrifice compliments the functional form of value perceptions. As a result, in conditions where transactional interactions have manage to construct purchase commitment from the customer, it is important for sellers to isolate specific economic traits in the form of either price or intrinsic product information to leverage customer loyalty.

## 5. Conclusion

Results of the study show that loyalty is yet another aspect that can be influenced by promotional activities made with the aid of price. While it is difficult to predict the exact moment of price wars in the Indonesian lighting industry erupts, statistical calculations have shown that the industry's competitive interaction is currently dictated by consumer's price acceptance. As loyalty is a spurious behavior possessed by the customer subsequent to purchase intention, findings in this study are consistent with arguments that price sensitivity leads to consumer's perceived price positioning of sellers and eventually influence their transactional selection (51,52). In support of this condition, recent reports have confirmed that customer loyalty may not be an issue in the Indonesian lighting industry as the role of market leader has been continuously performed by a single brand (75,76).

The purpose of this research nevertheless is to understand which customer characteristics have the potential to influence the intensity of competition in price. Based on the statistical results, firms can improve their competitive positioning and ease friction in price competition by understanding the relationships between price sensitivity, loyalty, and price wars. Through a survey of key personnel in the Indonesian lighting industry and the subsequent structural equation modelling in SmartPLS, important customer characteristics that lead to price wars has been identified. Results strongly suggest that firms should focus on creating competitive promotional offerings based on price positioning strategies, in order to induce loyalty to the sellers, and not necessarily the brand itself.

While this empirical study has clarified certain aspects of price wars that can be seen from the perspective of customers, it can be argued that this research remains bounded in various limitations. Future studies in regard to other antecedents of price wars have to be analysed further, as previously suggested by Heil and Helsen (15), in order to gain a complete understanding of the phenomenon. Especially for the Indonesian lighting industry, this research could be used by practitioners as tools to analyse the effects of price and value of service they offered to the customers. Although it has been indicated that several indicators are clearly beyond the

scope of internal firm control, purchase intention and transactional commitment can be derived from acceptance of price which ultimately, delivers success in performance.

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