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Customer Segmentation as a Revenue Generator for Profit Purposes

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Abstract: The role of market segmentation in shaping pricing strategies for new products is critical. This study highlights the significance of tailoring pricing decisions in meeting the unique needs, preferences, and price sensitivities of different consumer segments in order to maximize profitability and market penetration. Understanding customer behavior and preferences in transitioning from high to low prices during new product introductions is crucial. The responses of various customer groups to price changes are essential in influencing product innovation. The model developed in this study serves two purposes: (1) to determine the optimal time to switch from high to low prices, and (2) to determine the optimal price discount when switching from high to low prices for different customer segments. Segmented marketing results in larger profits due to increased sales to loyal customers. However, deal-prone customers may purchase less when segmented.

Keywords: segmentation; loyal customers; deal-prone; discrimination; intertemporal price

MSC: 91B50; 91B38; 91B42; 62P20

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1. Introduction

In the dynamic landscape of marketing, the strategic pricing of products plays a pivotal role in shaping consumer behavior and maximizing profitability.

Pricing strategy and its impact on consumer behavior have been extensively studied and discussed in both real-world marketing practices and the academic literature. Marketing scholars and practitioners alike have explored various facets of this dynamic process, aiming to optimize pricing strategies in order to achieve the goal of profit maximization [1].

1.1. Price Changes during Product Introduction to the Market

In the realm of consumer electronics, companies such as Apple have mastered the art of introducing new products at premium prices. For instance, when a new iPhone model hits the market, early adopters and brand enthusiasts eagerly purchase it at a high price point. These "loyal" customers value the latest features and are willing to pay a premium for the innovative technology. This initial pricing strategy not only caters to brand loyalists but also serves as a revenue-maximizing tactic [2]. However, as time progresses and competition intensifies, the price of the new iPhone gradually declines to attract a broader customer base, including those who prioritize affordability.

As time passes and market saturation looms, companies often implement price reductions to attract a broader customer base. This shift in pricing strategy appeals to a different segment of consumers, often referred to as "deal-prone" customers. These individuals are price-sensitive and may have been initially deterred by the high cost but are now enticed by the lowered price point [3].

Another example of launching new products at high prices is the electric vehicle (herein: EV) market, which demonstrates the challenges and tactics used by manufacturers to cater to different types of consumers [4]. This instance can provide insight into the intricacies and subtleties of switching prices from high to low, a critical aspect of marketing in the age of innovation and with the evolution of consumer preferences [5].

When a new EV is introduced to the market (see for example the case of Tesla [6,7]), it often comes with a relatively high price. This high price is typically set to target loyal customers or early adopters who prioritize environmentally friendly features and are willing to pay a premium for the latest technology and clean energy benefits [8–10]. The high initial price is justified by the inclusion of exclusive features, superior performance, longer-lasting batteries, and cutting-edge technology. This attracts customers who value these attributes [11]. During the initial phase, the manufacturer focuses on selling to environmentally conscious and brand-loyal customers who are willing to pay the high price for the premium product. This phase allows the manufacturer to establish a presence in the market and recover some of the initial development costs.

As time progresses, and the EV matures in the market, the manufacturer may consider reducing the price to attract a broader customer base, including deal-prone customers who are more price-sensitive. The price reduction strategy may involve offering discounts, incentives, or introducing more affordable EV models within the brand's portfolio [12,13]. With lower prices and more accessible options, the EV manufacturer can tap into a larger segment of the market. This includes customers who are concerned about the environment but prioritize the price more highly. The goal is to boost the volume of sales and to increase market share by making EVs more affordable and appealing to a wider audience [14–16]. The timing of the price switch from high to low prices is influenced by the product's lifecycle. This switch typically occurs when the product has reached a certain level of market saturation and competition has intensified.

Companies need to understand the diverse needs, preferences, and price sensitivities of different consumers in order to tailor their pricing, product quality, and marketing efforts to specific customer groups. This is crucial for maximizing profitability and market penetration while transitioning from high to low prices. Market segmentation, which involves categorizing potential buyers into groups based on common needs and responses to marketing initiatives, serves as a guiding framework for pricing decisions tailored to the unique characteristics of each segment (group). This ultimately influences the success of new product launches. By segmenting the market, marketers can target specific customer groups with pricing, product quality, and marketing efforts customized to their preferences and behaviors. This enables them to make informed decisions about when and how to effectively apply price discounts to different segmented customer groups. Therefore, market segmentation plays a crucial role in the transition from high to low pricing during new product introductions.

1.2. Market Segmentation

To elucidate the concept of market segmentation, consider for example a multinational fast-food chain like McDonald's. The fast-food industry employs market segmentation by identifying different customer segments based on behavior [17], demographic criteria, and cultural attributes [18]. For instance, they may target families with young children looking for kid-friendly meal options [19] or Generation Y students who are considered to be the key market segment in the fast-food industry, with significant purchasing power due to their lifestyle and eating habits [20]. At the same time, they might also target health-conscious consumers seeking specific menu choices [21]. These distinct customer segments have varying needs and preferences, demanding tailored marketing strategies, menu offerings, and pricing structures [22].

In the automotive industry, during new product launches, leading brands such as Toyota adeptly apply market segmentation [23]. Toyota strategically employs market segmentation not only to identify target customer segments but also to determine the

most effective pricing strategy for each segment. By carefully managing price transitions from the initial launch phase to broader market penetration, Toyota maximizes its ability to capture the full spectrum of potential customers and optimize the product's success in the market. This dynamic pricing approach allows Toyota to adapt and respond to changing customer preferences and market conditions over time. Toyota recognize that some customers prioritize fuel efficiency and eco-friendliness, while others seek powerful performance and luxury features. To accommodate these differing preferences, Toyota offers a range of vehicles, including hybrid models for environmentally conscious buyers and sports cars for performance enthusiasts. These diverse product lines and associated pricing strategies cater to specific market segments [24].

Market segmentation within the clothing retail industry groups consumers based on their consumer behavior, motivations, and psychographics [25]. A clothing retailer may segment its market based on age, gender, fashion involvement, and lifestyle [26]. They may offer different styles and sizes of clothing to appeal to different segments, such as athletic wear for younger customers, business attire for adult customers or luxury fashion to appeal to various customer preferences, such as ready-to-wear, haute couture, or limited-edition pieces [27]. Clothing retailers should align their price transitions during new product launches with their market segmentation strategies. By understanding the preferences and behaviors of each segment, retailers can set initial prices that resonate with their target customers and then adjust pricing strategies over time to optimize sales and profitability while maintaining customer loyalty and satisfaction.

Market segmentation is a crucial strategy for a global beverage company that introduces a new line of fruit-flavored soft drinks. Instead of applying a one-size-fits-all approach, the company conducts market research to identify different consumer segments based on factors such as age, taste preferences, and dietary choices. This segmentation reveals various clusters of consumers, including health-conscious millennials who prioritize low-calorie options, families seeking natural and sugar-free alternatives, and adventure-seekers looking for bold and exotic flavors [28,29]. The Global Beverage Company can use a dynamic pricing approach during new product launches to cater to different market segments. Pricing transitions should align with the perceived value of the product, the preferences of each segment, and the product's market positioning. By adapting prices over time and offering promotions strategically, the company can maximize sales and market penetration within each targeted consumer segment while maintaining customer loyalty and satisfaction.

Our paper delves into the intricacies of market segmentation in the context of price transitions during new product launches. We will explore the interplay between brand-loyal customers and deal-prone customers, examining how their distinct preferences and price sensitivities influence pricing strategies and ultimately impact profitability. Through theoretical modeling, we aim to shed light on the optimal timing of price switches and on the most effective price discount strategies for segmented customer groups. In doing so, we believe we are contributing valuable insights to the ongoing dialogue surrounding pricing strategies, customer segmentation, and profit optimization in the ever-evolving world of marketing.

Market segmentation and pricing have long been recognized as essential components of successful marketing strategies. The academic literature on market segmentation and pricing is rich and multifaceted and reflects the profound impact of these concepts on marketing strategies and business profitability. Scholars and researchers have delved into various aspects of segmentation, including geographic, demographic, psychographic, and behavioral segmentation criteria.

In the following section, we will review the key literature on market segmentation, pricing strategies, and their interplay, providing a foundation for the research presented in this paper.

2. Literature Review

2.1. The Importance of Market Segmentation

The concept of segmentation as a marketing strategy was first proposed by Smith in 1956. Smith's [30] most influential paper discusses the importance of product differentiation and market segmentation as strategies for firms to gain a competitive advantage. It entails dividing the market into subgroups with homogeneous needs and demands, even though the overall market demand is heterogeneous.

Haley [31] likens market segmentation to slicing a piece of bread, with segmentation being a process that divides a larger market into smaller sections based on one criterion such as age, gender, country of origin, family life cycle, etc. Each section is the slice of bread and has a different taste.

Market segmentation is a crucial tool in marketing strategy [32] and often viewed as the foundation for successful marketing strategies [33,34] in both domestic and global environments [35,36] within the context of the following aspects: marketing principles [37], maximizing profit [38,39], creating a competitive advantage [40], media planning and advertising [41], and B2B (business-to-business) marketing [42], as well as for marketing managers to make important decisions regarding product placement, pricing, quality, and design [43] through understanding consumer lifestyles, values, and attitudes [44].

2.2. Types of Market Segmentation

Markets can be segmented in various ways, including geographically, demographically (e.g., age, gender, income), behaviorally (e.g., prior product experience, frequency of purchase), and psychographically (e.g., lifestyle, beliefs, interests). We will now delve into the different types of market segmentations.

a. Geographic characteristics are the original criteria upon which segmentation is based, as discussed by Lewis et al. [45] and Tynan and Drayton [38]. Typically, when geographic segmentation is used, the consumer's location (residence) serves as the only criterion to form market segments. The key advantage of geographic segmentation is that each consumer can easily be assigned to a geographic unit. The critical disadvantage is that living in the same area does not necessarily mean sharing other characteristics relevant to marketers, such as cultural backgrounds [46] and benefits sought when purchasing a product.
b. Socio-demographic characteristics [47–49], such as age, gender, income, and education, are additional criteria for segmentation. As with geographic segmentation, socio-demographic categories can easily be determined for every consumer. In some instances, the socio-demographic criterion may also explain specific product preferences. However, in many instances, the socio-demographic criterion is not the cause for product preferences and does not provide sufficient market insight for optimal segmentation decisions.
c. A third group of criteria are psychographic characteristics, which include beliefs, interests, preferences, aspirations, or benefits sought when purchasing a product [50]. The segmentation of health-care consumers is based on psychological determinants of subjective health and other person-related variables. Haley [31] explains that the word "psychographics" was intended as an umbrella term to cover all measures of the mind (p. 7). Lifestyle segmentation, another popular psychographic approach [51], is based on people's activities, opinions, and interests.
d. The fourth criterion is behavior, which comprises a wide range of possible behaviors, such as prior experience with the product, frequency of purchase, amount spent on the product (or across multiple purchase occasions), and search behavior [52–55].

According to Schlegelmilch [32], as opposed to traditional approaches based on coarse-grained segmentation, companies can now micro-segment using big data instead of traditional geographic, demographic, psychographic, and behavioral categorizations. Still, in

many parts of the world, internet and smart phone usage are low, and consumer segmentation via big data remains limited.

2.3. Loyal Customers vs. Price-Sensitive, Deal-Prone Consumers

Loyal customers and price-sensitive, deal-prone consumers are two distinct segments within a customer base, each with its own characteristics and behaviors. These exemplify the third (psychographic) and fourth (behavior) segmentation types mentioned above. We will now explain the differences in each segment.

Loyal customers are those who consistently purchase from a specific brand or company over an extended period. They tend to have a strong emotional connection to the brand, product, or service. Loyal customers often prioritize quality, trust, and reliability over price. They are less likely to switch to competitors even when faced with slightly higher prices. Customers who are loyal to brands present a lower level of proneness to promotions, since they attach more importance to the product than to the price [56,57]. Brand-loyal consumers tend to be satisfied with their brands and need no incentives to purchase the same brand again [57].

Loyal customers may engage with loyalty programs, such as reward points or exclusive discounts. They often refer friends and family to the brand, contributing to word-of-mouth marketing. Relevant marketing strategies focus on building and maintaining relationships through personalized communication, offering exclusive benefits or rewards to encourage continued loyalty, gathering feedback, and actively addressing their needs and concerns.

Although there is no standard definition of brand loyalty, there is a consensus among scholars that brand loyalty is a multidimensional construct that is defined and measured in either behavioral or attitudinal terms [58–62]. Behavioral loyalty is defined by frequent repeat purchases, while attitudinal loyalty is defined by the psychological commitment that a consumer makes in the purchasing act—i.e., intention to purchase and intention to recommend—without necessarily actually repeating purchase behavior [63,64]. The approaches commonly used to measure brand loyalty are behavioral, attitudinal, or a combination of attitudinal and behavioral [60].

Marketers have been interested in the relationship between brand loyalty and price sensitivity for years and have found that loyalty reduces consumers' price sensitivity [65–68], as it raises the price consumers are willing to pay for a brand [69]. Therefore, consumer price sensitivity is expected to be negatively related to brand loyalty [70]. Customers who are satisfied with their purchases and experiences are more likely to spend money on the same brand in the future and are less likely to be sensitive to price promotions. Price promotion proneness is negatively and differentially related to brand loyalty.

2.4. Price-Sensitive, Deal-Prone Consumers

Price-sensitive, deal-prone consumers are those who are highly sensitive to prices and are always on the lookout for discounts, promotions, and deals. They are often willing to switch brands or providers to save money.

Price-sensitive consumers may not have a strong brand loyalty and are more transactional in their approach. It has often been postulated that deal-proneness is negatively related to brand loyalty [71–75]. Non-loyal consumers are more prone to buy discounted products because they attach more importance to the price than to the product's attributes [76,77]. They actively compare prices and seek out the best deals and discounts. Impulse buying is less common among price-sensitive consumers, as they take time to evaluate options. They are more likely to respond to limited time offers and promotions.

Marketing strategies that promote special offers—such as highlight discounts, promotions, marketing material cost savings, targeted advertising, and email campaigns—employ dynamic pricing strategies to adjust prices based on demand and competitor pricing. The characterization of deal-prone consumers has traditionally been related to price sensitivity. Price sensitivity refers to how individuals perceive and respond to changes in prices of

products and services [78]. Most marketing literature assumes a direct relationship between price sensitivity and deal-proneness [79,80].

Many economists and marketing experts, such as Özkan and Evrim [81] and Joshph et al. [82], distinguish between (1) loyal customers with low price sensitivity, who demand a high-quality, longer-lasting, sophisticated product [82], and (2) deal-prone consumers, who are sensitive to price changes and prefer a basic, shorter-lasting, lower quality product [82–86]. Traditionally, a strictly negative relationship is assumed between being deal-prone and being brand-loyal [71,87,88].

Market segmentation and pricing strategies are intertwined elements of marketing, influencing each other's outcomes. The literature emphasizes that understanding consumer heterogeneity through segmentation is crucial for effective pricing decisions, as it allows businesses to align pricing strategies with the unique preferences and behaviors of each customer segment.

Our paper explores the intertemporal effect between brand-loyal and deal-prone customers upon the entry of a new product. Brand-loyal customers pay for innovative products. Deal-prone customers, however, are not willing to pay high prices for such products. An example that provides an intuitive understanding of pricing and segmentation dynamics is the electric vehicle market.

The land transportation industry has undergone significant developments during the past several decades. Electric vehicles (EV) are an innovative, automotive technology that are fully electricity-powered via an onboard battery pack [89,90]. Due to their potential to improve the effectiveness of energy utilization, energy security, and reduced greenhouse gas emission, EVs are becoming popular among customers and policymakers [8,91–93]. On the demand side, a significant number of customers wish to utilize clean green energy to minimize pollution and ecological hazards created by fossil fuels. On the supply side, technological improvements are promoted to reduce pollution via the utilization of cleaner energy sources. Thus, many major car brands such as Volkswagen and BMW are devoting their efforts to launching models with alternative power sources such as electric versions of their existing models [94].

The innovation implementation generates costs in order to guarantee less pollution. From a short-term perspective, it increases expenses [95]. In making green consumption decisions, consumers are faced with a social dilemma: either they can behave in an environmentally friendly manner and contribute to society by reducing pollution or they can try to maximize their own gains [96–100].

A mutual consensus claimed by Policarpo and Aguiar [101] is that customers who prefer environmentally friendly products are considered to be of a higher social status and, in our particular analysis, share the characteristics of altruists who are willing to pay a higher price for a product that sometimes underperforms compared to its conventional counterparts but is better for society as a whole [95,101,102]. The market that is thus created includes two segments of customers: those who desire a cleaner environment and are willing and able to bear the costs of these innovations ("loyal customers"), and those who cannot afford to place a cleaner environment as a higher priority than item cost in their consumption behavior ("deal-prone customers").

When EVs were first introduced to the market at a very high retail price, they were sold to loyal customers only. At a certain point after their entry, prices dropped dramatically, and EVs began to be sold to deal-prone customers who benefitted from the price drop until the cars were taken off the market. In our current paper, we assume that the demand of the deal-prone customers is generated and affected positively by the duration of product use and satisfaction by loyal customers (positive externalities effect of loyal customers on deal prone customers).

The main issues that a producer or marketer may face over time are: (a) what initial optimal high price should be charged for loyal customers; (b) what optimal discount price should be charged to deal-prone customers at a certain point in time; and (c) when the life of the product is known and given (determined as T), at what time point, t, along the

horizon time of T market price should switch from the high price to the low price. The basic concept that directs the marketer is that as t increases, loyal customers benefit more from their exclusive use of the item given the high price they paid, without sharing its use with deal-prone customers. On the other hand, a longer time period of t reduces the satisfaction by and the benefit for the deal-prone customers, since the remaining time of $(T - t)$ that is left for their use of the item at a discounted price is shorter. The technical and theoretical model is examined as a case study below, specifically regarding its application in the case of EVs.

3. The Model

In the contemporary marketplace, a monopoly wields substantial influence, particularly in scenarios where it caters to multiple consumer segments characterized by differing levels of loyalty towards its products. This study focuses on two distinct equilibrium models aimed at optimizing the profit-maximizing strategies adopted by the monopoly in response to varying consumer demands.

The first consumer segment, referred to as type H consumers, exhibits strong brand loyalty. They are not only willing to pay a premium price for the product but also demonstrate a proactive interest in acquiring it as soon as it becomes available. Conversely, type L consumers represent a group less committed to brand loyalty. They tend to seek deals and discounts, thus indicating a willingness to pay a lower price for the product. Their interest in the product is highly dependent on its perceived value in the marketplace.

Our study's first model analyzes a simplified one-period framework involving price discrimination. In this context, the monopoly offers the product to both consumer types at the beginning of the period, but with distinct pricing strategies. Type H loyal consumers are charged a premium price, while type L deal-prone customers are offered the product at a lower price point. As a result, this model involves the analysis of two decision variables, which represent the quantities that each consumer type will purchase.

The second model adopts a segmentation approach, introducing temporal separation between the two consumer types. During the initial period, only type H consumers purchase the higher-quality product. In the subsequent period, type L consumers enter the market and choose the basic product. Importantly, the willingness of type L consumers to pay for the product during the second period is influenced by a positive external effect, specifically represented by the duration for which type H consumers have been using the product. In this second model, the monopoly is confronted with three decision variables, encapsulating the quantities that both consumer types will purchase, along with the pivotal "switching point" that marks the transition from the purchase and use of the high-quality product by type H consumers to the purchase and use of the basic product by type L consumers.

The subsequent sections of this study will provide a detailed exposition of these two models, beginning with an exploration of the first case, followed by an in-depth analysis of the second case.

3.1. Case 1: Discrimination

Our examination commences with the simple discrimination model. Within this framework, a monopoly confronts two linear demand curves, each associated with specific consumer categories: loyal customers and deal-prone customers. Consumers engage in concurrent product acquisition, yet they demonstrate disparate price preferences. Loyal consumers evince a predisposition to accept higher pricing, whereas deal-prone consumers exhibit a proclivity for lower price structures.

Loyal customers exhibit a strong inclination to purchase the newly introduced product, with a high intention to utilize it continuously from the initial time point t = 0 until its

predetermined expiration date, denoted as T. This behavior is denoted as D^H, represented formally by Equation (1), where Q^H represents the quantity demanded by loyal customers.

$$D^H: \ P^H = H - \alpha Q^H \tag{1}$$

Additionally, we encompass non-loyal, deal-prone customers in this market, characterized by a lower demand curve, as expressed in Equation (2) when L < H.

$$D^L: \ P^L = L - \gamma Q^L \tag{2}$$

Based on Equations (1) and (2), each group buys the product, Q, at discriminated prices, i.e., P^L and P^H. P^L represents the price paid by deal prone customers and P^H represents the price paid by loyal customers. Q^L represents the quantity demanded by deal-prone customers.

The cost function of production Q^i is linear and constant, as presented in Equation (3).

$$TC = C_1\left(Q^H + Q^L\right) \tag{3}$$

From the three equations above, i.e., Equations (1)–(3), we can determine the profit function that is maximized according to optimal Q^H and Q^L in Equation (4).

$$\underset{Q^H,\, Q^L}{Max}\ \pi = \left(H - \alpha Q^H\right)Q^H + \left(L - \gamma Q^L\right)Q^L - C_1\left(Q^H + Q^L\right) \tag{4}$$

The derivatives of the profit function with respect to Q^H and Q^L are presented in Equations (5) and (7), and the quantities are presented in Equations (6) and (8).

$$\frac{\partial \pi}{\partial Q^H} = H - 2\alpha Q^H - C_1 = 0 \tag{5}$$

$$Q^H = \frac{H - C_1}{2\alpha} \tag{6}$$

$$\frac{\partial \pi}{\partial Q^L} = L - 2\gamma Q^L - C_1 = 0 \tag{7}$$

$$Q^L = \frac{L - C_1}{2\gamma} \tag{8}$$

The results presented in Equations (6) and (8) combined with Equations (1) and (2) determine the optimal prices in Equations (9) and (10).

$$P^H = \frac{H + C_1}{2} \tag{9}$$

$$P^L = \frac{L + C_1}{2} \tag{10}$$

According to the results of Equations (9) and (10), the optimal price discrimination policy is determined in Equation (11).

$$\Delta P = P^H - P^L = \frac{H - \mathrm{L}}{2} \tag{11}$$

Based on Equations (6) and (8), the optimal value of selling the total output between loyal and deal prone customers is represented in Equation (12).

$$Q = Q^L + Q^H = \frac{\alpha L + \gamma H - (\alpha + \gamma)C_1}{2\alpha\gamma} \tag{12}$$

3.2. Case 2: Segmentation

In this section, we will analyze a segmentation model featuring linear demand curves for the two distinct customer categories mentioned earlier. Initially, only type H consumers purchase the higher-quality product, while in the subsequent period, type L consumers enter the market and opt for the basic product.

These demand curves delineate the consumption patterns exhibited by diverse customer groups, each consuming the product during distinct time intervals (as opposed to Case 1 in which consumption occurs at the same time).

Loyal customers of high demand D^H who consume during period 1 (launch period), from the entry of the product at t = 0 until $t = \hat{t}, t \in [0, \hat{t}]$, in which $\hat{t}$ represents a "switching point." This switching point represents a switch between the purchase and use of the high-quality product by loyal customers to the purchase and use of the basic product by deal-prone customers. Deal-prone customers, whose demand is D^L, enter the market consuming the product in period 2, from the switching point to the expiration date, at which point the product is no longer on the market, $t \in [\hat{t}, T]$.

The demand curves of loyal and deal-prone consumers are presented below in Equations (13) and (14).

The linear expressions present the linear negative effect of price on quantities for loyal consumers, D^H in Equation (13), as well as for deal-prone customers, D^L in Equation (14). In addition, Equation (14) represents the positive external effect of demand of deal-prone customers as affected by earlier consumption and cumulated experience of loyal customers. As long as the quantity consumed by loyal customers, Q^H, is larger, it encourages deal-prone consumers to purchase, Q^L, a larger quantity according to the value of coefficient β.

These externalities encourage more consumption by deal-prone customers.

Therefore, the demand functions in case 2 are presented in Equations (13) and (14):

$$D^H: \; P^H = H - \alpha Q^H \tag{13}$$

and

$$D^L: \; P^L = L + \beta \hat{t} - \gamma Q^L \tag{14}$$

Let us explain in more detail: The monopoly faces in our model a decomposed demand, i.e., $D^H$and D^L. D^H, the demand of loyal customers, is a linear demand with a negative curve with respect to price. This demand is affected by the characteristics of the product (e.g., bare car with only basic four tires as opposed to additional and modified features such as air conditioning, heated seats, elegant leather seats), increasing the value of H.

The second demand function belongs to deal-prone customers with a lower demand, D^L (since H > L), that is positively affected by the length of time that the modified product is held by loyal customers. Based on (13) and (14), which are the segmented demands of the loyal and the deal-prone customers, respectively, we continue our analysis by examining Equations (15) and (16), which describe linear cost functions for various customer types. These exist during the period of product usage, $\hat{t}$ and $T - \hat{t}$.

TC^H that is presented in Equation (15) represents costs to supply basic characteristics for loyal customers (e.g., cost of bare car with four tires), as well as extra costs (C_2) that generate a higher quality car.

TC^L that is presented in Equation (16) represents costs to supply basic characteristics for deal-prone customers (e.g., cost of bare car with four tires).

$$TC^H = (C_1 + C_2) Q^H \hat{t} \tag{15}$$

and

$$TC^L = C_1 Q^L (T - \hat{t}) \tag{16}$$

Based on the two segmented demand curves in Equations (13) and (14) and on the two different cost functions for different customers in Equations (15) and (16), the objective of a

monopoly selling to both segmented markets are the following profit function as presented in Equation (17).

$$\underset{Q^H,\, Q^L, \hat{t}}{Max}\ \pi = \left(H - \alpha Q^H\right)Q^H\hat{t} + \left(L + \beta\hat{t} - \gamma Q^L\right)Q^L\left(T - \hat{t}\right) - C_1\left[Q^H\hat{t} + Q^L\left(T - \hat{t}\right)\right] - C_2Q^H\hat{t} \tag{17}$$

The objective of the firm is to maximize profits based on revenue and costs terms when the three decision variables are Q^H, Q^L, and $\hat{t}$, where Q^H is the optimal quantity supplied to loyal customers, Q^L is the optimal quantity supplied to deal-prone customers, and $\hat{t}$ is the time point when sales switch from loyal customers to deal-prone customers.

The F.O.C., with respect to the three decision variables, is as follows:

$$\frac{\partial \pi}{\partial Q^H} = \left(H - 2\alpha Q^H\right)\hat{t} - C_1\hat{t} - C_2\hat{t} = 0 \tag{18}$$

$$\frac{\partial \pi}{\partial Q^L} = \left(L + \beta\hat{t} - 2\gamma Q^L\right)\left(T - \hat{t}\right) - C_1\left(T - \hat{t}\right) = 0 \tag{19}$$

and

$$\frac{\partial \pi}{\partial \hat{t}} = \left(H - \alpha Q^H\right)Q^H - \left(L + 2\beta\hat{t} - \gamma Q^L\right)Q^L - C_1\left(Q^H - Q^L\right) - C_2Q^H = 0 \tag{20}$$

From Equation (18), we can deduce the optimal quantity supplied to loyal customers as follows:

$$Q^H = \frac{H - C_1 - C_2}{2\alpha} \tag{21}$$

Equations (19) and (20) introduce two reaction curves. The first represents the quantity supplied to deal-prone customers concerning the switching point, as presented in Equation (22). The second signifies the switching point with respect to the quantities demanded by loyal customers and deal-prone customers, as presented in Equation (23).

$$Q^L = \frac{L - C_1}{2\gamma} + \frac{\beta}{2\gamma}\hat{t} \tag{22}$$

and

$$\hat{t} = \frac{\left(H - \alpha Q^H - C_1 - C_2\right)Q^H}{2\beta Q^L} - \frac{L - \gamma Q^L - C_1}{2\beta} \tag{23}$$

By utilizing the three equations mentioned earlier, we derive two additional optimal decision variables in Equations (24) and (25):

$$Q^L = \frac{(1-\beta)(L - C_1)}{2\gamma} + \frac{\beta}{2\sqrt{\alpha\gamma}}(H - C_1 - C_2) \tag{24}$$

$$\hat{t} = \sqrt{\frac{\gamma}{\alpha}}(H - C_1 - C_2) - (L - C_1) \tag{25}$$

Based on the Equations (13) and (14) above, Equations (23)–(25) are solved in Equations (26)–(28).

$$P^H = \frac{H + C_1 + C_2}{2} \tag{26}$$

$$P^L = L + \beta\left[\sqrt{\frac{\gamma}{\alpha}}(H - C_1 - C_2) - (L - C_1)\right] - \gamma\left[\frac{(1-\beta)(L - C_1)}{2\gamma} + + \frac{\beta}{2\sqrt{\alpha\gamma}}(H - C_1 - C_2)\right] \tag{27}$$

Or

$$P^L = \frac{(1-\beta)L + (1+\beta)C_1}{2} + \frac{\beta\sqrt{\gamma}(H - C_1 - C_2)}{2\sqrt{\alpha}} \tag{28}$$

The subtraction of P^L from P^H determines the discount, ΔP, at the switching point $\hat{t}$, and is presented in Equation (29). We also illustrate and present graphically the total quantity of supply to both loyal and deal-prone customers in Equation (30).

$$\Delta P = P^H - P^L = \frac{\left(\sqrt{\alpha} - \beta\sqrt{\gamma}\right)H + \left(\sqrt{\alpha} + \beta\sqrt{\gamma}\right)(C_1 + C_2)}{2\sqrt{\alpha}} - \frac{(1-\beta)L + (1+\beta)C_1}{2} \quad (29)$$

$$Q = Q^L + Q^H = \frac{(1-\beta)(L - C_1)}{2\gamma} + \frac{\left(\alpha\beta + \sqrt{\alpha\gamma}\right)(H - C_1 - C_2)}{2\alpha\sqrt{\alpha\gamma}} \quad (30)$$

4. Findings

The findings section of this study will present conclusions drawn from the analysis of two distinct cases and will provide a comparative analysis of them.

4.1. Case 1 Conclusions

1. A larger value of parameter H correlates with a more positive inclination among loyal customers towards purchasing the product. This increased inclination is associated with a willingness to pay a higher price and a greater tolerance for price differences compared to deal-prone consumers.
2. A higher value of parameter L leads to a more positive attitude among deal-prone customers towards purchasing the product. This predisposition encompasses a willingness to pay a higher price but with a diminished tolerance for price discrepancies compared to loyal consumers.
3. An increase in parameter α, indicating a greater sensitivity to price changes, results in the reduced purchases of the product by loyal customers and a decrease in overall aggregate purchases.
4. A higher value of parameter γ exerts no discernible impact on loyal customers. However, it does lead to a reduction in the number of deal-prone customers and a decrease in the overall customer count.
5. A higher level of parameter C_1 reduces the number of both loyal customers and deal-prone users.

After presenting the conclusions for case 1, our analysis will move on to the conclusions for case 2.

4.2. Case 2 Conclusions

1. A larger value of parameter H, which represents a larger positive attitude toward purchases of the product by loyal customers, leads to an increase in the externality effect on deal-prone customers. Therefore, the number of deal-prone customers increases and more deal-prone customers purchase the product.
2. As a result of proposition 1 above, the increase in H leads to a longer period of purchase by loyal customers and a shorter period of purchase by deal-prone customers.
3. An increase in parameter α, which indicates a larger sensitivity of quantity purchased due to price changes, leads to a decrease in the usage time period of loyal customers as well as of deal-prone customers.
4. The effect of an increased parameter β on the number of deal-prone users is complex. It is positive for lower α and C_2 values but turns negative for higher α and C_2 values.
5. A larger value of parameter γ has no effect on loyal customers. However, a larger γ decreases the number of deal-prone customers, shortens the purchase period of the product, and reduces the deal-prone purchases.
6. A higher level of parameter C_2 shrinks the number of loyal customers due to externalities. It shrinks the number of deal-prone users as well as their purchase period.

4.3. Comparative Analysis of Case 1 and Case 2

In the next stage we will compare and contrast cases 1 (discrimination) and 2 (segmentation).

In case 1 (discrimination), the demand includes two kinds of customers: D^H—loyal customers, and D^L—deal-prone customers. In this case, the solutions are presented in Equations (1)–(12) and are also presented in Table 1.

In case 2 (segmentation), the demand also includes the same two kinds of customers. However, in this case, loyal customers with high demand are supplied by the seller only during a certain period—from the entry point until time point $\hat{t}$. At point $\hat{t}$, deal-prone customers join and purchase the product at a cheaper price, and the discount is given for the leftover period of $(T - \hat{t})$, where T is given and represents the expiration date of the product. The profit maximization is resolved under the assumption of segmented demand, in which the quantity demand by deal-prone customers is affected positively by the quantity consumed in the earlier period of consumption. These intertemporal values of T and the optimal discount are presented in Equations (13)–(30).

In case 1 (discrimination), where the product enters at $t = 0$ and is sold only to loyal customers during the period from $t = 0$ to $\hat{t}$, the switching point. From this point to the expiration time point T, only deal-prone customers purchase the product at a discounted price, where the optional discount is $\Delta P = P^H - P^L$.

The relevant parameters in this scenario, case 2 of segmentation, compared to case 1 of discrimination, are introduced in Table 1 below, followed by several propositions related to the comparison between the cases.

Table 1. Comparative analysis.

Variable	Discrimination	Segmentation
P^H	$\frac{H+C_1}{2}$	$\frac{H+C_1+C_2}{2}$
P^L	$\frac{L+C_1}{2}$	$\frac{(1-\beta)L+(1+\beta)C_1}{2} + \frac{\beta\sqrt{\gamma}(H-C_1-C_2)}{2\sqrt{\alpha}}$
$P^H - P^L$	$\frac{H-L}{2}$	$\frac{\left(\sqrt{\alpha}-\beta\sqrt{\gamma}\right)H+\left(\sqrt{\alpha}+\beta\sqrt{\gamma}\right)(C_1+C_2)}{2\sqrt{\alpha}} - \frac{(1-\beta)L+(1+\beta)C_1}{2}$
Q^H	$\frac{H-C_1}{2\alpha}$	$\frac{H-C_1-C_2}{2\alpha}$
Q^L	$\frac{L-C_1}{2\gamma}$	$\frac{(1-\beta)(L-C_1)}{2\gamma} + \frac{\beta(H-C_1-C_2)}{2\sqrt{\alpha\gamma}}$
$Q^L + Q^H$	$\frac{\alpha L+\gamma H-(\alpha+\gamma)C_1}{2\alpha\gamma}$	$\frac{(1-\beta)(L-C_1)}{2\gamma} + \frac{\left(\alpha\beta+\sqrt{\alpha\gamma}\right)(H-C_1-C_2)}{2\alpha\sqrt{\alpha\gamma}}$

Propositions based on the comparison:

1. The price loyal customers are charged is higher in the case of segmentation (case 2) in contrast to the price they are charged in the case of discrimination (case 1).
2. The price deal-prone customers are charged is higher in the case of discrimination if H >> L and $\alpha < \gamma$.
3. The discount given to deal-prone customers is higher if H and α are high and L, β, γ, and C_2 are low.
4. The number of sales to loyal customers in the discrimination case is higher than in the segmentation case.
5. The number of sales to deal-prone customers is higher in the segmentation case when H >> L and α is low.

From the analysis above, we can derive certain propositions regarding the life cycle of a product that is segmented and leads to maximum profit, π_S, at point B, as presented at Figure 1.

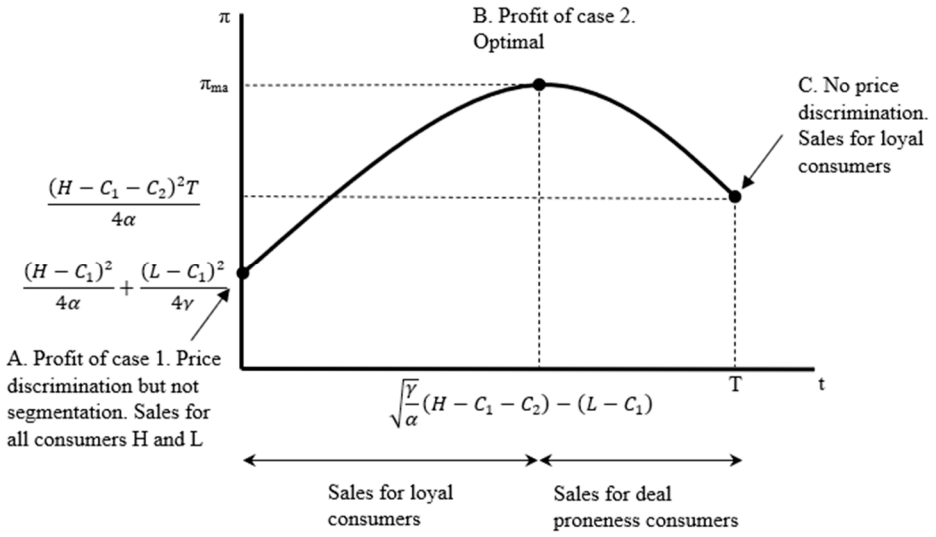

Figure 1. Presentation and explanation.

Figure 1 presents the value of π_s, the profit function in the case of segmentation at point t, which measures the period of sale to loyal customers from the entry point of the product when t = 0, until time $\hat{t}$, when the switching point occurs, and sales are directed from loyal customers to deal-prone customers. This occurs until the end of the period, T, which represents the expiration date.

Let us explain Figure 1 in detail:

When t = 0, the profit level, π_s, reaches its peak at point A (the profit of case 1). This point represents the case in which only loyal customers purchase the product during the entire period, without any entry of deal-prone consumers. In the extreme position when t = T, sales are directed only to deal-prone customers. The segmented profit π_s from sales to deal-prone customers only is presented at point C. However, the maximum profit, π_s, approaches point B (the profit of case 2) when the segmented market is carried out as follows:

At point $\hat{t}$, the switching point, we split the segmented market as follows: from t = 0 to $t = \hat{t}$, sales are directed only to loyal consumers at the high price, P^H, and from the switching point $t = \hat{t}$ to the expiration date t = T, sales are directed only to deal-prone consumers at price P^L. As a result, we reach profit maximization at point B under segmentation.

Figure 1 demonstrates the case in which π_s increases at low levels of profit values as small values of "t" increase to the peak point B, and decreases from peak point B towards a higher level of "t" up to T. The profit values of π_s at A and C are lower than at point B. However, the profit values at points A and C can be higher or lower. At certain values of the parameters, π_s at point A > π_s at point C, and vice versa. When the gap between the parameter value of H is significantly larger than the value L, it is more likely that π_s at point A is smaller then π_s at point C, and vice versa. The proof of these statements is available upon request.

5. A Practical Numerical Example

In this chapter, the aim is to demonstrate the practical implications of the conclusions and propositions outlined in the theoretical models, using a practical numerical example. The parameters governing the models are detailed as follows:

For both types of consumers, the reservation prices are denoted as H = 90, L = 50.

The costs associated with the two types of consumers are denoted as C1 = 10, C2 = 20, and the lifetime of the product is valued as T = 24.

The parameters that indicate sensitivity have been defined as α = 0.6, β = 0.7, and γ = 0.5.

The approach involves initially incorporating these parameters into Model 1. In the context of Model 1, the demand curves for the two types of consumers are expressed as follows:

The demand curve for loyal customers $\left(D^H\right)$ is denoted as:

$$D^H:\ P^H = 90 - 0.6Q^H \tag{31}$$

The demand curve for deal-prone customers $\left(D^L\right)$ is denoted as:

$$D^L:\ P^L = 50 - 0.5Q^L \tag{32}$$

The profit function, capturing the profit generated from both consumer segments, is defined as:

$$\pi = \left(90 - 0.6Q^H\right)Q^H + \left(50 - 0.5Q^L\right)Q^L - 10\left(Q^H + Q^L\right) \tag{33}$$

Subsequently, the outcomes are presented, which include the optimal quantities determined via profit maximization for each consumer segment.

For loyal consumers $\left(Q^H\right)$:

$$Q^H = \frac{90 - 10}{2 \times 0.6} = 66.67 \tag{34}$$

For deal-prone consumers $\left(Q^L\right)$:

$$Q^L = \frac{50 - 10}{2 \times 0.5} = 40 \tag{35}$$

Consequently, the optimal prices corresponding to these quantities are determined as follows:

For loyal consumers $\left(P^H\right)$:

$$P^H = \frac{90 + 10}{2} = 50 \tag{36}$$

For deal-prone consumers $\left(P^L\right)$:

$$P^L = \frac{50 + 10}{2} = 30 \tag{37}$$

The optimal price discrimination policy, denoted as ΔP, is the difference between the optimal prices for high-value and low-value consumers:

$$\Delta P = P^H - P^L = \frac{90 - 50}{2} = 20 \tag{38}$$

Finally, the total output, Q, obtained under this optimal pricing strategy is calculated as the sum of high-value and low-value consumer quantities:

$$Q = Q^L + Q^H = \frac{0.6 \times 50 + 0.5 \times 90 - (0.6 + 0.5) \times 10}{2 \times 0.6 \times 0.5} = 106.67 \tag{39}$$

Transitioning to Model 2, the demand curves for the consumer segments are as follows:

For loyal customers:

$$D^H:\ P^H = 90 - 0.6Q^H \tag{40}$$

For deal-prone customers:

$$D^L:\ P^L = 50 + 0.7\hat{t} - 0.5Q^L \tag{41}$$

The profit function, encompassing both consumer segments, is defined as:

$$\pi = \left(90 - 0.6Q^H\right)Q^H\hat{t} + \left(50 + 0.7\hat{t} - 0.5Q^L\right)Q^L\left(24 - \hat{t}\right) - 10\left[Q^H\hat{t} + Q^L\left(24 - \hat{t}\right)\right] - 20Q^H\hat{t} \quad (42)$$

Subsequently, the results are presented, including the optimal quantities achieved through profit maximization:

For loyal consumers $\left(Q^H\right)$:

$$Q^H = \frac{90 - 10 - 20}{2 \times 0.6} = 50 \quad (43)$$

For deal-prone consumers $\left(Q^L\right)$:

$$Q^L = \frac{(1 - 0.7)(50 - 10)}{2 \times 0.5} + \frac{0.7(90 - 10 - 20)}{2\sqrt{0.6 \times 0.5}} = 50.34 \quad (44)$$

The switching point ($\hat{t}$) is identified as:

$$\hat{t} = \sqrt{\frac{0.5}{0.6}}(90 - 10 - 20) - (50 - 10) = 14.77 \quad (45)$$

Subsequently, the optimal prices corresponding to these quantities are determined:

For loyal consumers $\left(P^H\right)$:

$$P^H = \frac{90 + 10 + 20}{2} = 60 \quad (46)$$

For deal-prone consumers $\left(P^L\right)$:

The optimal price difference policy (ΔP) is:

$$\Delta P = P^H - P^L = \frac{\left(\sqrt{0.6} - 0.7\sqrt{0.5}\right)90 + \left(\sqrt{0.6} + 0.7\sqrt{0.5}\right)(10 + 20)}{2\sqrt{0.6}} - \frac{(1 - 0.7)50 + (1 + 0.7)10}{2} = 24.83 \quad (47)$$

Finally, the total output (Q) obtained under this optimal quantities strategy is determined:

$$Q = Q^L + Q^H = \frac{(1 - 0.7)(50 - 10)}{20.5} + \frac{\left(0.6 \cdot 0.7 + \sqrt{0.6 \cdot 0.5}\right)(90 - 10 - 20)}{20.6\sqrt{0.6 \cdot 0.5}} = 100.34 \quad (48)$$

To enhance the clarity of the findings, five graphical figures (Figure 2) have been included, with a specific emphasis on the influence of variations in parameter H.

The findings presented in the figures serve to substantiate and strengthen the conclusions and propositions established within the theoretical model. Upon scrutinizing the quantities sold, distinct trends emerge. Notably, in the discrimination case, the sales volume to loyal customers surpasses the volume observed in the segmentation case. Conversely, the segmentation scenario records higher sales to deal-prone customers compared with the discrimination case. Notably, as the value of parameter H increases, both cases witness an expansion in total quantities sold, gradually drawing closer to each other.

Turning our attention to price dynamics, loyal customers encounter higher prices in the segmentation scenario than in the discrimination case. Similarly, deal-prone customers face elevated prices under segmentation, attributed to the influence of parameter α, which exceeds γ. Additionally, the price difference, in both cases, demonstrates an incremental trend with rising values of H, leading to a convergence of prices. Finally, an examination of the product holding period reveals distinctive trends among customer segments. The holding period for loyal customers extends with the rise of H. Conversely, the product holding period for deal-prone consumers experiences a reduction as H increases.

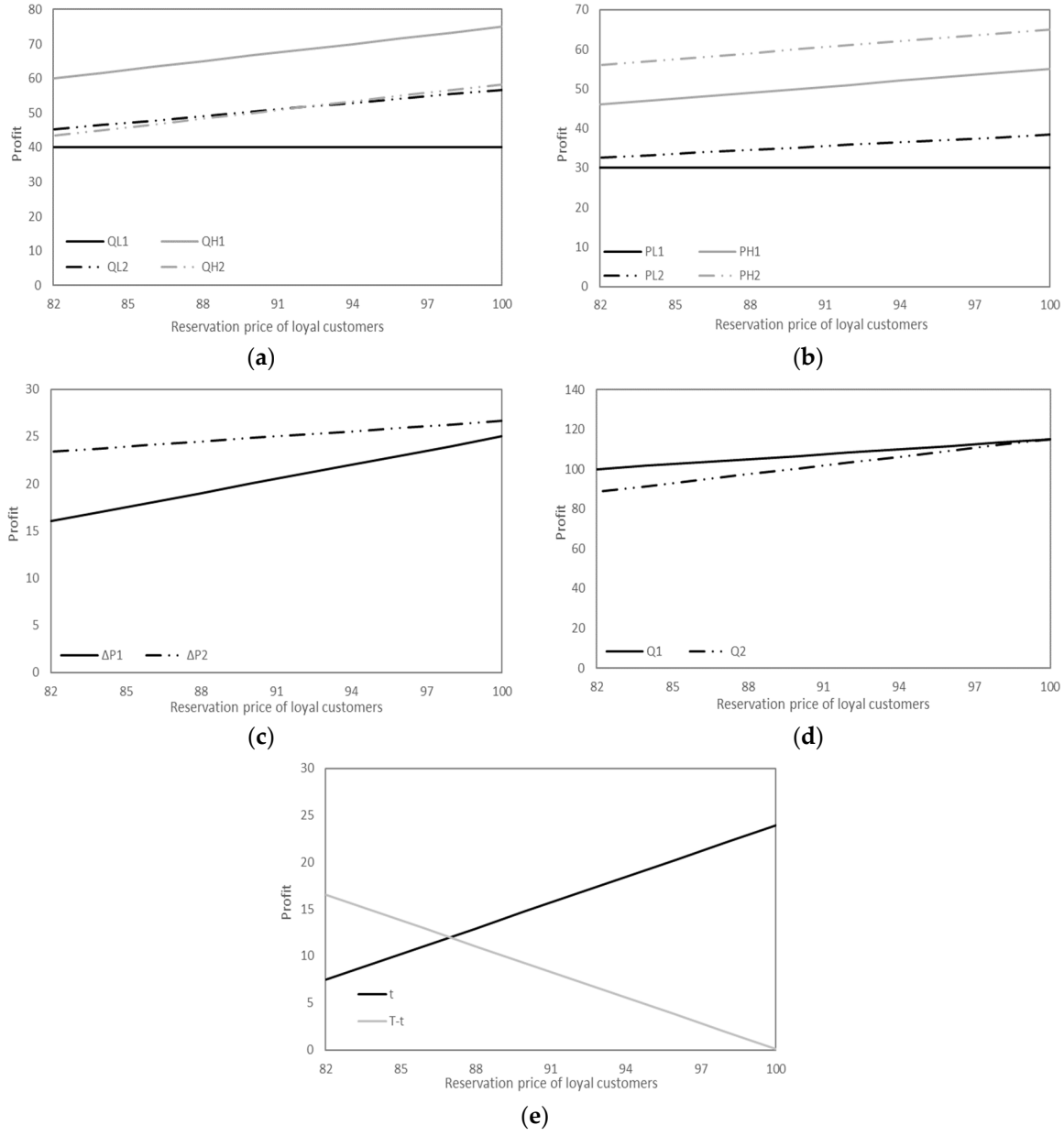

Figure 2. Illustration of decision variable outcomes in response to H modification. (**a**) Quantities of loyal and deal-prone consumers. (**b**) Prices of loyal and deal-prone consumers. (**c**) Price difference. (**d**) Total output. (**e**) Switching point.

6. Conclusions and Implications

The increased tendency of loyal customers toward the greater consumption of higher-quality products can be considered a positive externality that inspires deal prone customers to greater consumption as well. This positively affects the length of the purchase time as well as the length of the use time of the higher-quality products. As a result, although the actual time period of both purchase and use is shorter, the actual period of use by deal-prone customers grows and, subjectively, becomes more valuable. Thus, prices in both segmented products are higher in the segmented demand than the prices that are determined in the commonly used method of discriminating monopoly. On the other hand, the lower sensitivity of quantity demanded towards price changes may lead to a shortened period of use by both the loyal customers and the deal-prone customers.

The differences between the case of discrimination on the one hand and the case of segmentation on the other are based on totally different developments. In the case of

discrimination, customers consume simultaneously the product that may be sold during the same period but at different prices. Since the consumers share product consumption simultaneously and independently, the solution that is accepted by each market (loyal/deal-prone) is reached according to their independent variables.

In the case of segmentation, the interdependency is revealed. The initial demand is induced by loyal customers' independent demand of high price values. The length of time of product consumption by loyal customers affects deal-prone customers, and the optimization process takes into account the structure of both customer groups and the combination of each group's length of purchase and use time, which are influenced by the intertemporal (positive) effects between loyal and deal-prone customers. This effect does not occur in the regular price discrimination scenario.

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References

1. Spann, M.; Fischer, M.; Tellis, G.J. Skimming or Penetration? Strategic Dynamic Pricing for New Products. *Mark. Sci.* **2015**, *34*, 235–249. [CrossRef]
2. Raju, J.S.; Srinivasan, V.; Lal, R. The effects of brand loyalty on competitive price promotional strategies. *Manag. Sci.* **1990**, *36*, 276–304. [CrossRef]
3. Kotler, P.; Armstrong, G.M. *Marketing Mix: Selected Chapters From: Principles of Marketing, Philip Kotler and Gary Armstrong*; Pearson: London, UK, 2018.
4. Morton, C.; Anable, J.; Nelson, J.D. Consumer structure in the emerging market for electric vehicles: Identifying market segments using cluster analysis. *Int. J. Sustain. Transp.* **2017**, *11*, 443–459. [CrossRef]
5. Liao, F.; Molin, E.; van Wee, B. Consumer preferences for electric vehicles: A literature review. *Transp. Rev.* **2017**, *37*, 252–275. [CrossRef]
6. Thomas, V.J.; Maine, E. Market entry strategies for electric vehicle start-ups in the auto-motive industry–Lessons from Tesla Motors. *J. Clean. Prod.* **2019**, *235*, 653–663. [CrossRef]
7. Long, Z.; Axsen, J.; Miller, I.; Kormos, C. What does Tesla mean to car buyers? Exploring the role of automotive brand in perceptions of battery electric vehicles. *Transp. Res. Part A Policy Pract.* **2019**, *129*, 185–204. [CrossRef]
8. Rezvani, Z.; Jansson, J.; Bodin, J. Advances in consumer electric vehicle adoption research: A review and research agenda. *Transp. Res. Part D Transp. Environ.* **2015**, *34*, 122–136. [CrossRef]
9. Rezvani, Z.; Jansson, J.; Bengtsson, M. Cause I'll Feel Good! An investigation into the effects of anticipated emotions and personal moral norms on consumer pro-environmental behaviour. *J. Promot. Manag.* **2017**, *23*, 163–183. [CrossRef]
10. Rezvani, Z.; Jansson, J.; Bengtsson, M. Consumer motivations for sustainable consumption: The interaction of gain, normative and hedonic motivations on electric vehicle adoption. *Bus. Strat. Environ.* **2018**, *27*, 1272–1283. [CrossRef]
11. Hidrue, M.K.; Parsons, G.R.; Kempton, W.; Gardner, M.P. Willingness to pay for electric vehicles and their attributes. *Resour. Energy Econ.* **2011**, *33*, 686–705. [CrossRef]
12. Krass, D.; Nedorezov, T.; Ovchinnikov, A. Environmental Taxes and the Choice of Green Technology. *Prod. Oper. Manag.* **2013**, *22*, 1035–1055. [CrossRef]
13. Luo, C.; Leng, M.; Huang, J.; Liang, L. Supply chain analysis under a price-discount incentive scheme for electric vehicles. *Eur. J. Oper. Res.* **2014**, *235*, 329–333. [CrossRef]
14. Lim, M.K.; Mak, H.-Y.; Rong, Y. Toward Mass Adoption of Electric Vehicles: Impact of the Range and Resale Anxieties. *Manuf. Serv. Oper. Manag.* **2015**, *17*, 101–119. [CrossRef]
15. Gong, S.; Ardeshiri, A.; Rashidi, T.H. Impact of government incentives on the market penetration of electric vehicles in Australia. *Transp. Res. Part D Transp. Environ.* **2020**, *83*, 102353. [CrossRef]
16. Shao, L.; Yang, J.; Zhang, M. Subsidy scheme or price discount scheme? Mass adoption of electric vehicles under different market structures. *Eur. J. Oper. Res.* **2017**, *262*, 1181–1195. [CrossRef]
17. Izquierdo-Yusta, A.; Gómez-Cantó, M.G.; Pelegrin-Borondo, J.; Martínez-Ruiz, M.P. Consumers' behaviour in fast-food restaurants: A food value perspective from Spain. *Br. Food J.* **2019**, *121*, 386–399. [CrossRef]

18. Oyewole, P. Fast food marketing and the African American consumers: The impact of so-cio-economic and demographic characteristics. *J. Int. Consum. Mark.* **2007**, *19*, 75–108. [CrossRef]
19. Rina, R.I.; Manohari, G.M.; Leena, R.P. An Empirical Study on Consumer behavior and market Segmentation among Children towards fast food in Coimbatore District. *Asian J. Manag.* **2019**, *10*, 357–362. [CrossRef]
20. Xiao, A.; Yang, S.; Iqbal, Q. Factors Affecting Purchase Intentions in Generation Y: An Empirical Evidence from Fast Food Industry in Malaysia. *Adm. Sci.* **2018**, *9*, 4. [CrossRef]
21. Anand, R. A study of determinants impacting consumers food choice with reference to the fast food consumption in India. *Soc. Bus. Rev.* **2011**, *6*, 176–187. [CrossRef]
22. Jafari Momtaz, N.; Alizadeh, S.; Sharif Vaghefi, M. A new model for assessment fast food customer behavior case study: An Iranian fast-food restaurant. *Br. Food J.* **2013**, *115*, 601–613. [CrossRef]
23. Datta, Y. A critique of Porter's cost leadership and differentiation strategies. *Chin. Bus. Rev.* **2010**, *9*, 37.
24. Yu, C.-M.J.; Wu, L.-Y.; Chiao, Y.-C.; Tai, H.-S. Perceived quality, customer satisfaction, and customer loyalty: The case of lexus in Taiwan. *Total. Qual. Manag. Bus. Excel.* **2005**, *16*, 707–719. [CrossRef]
25. Roy, S.; Goswami, P. Structural equation modeling of value-psychographic trait-clothing purchase behavior: A study on the urban college-goers of India. *Young Consum.* **2007**, *8*, 269–277. [CrossRef]
26. Dahana, W.D.; Miwa, Y.; Morisada, M. Linking lifestyle to customer lifetime value: An exploratory study in an online fashion retail market. *J. Bus. Res.* **2019**, *99*, 319–331. [CrossRef]
27. Gao, L.; Norton, M.J.; Zhang, Z.M.; Kin-man To, C. Potential niche markets for luxury fashion goods in China. *J. Fash. Mark. Manag. Int. J.* **2009**, *13*, 514–526.
28. Anojan, V.; Subaskaran, T. Consumer's preference and consumer's buying behavior on soft drinks: A case study in Northern Province of Sri Lanka. *Glob. J. Manag. Bus. Res.* **2015**, *15*, 11–33.
29. Nadanyiova, M.; Kliestikova, J.; Kolencik, J. Sensory Marketing from the Perspective of a Support Tool for Building Brand Value. *Econ. Cult.* **2018**, *15*, 96–104. [CrossRef]
30. Smith, W.R. Product differentiation and market segmentation as alternative marketing strategies. *J. Mark.* **1956**, *21*, 3–8. [CrossRef]
31. Haley, R.I. *Developing Effective Communications Strategy: A Benefit Segmentation Approach*; Ronald Press: San Francisco, CA, USA, 1985; Volume 21.
32. Schlegelmilch, B.B. Segmenting targeting and positioning in global markets. In *Global Marketing Strategy*; Springer: Cham, Switzerland, 2022; pp. 129–159.
33. Nezampour, M.; Rojuee, M.; Jafari Titkanloo, S. Market Segmentation of Nuts and Dried Fruits Based on Customers Expected Values Using DBSCAN Algorithm. *Commer. Surv.* **2022**, *19*, 45–68.
34. Farris, P.W.; Buzzell, R.D. Why advertising and promotional costs vary: Some cross-sectional analyses. *J. Mark.* **1979**, *43*, 112–122. [CrossRef]
35. Kotler, P.; Armstrong, G.; Armstrong, G.M. *Principles of Marketing*; Pearson Education India: New Delhi, India, 2010.
36. Wind, Y.; Cardozo, R.N. Industrial market segmentation. *Ind. Mark. Manag.* **1974**, *3*, 153–165. [CrossRef]
37. Hooley, G.J.; Saunders, J.A.; Piercy, N.F. *Marketing Strategy and Competitive Positioning*; This book delves into market segmentation within the context of marketing strategy, illustrating its importance in creating a competitive advantage; Pearson Education: London, UK, 2004.
38. Tynan, A.C.; Drayton, J. Market segmentation. *J. Mark. Manag.* **1987**, *2*, 301–335. [CrossRef]
39. Wells, W.D. Psychographics: A critical review. *J. Mark. Res.* **1975**, *12*, 196–213. [CrossRef]
40. Çınar, K.; Yetimoğlu, S.; Uğurlu, K. The Role of Market Segmentation and Target Marketing Strategies to Increase Occupancy Rates and Sales Opportunities. In *Strategic Innovative Marketing and Tourism: 8th ICSIMAT, Northern Aegean, Greece, 2019*; Springer International Publishing: Berlin/Heidelberg, Germany, 2020.
41. Schiffman, L.G.; Kanuk, L.L. *Consumer Behavior*, 8th ed.; Pearson Education: New Delhi, India, 2004.
42. Dibb, S.; Simkin, L. Market Segmentation Success: Making it Happen! Routledge: Abingdon-on-Thames, UK, 2008.
43. Wedel, M.; Kamakura, W.A. *Market Segmentation: Conceptual and Methodological Foundations*; Springer Science & Business Media: Berlin/Heidelberg, Germany, 2000.
44. McDonald, M. Existentialism—A school of thought based on a conception of the absurdity of the universe. *Int. J. Mark. Res.* **2010**, *52*, 427–430. [CrossRef]
45. Lewis, R.C.; Chambers, R.E.; Chacko, H.E. *Marketing Leadership in Hospitality: Foundations and Practices*; Van Nostrand Reinhold: New York, NY, USA, 1995.
46. Steenkamp, J.B.E.; Ter Hofstede, F. International market segmentation: Issues and perspectives. *Int. J. Res. Mark.* **2002**, *19*, 185–213. [CrossRef]
47. Gazquez-Abad, J.C.; Sanchez-Perez, M. Characterising the deal-proneness of con-sumers by analysis of price sensitivity and brand loyalty: An analysis in the retail environment. *Int. Rev. Retail. Distrib. Consum. Res.* **2009**, *19*, 1–28.
48. Carvache-Franco, M.; Carvache-Franco, W.; Carvache-Franco, O.; Hernández-Lara, A.B.; Buele, C.V. Segmentation, motivation, and sociodemographic aspects of tourist demand in a coastal marine destination: A case study in Manta (Ecuador). *Curr. Issues Tour.* **2020**, *23*, 1234–1247. [CrossRef]
49. Menor-Campos, A.; Jiménez, P.A.F.; Romero-Montoya, M.E.; López-Guzmán, T. Segmentation and sociodemographic profile of heritage tourist. *Tour. Hosp. Manag.* **2020**, *26*, 115–132. [CrossRef]

50. Bloem, S.; Stalpers, J.; Groenland, E.A.G.; van Montfort, K.; van Raaij, W.F.; de Rooij, K. Segmentation of health-care consumers: Psychological determinants of subjective health and other person-related variables. *BMC Health Serv. Res.* **2020**, *20*, 726. [CrossRef]
51. Cahill, D.J. *Lifestyle Market Segmentation*; Haworth Press: New York, NY, USA, 2006.
52. Moscardo, G.; Pearce, P.; Morrison, A. Evaluating different bases for market segmentation. *J. Travel Tour. Mark.* **2001**, *10*, 29–49. [CrossRef]
53. Tsai, C.Y.; Chiu, C.C. A purchase-based market segmentation methodology. *Exp. Syst. Appl.* **2004**, *27*, 265–276. [CrossRef]
54. Heilman, C.M.; Bowman, D. Segmenting consumers using multiple-category purchase data. *Int. J. Res. Mark.* **2002**, *19*, 225–252. [CrossRef]
55. Horvat, S.; Došen, O. Managing Private Labels Based on Psychographic Consumer Segments: Emerging European Market Perspective. *Organ. Mark. Emerg. Econ.* **2020**, *11*, 461–466. [CrossRef]
56. Massy, W.F.; Frank, R.E. Short term price and dealing effects in selected market segments. *J. Mark. Res.* **1965**, *2*, 171–185. [CrossRef]
57. Wakefield, K.L.; Barnes, J.H. Retailing hedonic consumption: A model of sales promotion of a leisure service. *J. Retail.* **1997**, *72*, 409–427. [CrossRef]
58. Cengiz, H.; Akdemir-Cengiz, H. Review of brand loyalty literature: 2001–2015. *J. Res. Mark.* **2016**, *6*, 407–434. [CrossRef]
59. Bowen, J.T.; Chen, S.L. The relationship between customer loyalty and customer satisfaction. *Int. J. Contemp. Hosp. Manag.* **2001**, *13*, 213–217. [CrossRef]
60. Rundle-Thiele, S.; Bennett, R. A brand for all seasons? A discussion of brand loyalty approaches and their applicability for different markets. *J. Prod. Brand Manag.* **2001**, *10*, 25–37. [CrossRef]
61. Back, K.-J.; Parks, S.C. A Brand Loyalty Model Involving Cognitive, Affective, and Conative Brand Loyalty and Customer Satisfaction. *J. Hosp. Tour. Res.* **2003**, *27*, 419–435. [CrossRef]
62. Worthington, S.; Russell-Bennett, R.; Härtel, C. A tri-dimensional approach for auditing brand loyalty. *J. Brand Manag.* **2010**, *17*, 243–253. [CrossRef]
63. Jacoby, J. Brand loyalty: A conceptual definition. In Proceedings of the Annual Convention of the American Psychological Association. *Proc. Annu. Conv. Am. Psychol. Assoc.* **1971**, *6 Pt 2*, 655–656.
64. Jarvis, L.P.; Wilcox, J.B. Repeat purchasing behavior and attitudinal brand loyalty: Additional evidence. *Marketing* **1776**, *1976*, 151–152.
65. McCann, J.M. Market segment response to the marketing decision variables. *J. Mark. Res.* **1974**, *11*, 399–412. [CrossRef]
66. Neslin, S.A.; Henderson, C.; Quelch, J. Consumer Promotions and the Acceleration of Product Purchases. *Mark. Sci.* **1985**, *4*, 147–165. [CrossRef]
67. Krishnamurthi, L.; Raj, S.P. A model of brand choice and purchase quantity price sensitivities. *Mark. Sci.* **1988**, *7*, 1–20. [CrossRef]
68. Krishnamurthi, L.; Raj, S.P. An Empirical Analysis of the Relationship Between Brand Loyalty and Consumer Price Elasticity. *Mark. Sci.* **1991**, *10*, 172–183. [CrossRef]
69. Krishnamurthi, L.; Papatla, P. Accounting for heterogeneity and dynamics in the loyalty–price sensitivity relationship. *J. Retail.* **2003**, *79*, 121–135. [CrossRef]
70. Kumar, S.R.; Advani, J.Y. Factories affecting brand loyalty-A study in a emerging market on fast moving goods. *J. Cust. Behav.* **2005**, *4*, 251–275. [CrossRef]
71. Blattberg, R. *; Neslin. S. Sales Promotion: Concepts, Methods and Strategies*; Prentice Hall: Englewood Cliffs, NJ, USA, 1990.
72. Dodson, J.A.; Tybout, A.M.; Sternthal, B. *The Effect of Deals and Deal Retraction on Brand Switching*; ACR North American Advances: San Francisco, CA, USA, 1977.
73. Lichtenstein, D.R.; Burton, S.; Netemeyer, R.G. An examination of deal proneness across sales promotion types: A consumer segmentation perspective. *J. Retail.* **1997**, *73*, 283–297. [CrossRef]
74. Laroche, M.; Pons, F.; Zgolli, N.; Cervellon, M.-C.; Kim, C. A model of consumer response to two retail sales promotion techniques. *J. Bus. Res.* **2003**, *56*, 513–522. [CrossRef]
75. Lim, J.; Currim, I.S.; Andrews, R.L. Consumer heterogeneity in the longer-term effects of price promotions. *Int. J. Res. Mark.* **2005**, *22*, 441–457. [CrossRef]
76. Webster, F.E., Jr. The "deal-prone" consumer. *J. Mark. Res.* **1965**, *2*, 186–189.
77. Bawa, K.; Shoemaker, R.W. The coupon-prone consumer: Some findings based on purchase behavior across product classes. *J. Mark.* **1987**, *51*, 99–110. [CrossRef]
78. Wakefield, K.L.; Inman, J. Situational price sensitivity: The role of consumption occasion, social context and income. *J. Retail.* **2003**, *79*, 199–212. [CrossRef]
79. Walters, R.G.; Jamil, M. Exploring the relationships between shopping trip type, purchases of products on promotion, and shopping basket profit. *J. Bus. Res.* **2003**, *56*, 17–29. [CrossRef]
80. Martínez, E.; Montaner, T. The effect of consumer's psychographic variables upon deal-proneness. *J. Retail. Consum. Serv.* **2006**, *13*, 157–168. [CrossRef]
81. Özkan, P.E.; Evrim, D. The mediating role of price sensitivity in the effect of trust and loyalty to luxury brands on the brand preference. Управленец **2020**, *11*, 70–84.
82. Joseph, J.; Sivakumaran, B.; Mathew, S. Does Loyalty Matter? Impact of Brand Loyalty and Sales Promotion on Brand Equity. *J. Promot. Manag.* **2020**, *26*, 524–543. [CrossRef]

83. Buil, I.; de Chernatony, L.; Martínez, E. Examining the role of advertising and sales promotions in brand equity creation. *J. Bus. Res.* **2013**, *66*, 115–122. [CrossRef]
84. Montaner, T.; de Chernatony, L.; Buil, I. Consumer response to gift promotions. *J. Prod. Brand Manag.* **2011**, *20*, 101–110. [CrossRef]
85. Allender, W.J.; Richards, T.J. Brand Loyalty and Price Promotion Strategies: An Empirical Analysis. *J. Retail.* **2012**, *88*, 323–342. [CrossRef]
86. Yoon, K.; Tran, T.V. Revisiting the Relationship Between Consumer Loyalty and Price Sensitivity: The Moderating Role of Deal-Proneness. *J. Mark. Theory Pract.* **2011**, *19*, 293–306. [CrossRef]
87. Ailawadi, K.L.; Scott, A.; Neslin, S.; Gedenk, K. Pursuing the Value-Conscious Consumer: Store Brands Versus National Brand Performance. *J. Mark.* **2001**, *65*, 71–89. [CrossRef]
88. McAlister, L. *The Impact of Price Promotions on a Brand's Market Share, Sales Pattern and Profitability*; Report no. 86–110; Marketing Science Institute: Cambridge, MA, USA, 1986.
89. Asadi, S.; Nilashi, M.; Samad, S.; Abdullah, R.; Mahmoud, M.; Alkinani, M.H.; Yadegaridehkordi, E. Factors impacting consumers' intention toward adoption of electric vehicles in Malaysia. *J. Clean. Prod.* **2021**, *282*, 124474. [CrossRef]
90. Plötz, P.; Schneider, U.; Globisch, J.; Dütschke, E. Who will buy electric vehicles? Identifying early adopters in Germany. *Transp. Res. Part A Policy Pract.* **2014**, *67*, 96–109. [CrossRef]
91. Huang, Y.; Qian, L.; Soopramanien, D.; Tyfield, D. Buy, lease, or share? Consumer pref-erences for innovative business models in the market for electric vehicles. *Technol. Forecast. Soc. Change* **2021**, *166*, 120639. [CrossRef]
92. Peters, A.; van der Werff, E.; Steg, L. Beyond purchasing: Electric vehicle adoption motivation and consistent sustainable energy behaviour in The Netherlands. *Energy Res. Soc. Sci.* **2018**, *39*, 234–247. [CrossRef]
93. Jaiswal, D.; Deshmukh, A.K.; Thaichon, P. Who will adopt electric vehicles? Segmenting and exemplifying potential buyer heterogeneity and forthcoming research. *J. Retail. Consum. Serv.* **2022**, *67*, 102969. [CrossRef]
94. Koller, M.; Floh, A.; Zauner, A. Further insights into perceived value and consumer loyalty: A "green" perspective. *Psychol. Mark.* **2011**, *28*, 1154–1176. [CrossRef]
95. Griskevicius, V.; Tybur, J.M.; Van den Bergh, B. Going green to be seen: Status, reputation, and conspicuous conservation. *J. Personal. Soc. Psychol.* **2010**, *98*, 392–404. [CrossRef] [PubMed]
96. Corral-Verdugo, V.; Bonnes, M.; Tapia-Fonllem, C.; Fraijo-Sing, B.; Frías-Armenta, M.; Carrus, G. Correlates of pro-sustainability orientation: The affinity towards diversity. *J. Environ. Psychol.* **2009**, *29*, 34–43. [CrossRef]
97. Laroche, M.; Bergeron, J.; Barbaro-Forleo, G. Targeting consumers who are willing to pay more for environmentally friendly products. *J. Consum. Mark.* **2001**, *18*, 503–520. [CrossRef]
98. Oliver, J.D.; Rosen, D.E. Applying the environmental propensity framework: A seg-mented approach to hybrid electric vehicle marketing strategies. *J. Mark. Theory Pract.* **2010**, *18*, 377–393. [CrossRef]
99. Heffner, R.R.; Kurani, K.S.; Turrentine, T.S. Symbolism in California's early market for hybrid electric vehicles. *Transp. Res. Part D Transp. Environ.* **2007**, *12*, 396–413. [CrossRef]
100. Gallagher, K.S.; Muehlegger, E. Giving green to get green? Incentives and consumer adoption of hybrid vehicle technology. *J. Environ. Econ. Manag.* **2011**, *61*, 1–15. [CrossRef]
101. Policarpo, M.C.; Aguiar, E.C. How self-expressive benefits relate to buying a hybrid car as a green product. *J. Clean. Prod.* **2020**, *252*, 119859. [CrossRef]
102. Kohlová, M.B.; Urban, J. Green Consumption Signals Altruism and Elevated Social Status. 2. PsyArXiv Preprints. Available online: https://osf.io/preprints/psyarxiv/2vgex/ (accessed on 8 January 2018).