



Article

# Consumer Responses to Selected Activities: Price Increases, Lack of Product Information and Numerical Way of Expressing Product Prices

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**Abstract:** The importance of constant consumer testing is emphasized in order for companies to deliver the highest value for the quality of products and services. To explain the psychological impact of price on product selection, and other factors that determine consumer behavior, a survey method was applied. When deciding to buy a product, the consumer's perception of the value of selected re-search products (clothing, footwear, children's equipment) is crucial and it can often differ from the value derived from the price set by the seller. The conducted research proved that sellers can really influence consumers' decision to buy a product with their price, and that a large number of consumers perceive the price incorrectly and thus buy more than they planned. Having in mind the subject of this paper, the basic scientific goal was to define a consumer model that integrates factors (variables) influencing consumer behavior to answer the question of how and why consumers react to rising product prices, how much they use the importance of information about product quality as a parameter of the decision, and how much consumers when choosing a product notice the price ending in a different number from the number of zeros. As consumer behavior is strongly influenced by a number of factors, it can be defined that the consumer's response to selected activities: price increases, lack of product information and numerical way of expressing product prices may not contain all factors and their relationships and simplifies the picture of the consumer model. In order to test hypotheses about the extent to which customers are sensitive and willing to replace a product with certain substitutes, i.e., how willing they are to conclude about a product they buy based on price if they do not have enough information about the product and how much zeros are favored by consumers when shopping, an empirical study was conducted on a sample of 214 respondents. The results of the research indicate that in moments when respondents do not have enough information about the product, they are not inclined to draw conclusions solely on the basis of price, and prices ending in odd numbers or non-zero are not more attractive than those ending in zero.

**Keywords:** consumer behavior; the impact of prices; the impact of factors on purchases



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## 1. Introduction

The price is one of the most important factors of the marketing mix, and it represents the value of the product bought by the consumer. After consuming selected re-search products (clothing, footwear, children's equipment), the consumer feels either satisfied or dissatisfied with the item. Accordingly, the price has a psychological influence on consumer behavior. Perceived product quality is the consumer's judgment on the overall excellence of the product and represents a subjective dimension related to consumer personal preferences, and the main determinant of consumer willingness to buy. The price of a product is a complex stimulus that signals to consumers the cost that the consumer must accept if he wants to obtain the observed product, but they also represent very important information based on which they conclude about the product they buy. This demonstrates that, as a factor of the marketing mix, the price has a great influence. In order to achieve long-term

success, companies must insist on retaining their existing customers, and increase the number of consumers loyal to the company's brands (Daniel et al. 2020). Brand loyalty enables the company to reduce marketing costs (Naravan 2021). Consumers loyal to brands are less price sensitive and willing to pay higher prices (Hoppe 2021). Loyal consumers also spend more than disloyal consumers (Naravan 2021). The aim of this paper is to investigate the relative impact of preference for quality and sensitivity to price on preference and loyalty to a particular product, and the replacement of the desired product with a substitute. The research was conducted in the Croatian environment, where this issue is insufficiently researched. There are several implications of the survey results for managers.

The results of the research make it possible to identify the relative importance of price and quality for brand loyalty. The results obtained in the research can be interesting to companies that target price sensitive consumers and those companies that create a price competitiveness strategy, as well as companies that develop top quality products and target consumers who consume high quality products. In accordance with these approaches, managers can more effectively create product positioning strategies in the market. Data were collected by survey research and processed by a number of statistical methods. Consumers not only do not have complete information about all the offered possibilities that could satisfy a need or desire, but they are often not able to conclude about the quality of the observed product until they buy and try it. In addition to the price, consumers take into account the brand of the product, the country of origin, the intensity and form of advertising activities, product design, packaging, warranty. For the purposes of this paper, the following are included in the consideration: the amount of information that the consumer has when buying and the way of expressing the price of the product, or how odd or non-odd numbers in product expression are more attractive than those ending in zero. From this follows the main goal of the paper: how much consumers are willing to conclude about the product they buy based on price if at the time of making a purchase decision, do not have enough other information about the product and how much they are willing to favor prices ending in odd numbers or nonzero. The most important goal of the paper is to find out if they are ready to replace a product with a certain replacement when they do not have enough information about the product.

## 2. Theoretical Review of the Experience of Price by Consumers

'To manage the marketing-mix is to create a combination of product, price, distribution and pro-motion that satisfies the needs of certain consumer groups and market segments in the best possible way' (Previšić and Ozretić-Došen 2004). Before defining a model of consumer behavior, it is necessary to first define the very concept of the model. According to (Schiffman and Kanuk 2007), a model is a representation of reality designed to show the relationships between the various elements of the system or process being explored. When predicting consumer behavior, marketers often use models Experimental Psychology, Clinical Psychology, Developmental Psychology, Human Ecology, Microeconomics, Social Psychology, Sociology, Macroeconomics, Semiotics / Literary Criticism, Demography, History Cultural Anthropology describing how the individual customer behaves in shopping and encompasses all elements related to behavior in a real environment (Kesić 2006). According to (Assael 1995), models of consumer behavior derive from factors that lead to buying behavior and assume the relationship of these factors to human behavior. Models make a valuable contribution to consumer behavior, as they represent an attempt to see why human beings, and therefore consumers, rationalize their purchasing decisions (Ladipo and Nwagwu 2014; Omotoyinbo et al. 2017). Consumer behavior patterns generally refer to "point of view" or perspective with respect to how (and why) individuals behave in a particular way (Schiffman and Kanuk 2007). Their goal is to show consumer behavior and link it to certain stimuli that are in any way encouraged or related to consumer behavior. Thus (Teng and Laroche 2007) discount on price affects the consumer and increases the degree of consideration of the purchase; (Kotler and Keller 2012) believe that consumers base their purchase decision on a perception of price and a perception of its real value.

Furthermore, (Sahaf et al. 2013) believes that the intention of retailers in designing an odd price is to make the price significantly lower than it actually is. As such, the price has a psychological impact on consumer behavior, which is precisely why companies use it in a symbolic way—by increasing the price of their goods and services, said companies create a perception of a high-quality product in the consumer’s mind. In the same way, by lowering the price, companies attract buyers who wish to save money. This is why, as an element of the marketing mix, the price has a very powerful influence (Dibb et al. 1995). Determining the so-called ‘right price’ is key to successful business results, whereas setting the price too high or too low might ruin the company. Therefore, a good strategy is crucial. Creating such a strategy should encompass a detailed analysis of the company’s suppliers, customers, competition and substitutes available on the market (Previšić and Ozretić-Došen 2004).

According to the literature, the search for information and the perceived benefit of promotion are dimensions that significantly affect the cognitive component of consumer behavior. Therefore, the search for information, as well as the perceived benefit of product information that they intend to buy, seeks to show the importance of information for consumers in the context of economically rational behavior and efforts to reduce ignorance to a minimum. The questions in the survey were formed with the help of statements that were used in the previous research (Laroche et al. 2001), (Lee and Kim 2008), and the authors own statements were additionally used in this research. It is important for retailers and marketers to investigate the behavior of those consumers who seek to buy and try new and different products, i.e., who are inclined to buy products at promotions or as substitutes if the product they buy has increased in price; adapted and taken from: (Laroche et al. 2001), (Ailawadi et al. 2001), (Olsen et al. 2014) and (Irani and Hanzaaee 2011).

Consumer behavior is a young scientific discipline which explains different factors that surround the consumer and influence their purchase behaviors. It is important to note psychological and emotional factors that influence the consumers; furthermore, it is crucial to create a consumer-company relationship based on loyalty in order to reduce the consumer’s price sensitivity when it comes to the said company’s products (Grbac and Lončarić 2010). Since people have been consumers since birth, their behavior is constantly changing. The reason for this is the continuous influence of a large number of variables. In order to facilitate the understanding of consumer behavior, models of behavior that meaningfully link the variables of influence interacting in consumer behavior have been developed. The consumer is daily influenced by social factors, such as culture, social class, family or situational factors. By sharing interests, values and exchanging information, individuals are consciously or not, under the influence of the society around them: someone close to them, a business partner or an opinion leader. In addition to personal influence, they are of great importance to the group. Motives and motivation, attitudes and perceptions, and personality traits are personal factors that shape consumer behavior. People who come from the same family, culture or social class do not have to have the same knowledge, personality traits or lifestyle. Whether it is tobacco products, alcohol consumption or exercise and a healthy diet, the choice is left to individuals and their lifestyle. Psychological factors are of primary value due to the importance they have on the overall behavior of people in general. The consumer’s perception of the product in itself is also of great importance, as it shows how the consumer evaluates the value of selected research products (clothing, footwear, children’s equipment) independently of the price set by the seller. Taking the price factor into consideration, it has been observed that every consumer has a subconscious lower price threshold and an upper price threshold. The products below the lower price threshold are perceived as low-quality products, whereas those above the upper price threshold are observed as too expensive and unobtainable. There are various methods of encouraging the consumers to shop, such as setting the prices just below the round number or setting a price for a product group that encourages emotional purchases (Kesić 2006).

Psychological pricing is based on emotional reactions. It is more often encountered in retail. Such pricing makes products seem more affordable and more desirable, which, in turn, makes the consumers more interested in buying the product. Psychological pricing encompasses business practices such as setting the prices just below the round number, setting prices for a product group and prestige pricing. Setting the prices just below the round number affects the consumer's perception of the said price or product. It is believed that setting the price at 0.99 cents instead of 1 dollar will improve sales. On the other hand, prices that end in round numbers are mostly used to emphasize the superior quality of the product (Dibb et al. 1995). The odd-even psychological pricing strategy, a common practice in the marketplace which uses certain odd and even digits as price endings (thus CZK 0.99 in CZK 4.99 and CZK 0.00 in CZK 3.00), which have the potential to influence consumers' perceptions of the price or the product (Nagle and Holden 1995). Even though the actual origin of odd even pricing is unclear (Dalrymple and Thompson 1969; Friedman and Ladinsky 1967), the use of odd pricing has been evident for more than 100 years (Schindler and Wiman 1989). A company will use prestige pricing to emphasize the quality and exclusivity of their products, which are only affordable to a certain number of consumers on the market. Setting prices for a product group refers to offering multiple products as a part of one group with the same price. It is believed that this pricing method makes consumers appreciate the possibility to buy multiple products at one price (Previšić and Ozretić-Došen 2004). The theory behind this is that such pricing techniques create a higher demand as opposed to the situation where all consumers are perfectly rational. Despite the fact that such pricing techniques are well established in retail, psychological pricing still remains a controversial research topic. There is no general consensus as to why consumers react to psychological pricing. Three theories were used to explain this phenomenon: the theory of expected choice, rounding the price down, and the theory of comparison.

The level effect—the level effect refers to behaviors and basic processes that cause the consumer to have a distorted perception of the price. Also known as underwriting effects, the level effects describe the way consumers process information on price digits independently of the behaviors and efforts of the company.

Rounding down the prices—the original and most common explanation for the 'unrounded' prices is the theory that consumers tend to mentally round down the prices. According to this theory, consumers perceive the price of 2.99 as closer to the number 2 than the number 3.

Comparison—the alternative explanation of the level effect refers to the 'from the left to the right comparison.' This is actually a direct comparison of two numbers—possibly two prices depicted on the store shelves, or prices on the shelves versus a memorized reference price. Theoretically, consumers tend to compare two numbers by observing said numbers from left to right. Accordingly, let's assume a consumer is observing two pairs of prices: (0.89, 0.75) and (0.93, 0.79). When asked to pick out the pair of prices that offer a better deal, most people picked the 0.93 and 0.79 pair. Actually, both pairs of prices offer the exact same difference (0.14)—the difference in the first pair is even a greater percentage of the original value. One of the explanations of this phenomenon is the theory that consumers compare prices by observing digits from left to right. Different authors approach the problem of pricing and its perception in different ways. (Rao and Monroe 1989) consider that consumers perceive the price as information about the quality of the products they buy. Furthermore, the results of re-search (Tellis and Gaeth 1990) show that consumers choose the brand of a product that will maximize the expected quality, and are willing to set aside a larger amount of money to get the expected quality. (Hanna and Dodge 1995) consider that the price for the consumer, in addition to quantitative assessment, also represents a subjective picture of the symbolic characteristics of the product and of the "self". (Dolan and Simon 1996) believe that the consumer will buy a product whose perceived value is greater than the price. Today a large number of authors (Chapman and Wahlers 1999); (Teas and Agarwal 2000) believe that the higher the perceived quality, the

higher the perceived value of the product. (Hackl et al. 2010) compare the price of a product with the perceived value or benefits that the consumer expects from the purchased product.

Price is a monetary expression of value of a certain product or service purchased by the consumer to satisfy their needs and wishes and in accordance with their purchasing power (Bray and Harris 2006). The trend of fixed product prices arose in modern times, as opposed to the former “haggling”, which may still be present in certain areas. The reason behind setting fixed prices is modern technology, which allows sellers to monitor their consumers and adjust their supply and prices. Price is considered the most important factor of purchase (Anić et al. 2010). Even though there are many other different factors that are to be taken into consideration nowadays, price is still observed as the most important one (Kotler and Keller 2008). The Internet enables a mutual interaction between sellers and consumers—sellers are now able to understand the differences between their various buyers, whereas consumers can now easily distinguish between various sellers by comparing their prices to the prices of hundreds of others on the market, determining the price they are willing to pay and obtaining free products. Price perception is crucial during product purchase—it shows how much the product is worth from the consumer’s perspective, as opposed to the price determined by the seller. Every consumer has a lower price threshold and an upper price threshold. The consumer perceives the products below the lower price threshold as low-quality, whereas the prices above the upper threshold are considered too high. The goal of marketing experts is to try and understand the way consumers perceive prices (Kotler et al. 2014).

Pricing is influenced by internal and external factors. Marketing strategy and the financial strategy of the company are considered internal factors. Marketing strategy refers to the target market (the market segment targeted by the product), positioning (determination of the product’s market placement with regards to competition) and the marketing mix (setting the price based on other marketing elements such as distribution, promotion, and product). Financial strategy refers to pricing in accordance with the incurred costs and financial objectives of the company (Nakić 2014). Consumers, the market and the environment are considered external factors. Other than the price, consumers often perceive the product quality. Price represents the value paid for a certain product by the consumer, and as such, the consumer may be price sensitive (Bevanda et al. 2017). The market refers to pricing the products with regards to the competition—the company may increase, lower or maintain their prices with regards to other competing companies. The company sets their prices in accordance with its environment. The economy has a very significant influence on the prices, and so do government price regulations and consumer and environment protection laws. Pricing also depends on distribution channels utilized to get the product to the consumer. Distribution costs have a direct influence on the product price (Dobrinić and Gregurec 2016).

Consumers react to psychological pricing conducted by marketing experts and sellers and therewith determine which products they wish to buy. The psychological pricing phenomenon can be explained through the image effect and the level effect, which are further defined in the following subchapters. Since psychological prices are regulated by certain rules, especially by the fact that they’re always set a minute amount below a round price, they should intuitively be more resistant to the price changes caused by changes in the economic environment (e.g., an increase in the prices of primary products or transportation costs, inflation etc.) (Penava Brekalo 2010). In-deed, an increase in the product price, where said price climbs from one psychological price to the next represents a significantly diminished utility for the consumer. For example, an increase in price from 1.49 to 1.99 equals a 33% total increase. Along the same line, lowering the price from one psychological price to the next may result in serious losses for the seller. Accordingly, psychological price should be more rigid than other prices. It has been determined that the points of psychological pricing form one of the 12 determining factors in rigid prices (Blinder et al. 1998). Price rigidity has been defined as the mean amount of time during which the product price remained un-changed (Powers and Powers 2001). Similarly, when

determining the importance of psychological pricing one can observe their concentration ratio: the ratio of sold quantities of a certain product at a certain pricing point to the total quantity of the product sold. Do psychological prices affect price rigidity in real life? Herrmann and Moeser have investigated this matter on the German market, precisely in food retail (Herrmann and Moeser 2006). They have collected detailed scanner data pertaining to the German food industry sector and going back 144 weeks. The obtained data encompassed 38 stores that originated from 6 retail companies, and contained information such as quantities sold, product prices, product names and packaging sizes. A subset containing 20 products from the breakfast category was chosen. The obtained results showed a significant degree of price rigidity: the price rigidity median per product varied from 8 to 134 weeks in different stores. The total price rigidity median for all products and stores was 18.9, and therewith, the effect of psychological pricing, i.e., rigidity was defined.

Prices based on the image effect are important to products such as expensive clothing or perfume. The real price of such products may be low, but the price displayed on the in-store price tag is typically high in order to enhance the perception of product quality. The image effect is characterized by two mutually connected factors: price and quality (Solomon et al. 2015). Highly priced products are also considered high-quality products. If information on the quality of a certain product is available, its price automatically becomes a less important factor in the process of quality determination. On the other hand, if no such information is available, the price itself becomes the most important factor in quality determination (Kotler et al. 2014). The image effect refers to altering the consumer's perception so that the prices that end in a nine are considered more affordable than the prices that end in a zero. This pricing method can often be deceitful to the consumer (Hoelzl and Kirchler 2005).

The level effect refers to psychological methods used to distort the consumer's price perception. Ways of achieving the level effect are as follows: Processing the prices from left to right—consumers perceive the price of 199 dollars as closer in value to 100 than 200 dollars. This price looks more affordable when compared to the rounded-up prices. Rounding up the final price digits to the number 9 makes consumers perceive such prices as more affordable than prices that end in a 0 and believe this product is cheaper. This method is not encouraged when selling luxury items. Prices that end in a 0 or in a 5 are often found on the market because consumers find them easy to remember. This method can generate good results when combined with the 'On Sale' sign (Kotler et al. 2014). The price is for consumers, first of all, the primary monetary cost to which they are exposed in the purchase process and, in this context, the price is for consumers a limiting variable that negatively affects the probability of purchase because paying a price reduces the consumer's level of discretionary income. Apart from differing in how they will perceive the price in certain situations (primarily as a monetary cost or as information about product quality), consumers also differ in how much importance they attach to the price when deciding to buy a product, which can be explained by their price sensitivity.

Apart from the prices that end in a 0 and a 5, one can also often encounter the number 9. According to the research conducted by Schindler and Kirby, 27% of all prices in dollars end in the number 0, 19% end in the number 5 and 31% of all prices in dollars end in the number 9. Research results for the German market have been similar: 13% of all prices ended in the number 0, another 13% ended in the number 5, whereas 45% of all prices ended in the number 9. This pricing method is considered psychological pricing and can be conducted in 2 ways: by only altering the last digit in the price, or by altering all the digits in the price apart from the first one (Hoelzl and Kirchler 2005). Given how much psychological prices are present in retail, it is to be expected that experts agree that psychological prices work and that there is solid evidence to show that such prices have a positive effect on increasing sales. However, this is not entirely true. The theory of psychological prices is controversial. Some research shows that customers have a very sophisticated understanding of actual price and relative value and that they behave rationally when shopping. Other researchers argue that this ignores the irrational nature of the phenomenon of psychological prices and

that accepting the theory requires belief in a subconscious level of thought processes, a belief that economic models often deny or neglect. The results of the research using modern scanner data are also mixed. The research mentioned so far has all proven the effectiveness of psychological prices, but there are also studies that have not come to the same results. Another important study is (Thomas and Morwitz 2005) in which the hypothesis was con-firmed that odd prices achieve the desired psychological effect in customers only if they lead to a reduction in the left digit of the price. (Wadhwa and Zhang 2015) in their re-research came to the conclusion that round prices are better used for luxury and hedonistic goods because customers are willing to pay more for such products, and round prices signal to them that it is a quality product. Of the research that has not been mentioned so far, (Thomas et al. 2010) concluded that precisely determined prices can lead to increased sales because products with such prices in certain situations seem more affordable than products with a lower but round price.

Most papers correlate price with the perception of value, cost and quality, while in this paper, the price is approached as the most important factor that plays a crucial role in buying a product. The price of a product can attract the consumer and encourage him to buy the product, but it can also dissuade him from buying the product. When buying a product, the consumer forms a reference price frame, so the focus of the research is the extent to which consumers react to the price 0.00 or 0.99. Price in this research refers to the process in which the consumer receives incentives and interprets his or her own economic image of price.

### 3. Materials and Methods

Basically, when considering the double role that price plays in the purchasing process, one cannot help but ask the following question: what causes the consumer to perceive price in such a way, i.e., what factors make the consumer perceive price in both its negative and positive roles? These factors serve to explain the consumer's perception of price in both its negative and positive roles during the purchasing process. The purpose of this research is to prove that price psychologically affects consumer behavior. This research was conducted on a sample of 214 respondents.

The objectives of this research were:

- Defining consumer behavior during the purchasing process;
- Researching the psychological influence of price on consumer behavior;
- Researching other factors that might influence consumer behavior.

The following hypotheses were set:

**Hypothesis 1 (H1).** *Consumers are price-sensitive if the price of a product is higher with regards to another product. In this case, consumers are willing to purchase the substitute.*

**Hypothesis 2 (H2).** *If no other information on the product is available, consumers will judge the product's quality based on its price.*

**Hypothesis 3 (H3).** *Consumers prefer prices that end in odd numbers or numbers other than zero.*

As stated, the aim of the research of this paper is to determine the price sensitivity to price change in consumer choice of clothing, footwear and children's equipment and whether consumers are willing to accept a higher price or will decide to buy a particular substitute. Furthermore, it is interesting and important for product placement and positioning to determine the impact of price on quality perception when they do not have enough other information about the product (product composition, raw material production, country of origin, manufacturer's brand, retail image, product design, product attractiveness). More than a hundred years have passed since the establishment of the concept of even-odd numbers and their impact on product selection, and the concept itself requires new research. The questionnaire contains 45 statements with consumer expectations regarding the change

in price, the notion of quality when there is not enough information about the product itself, and the concept of even—odd. In order to confirm or refute the hypotheses, consumers were asked to rate the above constructs shown in Table 1 using the Likert scale from 1 to 5 or from “strong disagreement” 1 to “strong agreement” 5 and 10 particles were excluded for the purposes.

**Table 1.** Overview of selected constructs to prove the hypothesis.

<b>Search for Product Information</b>	<b>Author’s Research</b>
Flyers/catalogs of shops with clothes, shoes and/or children’s equipment that arrive at my home address are usually not viewed, but thrown away immediately.	author’s own work
I visit different stores to find the best quality product.	author’s own work
Buying a product in a strong image store can achieve good value for money.	Zeithaml (1988); Rao and Monroe (1989); Dodds et al. (1991); Agarwal and Teas (2001)
<b>Seeking price-quality information</b>	
If you do not have any information available about a product other than the price, the high price makes you think it means that the product is of high quality.	Rao and Monroe (1988) according to (Munnukka and Järvi 2012) Tellis and Gaeth (1990)
I believe that a higher price is a measure of product quality.	Cronin et al. (2000)
I believe that a higher price is a measure of product quality. If there is an increase in the price of the product you normally buy, you decide to buy a substitute (replacement product).	Imkamp (2008) Hu and Prieger (2008) Yan and Sengupta (2011)
<b>Behavioral consumer responses to the psychological perception of price</b>	
I always buy the same brand of clothing, footwear and/or children’s equipment, regardless of whether the products of another brand are on the catalog price reduction.	author’s own work
I prefer round prices such as 20.00 euros because it is easier to calculate how much the total bill will be.	author’s own work
The price of a product that ends in 0.99 is more attractive than those that end in 0.00.	Ngobo et al. (2010)
I would rather all prices be round so that you don’t have to pay smaller denominations or get them as a remainder, than that prices end up a penny less than a round number which makes the final purchase bill cheaper.	author’s own work
Prices such as 9.99 euros are more often perceived as closer to 9 euros, than 10 euros.	Dibb et al. (1995)

The research instrument consisted of a set of statements to which respondents responded by expressing their agreement/disagreement, using a five-point Likert scale (1 = strongly disagree; 5 = strongly agree). The collected data were analyzed by a number of statistical methods. The whole process of data analysis took place through the assessment of the reliability and validity of the applied measurement scales and the verification and preparation of data for conducting the *t*-test. The reliability of the applied measurement

scales was assessed using the Cronbach alpha coefficient. In addition, the influence of individual statements on the Cronbach alpha coefficient of the corresponding measurement scale was analyzed, and based on the above analysis, the statements that affect the reduction in the reliability of the corresponding measurement scales were identified. Such claims are excluded from further analysis. Cronbach's alpha coefficients suggest that the reliability of the applied measurement scales is acceptable. T-test for independent samples and analysis of variance were used to determine statistically significant differences in average estimates of the impact of purchase price with respect to selected demographic characteristics of respondents (gender of respondents and with regard to their buying habits regarding clothing, footwear and/or children's equipment (Pearson's correlation coefficient). Hypotheses H1, H2 and H3 were tested using these methods. The *t*-test was used to determine a statistically significant difference with respect to the sex of the respondents, while the analysis of variance tested a statistically significant difference with respect to age and with respect to the prices ending with 0.00 or 0.99.

#### 4. Results

The objective of the introductory portion of the results discussion was to gain insight in the structure of the respondents. The initial five questions referred to personal characteristics of the respondents and showed us that the majority of the respondents—183 persons (85.5%)—were female, whereas the remaining 31 respondents identified as male (14.5%). The majority of the respondents were between the ages of 21 and 30 (62.6%). Furthermore, the majority of respondents were high school graduates (34.6%) and college graduates (34.1%). When reviewing the employment status of the respondents, 57.9% said they were employed. 33.6% of respondents declared that their available monthly funds usually range between 550 and 820 Euros, whereas 77.6% said they usually shop at least once per week. Furthermore, 11.7% respondents said they usually shop 2–5 times per month, 9.8% declared they normally shop once every month and 0.9% said they only go shopping once every 2 months.

For the purposes of this research, a chi-squared test has been conducted in order to determine whether consumers choose prices that end in 0.99 significantly more often than prices that end in 0.00. The question 'Which of the following prices seems the most appealing to you?' offered 5 possible answers (1.99, 2.00, 3.99, 4.00, 5.99). Since consumers typically choose lower values precisely because they are lower and not necessarily due to the digits they end in, statistically significant deviations of 20% from each chosen answer would indicate a lower price preference. Therefore, the answers ending in '99' were placed in one answer group, whereas the answers ending in '00' were placed in the other. This way both higher and lower prices were placed inside the same group, thus avoiding the possibility of choosing an answer solely due to its lower value. The only potentially remaining effect was henceforth the effect of choosing a certain price solely due to the digits it ends in. Since three of the possible answers ended in '99' and two ended in '00', we expected the '99' digits to be chosen in 60% of the cases and the '00' in 40% of the cases. The chi-squared test was used to check the deviation in frequency of responses to the question on the substitution of preferred product due to an increase in its price. There has been no significant deviation noted in the frequency of answer 'You decide to purchase the substitute product' as opposed to the 'I continue to purchase the product out of loyalty' ( $\chi^2(1) = 0.075, p = 0.838$ ). These results do not support the Hypothesis 1.

This section contains several important parts of the research. It provides a concise and precise description of the experimental results, their interpretation, as well as the experimental conclusions that can be drawn.

The reliability of the applied measurement scales was assessed using the Cronbach's alpha coefficient. The influence of individual statements on the Cronbach's alpha coefficient of the corresponding measurement scale was also analyzed, and based on the above analysis, the statements that affect the reduction of the reliability of the corresponding measurement scales were identified. The inner consistency of claims with Likert-type

responses is a little bit above the marginal value 0.7 (Cronbach’s  $\alpha = 0.749$ ), when it comes to buying a substitute in the case of an upward price change, when they don’t have product information, they make a decision based on the price-quality ratio (Cronbach’s  $\alpha = 0.652$ ), and prices that end in odd numbers and are different from zero are favored by consumers (Cronbach’s  $\alpha = 0.795$ ). The results of the analysis of the reliability of the isolated factors show satisfactory results, the Cronbach’s Alpha coefficient ranges between 0.652 and 0.795. The third factor has the highest reliability coefficient (0.795), while factors one and two have a slightly lower coefficient (0.652 and 0.749). The reliability coefficient for the first factor shown in Table 2 is not high, but it is satisfactory when it comes to exploratory research. In Table 2. the results of selected particles from the construct are presented in order to determine the reliability of the measuring instrument, the Cronbach Alpha coefficient indicates the high reliability of the applied measuring scale, i.e., they are confirmed as valid instruments for measuring the attitudes and opinions of respondents.

**Table 2.** Cronbach Alpha Coefficient.

Measuring Scale	Cronbach Alpha	Number of Claims
The purchase of a substitute in the event of a price increase	0.749	10
When they don’t have product information, they conclude based on a price-quality ratio	0.652	10
Prices that end in odd numbers and are different from zero are favored by consumers	0.795	10

Perceived benefits of additional product information such as product properties, product performance, product brand, store image, promotion and product brands, but also stores themselves belong to the cognitive aspect of consumer behavior, and play an important role in consumer responses, in situations where the same they try to maximize the benefits of the purchase and do not have enough information, and judge based on quality (Table 3).

**Table 3.** Descriptive data pertaining to claims and Likert-type responses (N = 214).

Claim	M	SD	C	D
1. You buy products you don’t need because they’re currently on sale.	2.90	1.25	3	3
2. You’re attracted to products placed on the ‘reduced prices’ shelves.	3.57	1.05	4	4
3. Prices that end in 0.49 and 0.99 are more appealing than those that end in 0.00.	2.88	1.39	3	3
4. You only buy products that are currently on sale.	2.54	1.06	3	3
5. You monitor the sales catalogues and buy products at lower prices accordingly.	3.27	1.31	3	3
6. You perceive a higher price as a quality measure.	2.64	1.15	3	3
7. If no other information on the product is available, you believe that its high price equals its high quality.	2.49	1.23	3	1
8. You choose to purchase a substitute product if there’s an increase in the price of the product you usually buy.	2.98	1.15	3	3
9. You plan your purchases in accordance with your budget.	3.52	1.09	4	4
10. Even though your budget doesn’t allow it, you continue to purchase certain products after an increase in their prices.	2.76	1.16	3	3

Note: M—arithmetic mean, SD—standard deviation, C—median, D—dominant value.

Table 3 provides descriptive statistics on the impact of price on the purchase intent. According to the results shown in Table 2, it can be concluded that the statement “You

are attracted to products displayed on the shelves by discounts and promotions” rated  $M = 3.57$  ( $SD = 1.05$ ), and the statement “You follow the catalogs of promotions or seasonal promotions and therefore you buy discounted products” rated  $M = 3.27$  ( $SD = 1.31$ ). The claim “If there is an increase in the price of the product you normally buy, you decide to buy a substitute (substitute product) rated  $M = 2.98$  ( $SD = 1.15$ ). It can be concluded that respondents adjust their spending to the budget and try to plan it, they are attracted by products that are displayed on the shelves at a reduced price, follow catalogs with information on additional discounts, and if there is an increase in prices, they try to adjust.

Women agree with the claims to a higher degree than men: “You tend to purchase products you don’t need because they are on sale” ( $t(212) = -3.823, p < 0.001$ ) and “You’re attracted to products placed on the ‘reduced prices’ shelves” ( $t(39.83) = -3.7, p < 0.001$ ), as well as “You monitor the sales catalogues and buy products at lower prices accordingly” ( $t(212) = -3.852, p < 0.001$ ). The effects of these deviations are moderately pronounced (between 0.5 and 0.8). The deviations in the rest of the claims are not statistically significant ( $p > 0.05$ ). Table 4 yields results as a consumer response when, due to price increases, the consumer is willing to purchase a replacement product.

**Table 4.** Chi-square test results; the difference in the frequency of responses to the question on substitution of the purchased product due to an increase in its price ( $N = 214$ ).

Due to an Increase in the Price of a Product You Usually Purchase, You:	Number of Responses		Percentage of Responses	
	Noted	Anticipated	Noted	Anticipated
Decide to buy a substitute product	105	107	49.07%	50%
Keep purchasing the original product out of loyalty	109	107	50.93%	50%
Chi-square test results:	$\chi^2(1) = 0.075, p = 0.838$			

The results of the claim “In case of an increase in the price of a product you usually buy, you decide to buy a substitute product” are not statistically significantly different from the mean value “3” ( $t(213) = -0.239, p = 0.812$ ). The results of the claim “Even though your budget doesn’t allow it, you continue to purchase certain products after an increase in their prices” are statistically significantly lower than the mean value “3” ( $t(213) = -2.994, p = 0.003$ ). These results support Hypothesis 1. Table 5 presents the results of the T-test when the consumer makes a decision to purchase a replacement product due to a price increase.

**Table 5.** T-test results for a sample used to determine the willingness to buy a substitute product due to an increase in price ( $N = 214$ ).

Claims	M	SD	t	p
In case of an increase in the price of a product you usually buy, you decide to purchase a substitute product.	2.98	1.15	-0.239	0.812
Even though your budget doesn’t allow it, you continue to purchase certain products even after an increase in their prices.	2.76	1.16	-2.994	0.003

Note: t-results of a t-test ( $df = 213$ ),  $p$ —statistical significance. A deviation from the value “3” was observed.

The amount of the monthly income doesn’t statistically significantly correlate with the continuation of the product purchase despite an increase in its price ( $p > 0.05$ ). On the other hand, a larger budget is statistically significantly, positively and weakly correlated with the persistence in purchasing groceries ( $r = 0.144, p = 0.035$ ), cosmetics ( $r = 0.229, p < 0.001$ ), clothes ( $r = 0.280, p < 0.001$ ), shoes ( $r = 0.267, p < 0.001$ ), children’s supplies and toys ( $r = 0.135, p = 0.048$ ). According to the obtained results, respondents with a larger budget are more persistent in purchasing products despite an increase in their prices, whereas

respondents with smaller budgets mostly aren't. These results support the hypothesis 1. The budget isn't statistically significantly correlated with the persistence in purchasing 'other' products ( $r = 0.107, p = 0.118$ ). Table 6 shows the correlation, using the Pearson coefficient between consumer persistence in buying products despite rising product prices.

**Table 6.** Pearson's coefficients of correlation between the amount of monthly income and the shopping budget and the degree of purchasing persistence despite an increase in product prices (N = 214).

		1.	2.	3.	4.	5.	6.	7.
Monthly income	r	1						
	p							
Shopping budget	r	<b>-0.138</b>	1					
	p	0.043						
Groceries	r	-0.063	<b>0.144</b>	1				
	p	0.358	0.035					
Cosmetics	r	0.045	<b>0.229</b>	<b>0.212</b>	1			
	p	0.517	<0.001	0.002				
Clothes	r	-0.026	<b>0.280</b>	<b>0.209</b>	<b>0.385</b>	1		
	p	0.707	<0.001	0.002	<0.001			
Shoes	r	-0.098	<b>0.267</b>	<b>0.201</b>	<b>0.340</b>	<b>0.779</b>	1	
	p	0.152	<0.001	0.003	<0.001	<0.001		
Children's supplies and toys	r	-0.012	<b>0.135</b>	<b>0.094</b>	<b>0.139</b>	<b>0.175</b>	<b>0.221</b>	1
	p	0.864	0.048	0.170	0.042	0.010	0.001	
Other	r	0.056	0.107	<b>0.144</b>	<b>0.233</b>	<b>0.516</b>	<b>0.475</b>	0.367
	p	0.415	0.118	0.035	<0.001	<0.001	<0.001	<0.001

Note: r—Pearson's correlation coefficient, p—statistical significance. Statistically significant correlations are printed in bold.

Some of the obtained results support Hypothesis 1, whereas some support the zero hypothesis. None of the results contradict Hypothesis 1. Hypothesis 1 states that costumers are price-sensitive and are more willing to purchase a substitute product when the price of the original product is higher by comparison. Hypothesis 1 is herewith partially confirmed. The claims "Do you perceive a higher price as a quality measure?" ( $t(213) = -4.580, p < 0.001$ ) and "If no other information on the product is available, do you believe that a high price indicates high product quality?" ( $t(213) = -6.102, p < 0.001$ ) generated average responses that are statistically significantly lower than the mean value "3", which means that the respondents disagreed with the claims. The question "Do you believe that a higher price equals a higher quality product?" generated average responses that are statistically significantly lower than the mean value "2", which means that the respondents disagreed with the said claim, as well. This contradicts the anticipated results. Hypothesis 2, which states that consumers judge the quality of the product based on its price when other information on the product is not available, was discarded. Table 7 shows the results of the T-test on the propensity to judge product quality when the consumer has no other information about the product than the price of the product.

The T-test for one sample was used to determine whether prices that end in odd numbers or numbers other than zero are more appealing than the prices that end in a zero. No statistically significant deviation was found ( $t(213) = -1.229, p = 0.221$ ). These results suggest the hypothesis should be discarded. Table 8 presents the results of the T-test on consumer perception of prices ending in odd numbers or non-zero numbers.

**Table 7.** T-test results for a sample used to determine the proclivity to judge the quality of the product based on its price when other information on the product is not available (N = 214).

Claims	M	SD	t	p
Do you perceive a higher price as a quality measure?	2.64	1.15	−4.580	<0.001
If no other information on the product is available, do you believe that a high price equals high quality?	2.49	1.23	−6.102	<0.001
Do you believe that a higher price equals a higher quality product?	1.70	0.67	−6.556	<0.001

Note: t-results of the *t*-test (df = 213), *p*—statistical significance. A deviation from the values “3” (for the first two claims) and “2” (for the third claim) was observed.

**Table 8.** T-test results for one sample used to determine the appeal of prices that end in odd numbers or numbers different than zero (N = 214).

Claims	M	SD	t	p
Product prices that end in 0.49, 0.99 are more appealing than those that end in 0.00	2.88	1.39	−1.229	0.221

Note: t-results of the *t*-test (df = 213), *p*—statistical significance. A deviation from the value “3” was observed.

The chi-square test has been used to determine the deviation in selection of prices that end in ‘99’ or ‘00’. Once the effect of lower prices appeal has been neutralized, no statistically significant deviation has been found between the two groups of responses ( $\chi^2 (1) = 0.252, p = 0.615$ ). This result suggests Hypothesis 3 should be discarded. Hypothesis 3, which states that consumers prefer prices that end in odd numbers or numbers other than zero, has been discarded. Table 9 shows the results of the hi-square test, i.e., the deviation in the frequency of answers to the question about changes in purchasing behavior due to the increase in product price.

**Table 9.** Chi-square test results—deviation in the frequency of responses to the question about changes in purchasing behaviors due to an increase in product prices (N = 214).

Which of the Following Prices Do You Find Most Appealing?	Number of Responses		Percentage of Responses	
	Noted	Anticipated	Noted	Anticipated
Prices ending in 0.00	82	85.6	38.32%	40%
Prices ending in 0.99	132	128.4	61.68%	60%
Chi-square test results:	$\chi^2 (1) = 0.252, p = 0.615$			

Table 10 presents the results of the *t*-test as a comparison of the responses to the purchase decision, according to the gender of the respondents.

Hypothesis 1 (“Customers are sensitive if the price of a product is higher than an-other product and are more willing to buy a substitute in that situation”) was tested in 3 ways. The chi-square test determined whether the statement starting with “Due to the increase in the price of the product you bought, you . . . ” gave statistically significantly more answers of the version ending in “ . . . decide to buy a replacement product (substitute)” than of the version ending in “ . . . still buy it out of loyalty.” We would expect an equal number of both answers. *T*-test for one sample determined whether the answers to the statements “If there is an increase in the price of the product you normally buy, you decide to buy a substitute (replacement product)” are statistically significantly higher than the average answer “3”, “neither agree nor I disagree”) and the statement “Although your budget does not allow you to buy certain products after the increase in the price of these products” is statistically significantly lower than the average answer “3”. The Pearson’s correlation coefficient found a relationship between a monthly income and a budget with a degree of persistence in buying a variety of products (groceries, cosmetics, clothing, footwear,

children’s equipment and toys, etc.) despite the price increase. If the decline in income is accompanied by an increased rate of withdrawal, this is considered a sign of readiness to buy a substitute and a confirmation of the first hypothesis.

**Table 10.** T-test results for independent samples used to compare Likert-type responses given by men and women (NM = 31, NŽ = 183).

Claim	Sex	M	SD	t	df	p	d
1.	Men	2.13	1.26	−3.823	212	<0.001	0.730
	Women	3.03	1.20				
2.	Men	2.97	1.17	−3.580	212	<0.001	0.654
	Women	3.68	0.99				
3.	Men	2.61	1.43	−1.171	212	0.243	0.225
	Women	2.93	1.38				
4.	Men	2.26	1.03	−1.620	212	0.107	0.318
	Women	2.59	1.06				
5.	Men	2.45	1.26	−3.852	212	<0.001	0.751
	Women	3.40	1.28				
6.	Men	2.87	1.20	1.210	212	0.227	0.230
	Women	2.60	1.14				
7.	Men	2.55	1.23	0.304	212	0.761	0.059
	Women	2.48	1.24				
8.	Men	2.81	1.14	−0.918	212	0.360	0.179
	Women	3.01	1.15				
9.	Men	3.61	0.95	0.521	212	0.603	0.106
	Women	3.50	1.11				
10.	Men	2.74	1.09	−0.102	212	0.919	0.020
	Women	2.77	1.18				

Note: Complete claims are displayed in Table 7; M—arithmetic mean, SD—standard deviation, t—results of t-tests, df—degrees of freedom, p—statistical significance, d—Cohen’s d.

In order to test Hypothesis 2 (“In case consumers do not have other information about the product, they tend to conclude about the quality based on the price”), t-tests were conducted for one sample to check whether the answers to the claims “You think that a higher price is a measure of product quality” and “If you do not have any information available about a product other than the price, and if the price is high, you think it means this is a high quality product” were statistically significantly higher than the mean answer “3” and whether the question “Do you think that if the price of a product is higher, it is of a better quality” resulted in statistically significantly higher values in responses than the average answer “2”.

As for Hypothesis 3, the sample that examined whether the responses to the statement “Price of products ending in 0.49, 0.99 are more attractive than those ending in 0.00” was statistically significantly higher than the average number of responses “3”. A hi-square test was also conducted to determine whether prices ending at 0.99 were statistically significantly more likely to encourage buying than those ending at 0.00 in the question “Which of the following prices appeals to you the most?” for which 5 different responses were offered (1.99; 2.00; 3.99; 4.00; 5.99). Therefore, answers ending in “0.99” are grouped into one group of answers, and those ending in “0.00” in another. In this way, higher and lower prices were grouped into the same group, and the effect of choosing the answer due to the lower price was canceled, and potentially the only effect of choosing the price due to the amount of linden they end up with remained. As three answers end with “0.99” and 2 with “0.00”, we would expect that those with “0.99” will be chosen in 60% of cases, and those with “0.00” in 40% of cases. 214 respondents participated in the research. There was

no missing data. A statistical significance level of 5% was used. The data were processed by Microsoft Excel (2017) and IBM SPSS 26 (2018).

## 5. Discussion

**Hypothesis 1:** *Consumers are price-sensitive if the price of the product is higher with regards to another product. In this case, consumers are willing to purchase the substitute.*

According to the research results, it is possible to conclude that none of the results disprove Hypothesis 1. This is why Hypothesis 1 was partially confirmed.

**Hypothesis 2:** *If no other information on the product is available, consumers will judge the quality of the product based on its price.*

The claims “Do you perceive a higher price as a quality measure?” and “If no other information on the product is available, do you believe that a high price equals high quality?” as well as “Do you believe that a higher product price equals a higher quality product?” generated responses with an average result below the mean value “3”. This means the respondents disagreed with the claims. The respondents also graded the claims with an average grade below the mean value “2”. Accordingly, Hypothesis 2 was discarded.

**Hypothesis 3:** *Consumers prefer prices that end in odd numbers or numbers other than zero.*

The *t*-test for one sample was utilized to determine whether consumers find prices that end in odd numbers or numbers other than zero more appealing. According to the results, no significant deviation was found, and Hypothesis 3 was thus discarded.

When considering the results of the research, it is necessary to keep in mind certain limitations. There are several factors that can be considered limitations of the research. In the first place, this was certainly a relatively small sample over which research was conducted. In order to further generalize the results of the research, it would be necessary to conduct similar research on a larger sample. Furthermore, the research was conducted on only a few categories of physical products and services, so their limited number can also be considered a limiting factor of the research. The applied research methodology could also have had a certain impact on the obtained research results and can be considered a limitation of the research in this context. Namely, a survey was applied in the research, and the fact that the focus group method was not used in the research can be considered a limitation of the research. From the described limitations and shortcomings of the research, follow the recommendations for future research on this topic. Future research should cover a larger sample. Future research should also cover the categories of physical products and services not covered by this research. In this way, whether the identified effects are present only in the categories of physical products and services included in this study or whether the identified effects can be found in the case of other physical products and services as well would be tested. Finally, future research on this topic should apply a different research methodology, e.g., hypotheses set out in this research to be tested experimentally.

In future attempts to conduct research on similar topics, attention should certainly be paid to the method of collecting respondents’ answers. As the last limitation, narrowly created income classes could be pointed out, which is why it was not possible to draw consistent conclusions about the impact of respondents’ income on the purchasing decision-making process. As a recommendation for future research on similar topics, the scope of research should be expanded so as to examine the impact of the socio-demographic characteristics of respondents, such as gender, income, education and the purchasing decision-making process, and consider whether their impact varies depending on the complexity of the purchasing situation, depending on whether it is a routine purchase, limited problem solving or extensive problem solving, and determine the correlation with price perception.

It is important to keep in mind that the research was conducted in the Republic of Croatia, in the economic conditions of a covert recession after the first “lockdown” of the COVID-19 pandemic period, so it would be potentially interesting to conduct research with the same assumed model in a “more positive” economic and psychological environment. Namely, personal consumption, which certainly includes the purchase of clothing, footwear

and children's equipment (which are the subjects of this research), significantly depends on economic cycles but also on psychological factors and is one of the most important indicators of economic trends, decline in growth and retail spending. In any case, the results of the research provide a new valuable scientific contribution, further indicating the complexity of the research problem, and this primary research can serve as a good basis for new research on the subject, indicating only some of the possible directions, which are the judgement of the purchase, when the consumer does not have enough information but judges based on the image of the store and quality, and the impact of a new concept of even-odd numbers such as 0.49 or 0.66.

Furthermore, a limitation of this research is that it considers the intent of the behavior, not the behavior itself. Although intention is taken as a good indicator of actual behavior and is often used in research, one should be aware that it may not ultimately result in actual behavior. The research for the purpose of this paper included data collection in a certain period of time, after the first "lockdown" of the Covid-19 pandemic, and longitudinal research, i.e., research over a longer period of time would contribute to greater reliability of results. Also, as pointed out, it should be borne in mind that the research covered only three product categories. Further research, in order to generalize the results, should include other categories of products that consumers do not buy often or lack previous purchasing experience that would serve as a kind of reference point in deciding on the quality of the observed product, but also those products which they buy on a daily, weekly or monthly basis. Also, future research should include other product characteristics, such as brand image, country of origin image, point of sale image, packaging and / or basic (internal) product characteristics, in order to determine how much quality perception is affected by price and how much presence other product information. Due to all the above, the results of the research should be considered indicative. The scientific contribution of this paper is reflected in the systematization and critical analysis of relevant scientific knowledge and contributions in the field of consumer behavior, or their responses to selected activity of intent to purchase if there is an increase in price, making a purchase decision if there is a lack of information. way of expressing the price by an odd number. In addition to scientific contributions, this paper has some practical contribution to better understanding consumer behavior when buying clothing, footwear and children's equipment, which can help companies communicate with consumers (for example: highlighting certain product features in advertising, or highlighting certain features product as a supplement to existing product information for easier purchasing decisions, pointing out prices at the point of sale).

## 6. Conclusions

Consumer behavior is a young science discipline that more and more companies are paying attention to. Great importance lies in the research of consumers' wants and needs, with the objective of subsequently satisfying them. Consumer behavior is influenced by numerous factors. When shopping, the consumer's decision-making process is greatly influenced by price as one of the most important ingredients of the marketing mix. Nowadays, marketing experts are using various methods and trying to determine the right price that will encourage consumers to purchase certain goods and services. The objective of this paper was to determine the psychological influence of price on consumer behavior. There are various ways of influencing consumer behavior through pricing techniques. This is why three hypotheses were set in order to reach a final conclusion. According to the obtained results, the first hypothesis ("Consumers are price-sensitive if the price of the product is higher with regards to another product. In this case, consumers are willing to purchase the substitute") was partially confirmed. Due to an increase in the price of a certain product, consumers lower their demand and seek a more affordable substitute. Hypothesis 1 was only partially confirmed due to the higher-income portion of the respondents, who declared they would continue to purchase the product even after an increase in its price. On the other hand, Hypothesis 2 ("If no other information on the product is available,

consumers will judge the quality of the product based on its price”) was discarded. The respondents who participated in this research did not believe that a higher price equals a higher-quality product. Hypothesis 3 (“Consumers prefer prices that end in odd numbers or numbers other than zero”) was also discarded. The reason behind this may also be the fact that the consumers had time to ponder the offered prices or the fact that they were not directly involved in the purchasing process in an in-store environment. This might have caused a variation in results and responses. Even though this research confirmed only one of the three hypotheses, one can conclude that price has an impact on consumer behavior—however, this impact is not significant enough to make consumers use it as a measure of product quality.

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