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**THE INFLUENCE OF PRICE DISPERSION AND PRICE
FAIRNESS IN CHANNEL BOOKING CHOICES AT
TRIVAGO USING STAR RATING ATTRIBUTE: A
SURVEY RESEARCH**

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Proposal Dissertation presented as partial requirement for
obtaining the Master's degree in Statistics and Information
Management

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by

Cláudia Sofia de Sousa Barreiros

Proposal Dissertation of the Master Project presented as partial requirement for obtaining the Master's degree in Information Management, with a specialization in Marketing Intelligence

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ABSTRACT

One of the most important elements of marketing is to understand consumer behavior. Consumer behavior can be influenced by extrinsic cues, namely the variable price, and it is from the interest of companies that the manipulation of those elements can contribute to better management and sales efficiency. Price is a primary factor in consumer purchase decisions, and with Internet proliferation, specifically for the hospitality/hotel industry, the consumer has more access to different prices for the same goods, changing its decision process and the price strategies performed by the companies. Price dispersion is one the results of the massive predisposition of goods in the online marketplaces and it is affecting companies as their products and services are sold through different e-tailers and sometimes at lower prices. Regarding the hospitality industry, there exist online platforms, such as metasearch engines and consequently Online Travel Agencies (OTAs) that ease the price comparison process for the consumer as he can compare different prices for the same hotel room.

This investigation, which is answering a call for research of Kim's et al. (2019) study, aims to provide extension research to previous studies of price dispersion range (wide price dispersion and narrow price dispersion), price fairness, and perceived value, particularly its dimension of quality value. Regarding quality value, it was decided to measure it through the star rating hotel classification in the platform Trivago. To conduct this study was developed a survey, targeting Portuguese people that purchased at least once through travel metasearch engines or OTAs. The data analysis was conducted in SPSS through questionnaires' results with the manipulation of variables.

The results demonstrate that Portuguese consumers tend to prefer the hotel with wide price dispersion in the presence of the star rating feature. Thus, the feature star rating instigates the choice for the cheapest options. Although when choosing the wide price dispersion option they tend to choose the cheapest option, when consumers choose the narrow price dispersion option they tend to go with the more expensive offer. Thereby, it was concluded that the more the consumer feels that the offer is fairer to them, the more he will tend to choose the cheapest offer. These conclusions ideally will help the hotel industry in general and "opens new doors" for future studies. It also intends to add value to market researchers and hoteliers in their understanding of consumer behavior and in finding other ways to attract the consumer.

Keywords

Consumer Behavior; Price Dispersion; Price Fairness; Perceived Value; Quality Value; Star Rating; Online Travel Agencies; Hotel/Hospitality Industry; Consumer Booking Choices.

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LIST OF ABBREVIATIONS AND ACRONYMS

A	Average
B2B	Business to Business
ICC	Intraclass Correlation Coefficient
M1	Moment 1 – the moment in the analysis where star rating is not present
M2	Moment 2 - the moment in the analysis where star rating is present
OTAs	Online Travel Agent/Online Travel Agencies
SPSS	Statistical Package for the Social Sciences
SD	Standard Deviation
WOM	Word-of-Mouth

INTRODUCTION

Marketing is a wide area with many components that are crucial for a good performance of a brand. However, the understanding of consumer behavior is becoming more important for marketing managers to explore, and then, to enhancing brand value. Thus, to improve sales and marketing efficiency, it is necessary to understand what will affect the consumer decision of buying a service or a product, so that sales and marketing managers can better manipulate those factors.

Brand image, perceived price, and perceived value are important determinants in influencing purchase intentions (Lien et al., 2015). Price is considered a primary factor in this matter of consumer purchase decisions. In the hospitality/ hotel industry, price dispersion is mainly defined as the difference between the lowest and the highest price in a distribution platform presented by different channels for the same hotel room (FONTE). With the Internet proliferation and technology development products and services are being sold through different sellers at different prices causing price dispersion, especially in online marketplaces. The consumer purchase process has evolved since these changes in price strategies have resulted in higher price transparency of goods and lower search costs, as consumers have easy access to almost every price information without much effort.

With product exposure that comes with Internet evolution, there are services, as Online Travel Agencies (OTAs) that were developed to take advantage of such exposure. The Internet is increasing the competition in online markets and this competition is inducing higher price dispersion, which if not controlled, can affect the hotel's performance. In the hotel/hospitality industry, there are online platforms mostly addressed as metasearch engines that provide ease of price comparisons (such as Trivago, Google Hotel Ads, and TripAdvisor) and in which the consumer can purchase an offer in an OTAs (such as Booking.com, Expedia, HotelBeds). Price dispersion is an issue that was found to influence consumer purchase choices (J.Kim et al., 2019; Wood, 2019) and a concept that is still important to explore to better reach the consumers.

The impact of price dispersion on consumer behavior was studied in the literature review and is presented in table 1. Among the referred studies e is highlighted Kim et al. (2019) by being the base (the same structure and procedure) of the present investigation.

Table 1 - Price Dispersion impact through studies

	(Kim et al., 2019)	(Pan,et al., 2004)	(Kim et al., 2014)	(Wu et al., , 2015)	(Biswas & Burman, 2009)	(Baylis & Perloff, 2002)
Price Dispersion Impact through Studies	<ul style="list-style-type: none"> -Consumers prefer a hotel with wide price dispersion to a hotel with narrow price dispersion. -Price range(wide price dispersion and narrow price dispersion) influence the estimated high regular price -Preference for wide price dispersion was lower when the final destination was uncertain. -Uncertainty impacts consumer choice when faced with various price strategies. -Price dispersion has a high effect on the preference of booking choice 	<ul style="list-style-type: none"> -Price dispersion is high and differs across different retailer types; -Bundling may make price comparison more difficult for the consumer and then conduct to higher price dispersion; -Omitting bundled products can decrease the competing component products and then conduct to a lower price dispersion; -Price dispersion is expected to persist, and online markets are not perfect. 	<ul style="list-style-type: none"> -They studied price dispersion among online and offline channels and its relation to hotel performance; -Price dispersion is proven to have a negative influence on hotel performance in online channels; -Consistent price strategy will reduce competition among channels and improve hotel performance; -Online channels transparency: more last-minute booking and less hotel industry profitability. So, controlling price dispersion levels is from the interest of hotel managers 	<ul style="list-style-type: none"> -Price dispersion harms perceived value; -Price dispersion can positively influence perceived risk; -Price dispersion happens when there is a wide range of sellers and the services have various trustworthiness levels. 	<ul style="list-style-type: none"> -High price dispersion in online markets generates a high perceived risk and therefore the consumer will not tend to choose the retailers with higher price ranges due to internet security and privacy matters, they prefer to choose a well-known retailer. 	<ul style="list-style-type: none"> -Transaction costs in the online markets are high because the consumer spends a lot of time searching for the best deal and sometimes has to face not-so user-friendly platforms. As the transaction costs are higher the price dispersion increases because of the firms' discrimination for consumers and their internet footprint.

My motivation for this research was to investigate the price dispersion concept and its impacts on consumer behavior, beginning my research thinking process as displayed in figure 1. Thus, after acknowledging the literature review, Kim's et al. (2019) study provided important insights regarding this concept. Additionally, other existing studies also highlighted an interesting relation between price dispersion and price fairness, as the latest, also impacts the consumer behavior during Internet purchases, having a positive or negative impact.

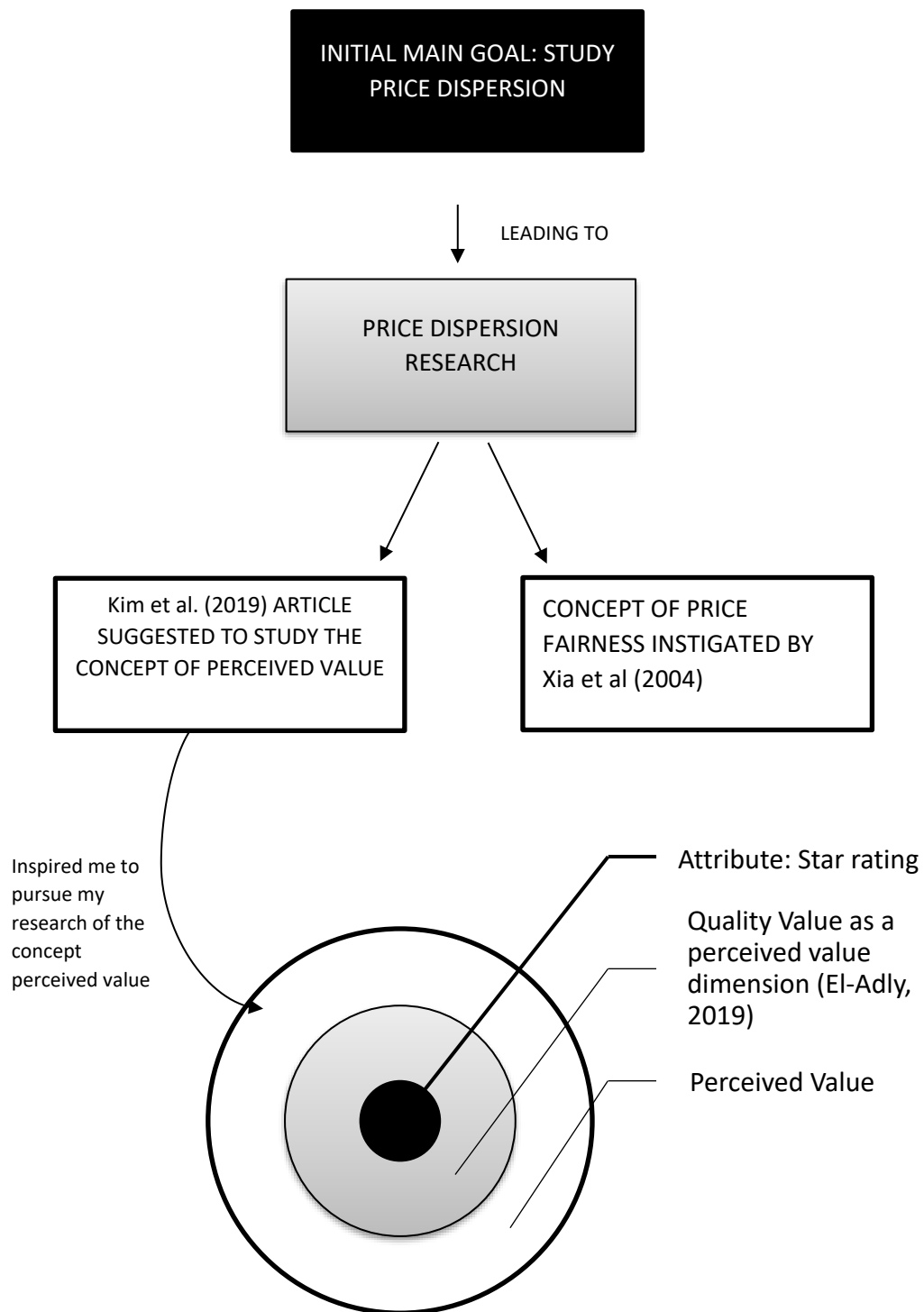


Figure 1 - Research thinking process

Based on Kim et al. (2019) suggestion, the perceived value was indicated to be related to consumer behavior. As perceived value can be measured by seven dimensions (El-Adly, 2019), the quality value measure was chosen, and to measure it, the hotel star rating was elected. Therefore, my novel contribution had the purpose to relate the following three concepts: price dispersion, price fairness, and perceived value through quality value measured by the attribute star rating.

Therefore, the following two research questions were raised:

- How does the price dispersion influence the consumer booking choices based on the presence of star ratings?
- How the price fairness influence consumer booking choices based on the presence of star ratings?

Thereby, this study aims to prove that the range of price dispersion and positive price fairness makes consumers change their booking choice. Moreover, it tests the influence of higher price dispersion with the presence of the quality value attribute *star rating*.

In line with Kim et al.(2019), as they studied the effect of price dispersion in the consumer booking choice in OTAs with the manipulation of attributes such as high regular OTAs price and uncertainty (J.Kim et al., 2019). Therefore, my research was inspired by these authors' suggestions identified, meaning: the lack of perceived value variations manipulation to test the price dispersion influence on the consumer booking choice. Inspired by the suggestion of these authors, I searched for the concept of perceived value and identified a study that approached perceived value as a seven dimensions concept (El-Adly, 2019). Hence, the quality value was chosen as the concept to explore in my research as I acknowledged a relationship between perceived value and the attribute star rating present in online shopping. Consequently establishing the objective to prove that star rating could influence the channel booking choice. Pursuing this, I measured the relation between price dispersion of hotel rooms in online marketplaces, using a wide and narrow range of price dispersion as in Kim's et al.(2019), price fairness, and star rating on the consumer's channel booking choices.

It was first developed a pre-test in which I evaluated the variable quality value for the presentation of different star ratings, and accordingly, I concluded that it was logical to proceed with a star rating as a close associate of quality value. Then, it was developed another test survey in which I analyzed the influence of price dispersion, price fairness, and star rating on channel booking choices. The data collected were analyzed with SPSS through a survey analysis.

Being a wide area that figure 2 shows, the conclusion of this study enhances the knowledge obtained from previous studies of consumer behavior and price dispersion effects on the consumer, and ideally, help the hotel industry in general and "opens new doors" for future studies. It is believed to add value to market researchers and hoteliers in their understanding of consumer behavior and in finding other ways to attract the consumer.

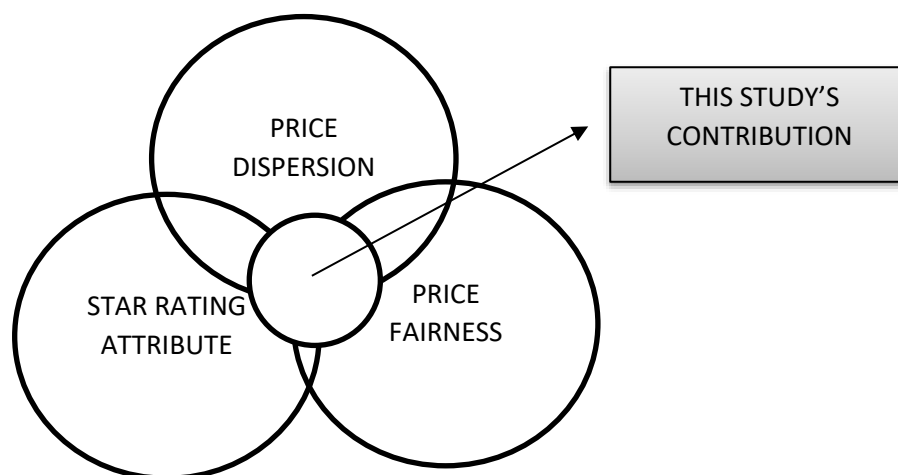


Figure 2 - Research contributions

LITERATURE REVIEW

This primary chapter aims to approach consumer behavior insights focusing on price, booking choices, and perceived value. The area of consumer behavior and its characteristics is especially important for Marketing managers helping to better understand how to approach the consumer and its needs to enhance marketing performance.

Consumer behavior

Pinto (2019) addressed consumer behavior as the set of activities that attempt to address real needs, so when a consumer finds to have a need he finds ways to fulfill that need. When a marketer understands consumer behavior he most probably will be able to develop services and products that enhance consumer loyalty and consequently company performance (D. C. Pinto, 2019). The consolidation of this subject eases the interactions between companies and consumers and thinking of how to deliver value for the consumers becomes an important marketing question (D. C. Pinto, 2019).

Consumer behavior has changed over time and with the proliferation of the Internet, companies tend to become consumer-driven. Platforms must adapt to consumer's needs and desires, being hard for the companies to pick up with constant change. To predict consumer behavior it can be used procedures like big data analysis, such as survey responses, among others.

The marketing performance of a brand or company is enhanced with the acknowledgment of what influences the consumers (D. C. Pinto, 2019). The decision-making process is influenced by internal, social, and cultural influences (D. C. Pinto, 2019). When consumers are evaluating alternatives, they will consider the benefits that they might take from the final decision of purchase (D. C. Pinto, 2019). The purchase intentions and decisions of a consumer are deeply influenced by brand image, price, trust, and value. Purchase intention can be defined as a probability of a customer to purchase a product or service and regarding online markets, in the hospitality industry, the purchase intention is the wish of a customer to make a reservation through an OTAs or Brand.com. Purchase intention is a crucial factor to predict the actual purchase of a consumer(Lien et al., 2015).

When a consumer buys online he passes through an information search phase. In this phase, he evaluates the alternatives available, the price, and the attributes that should be considered(D. C. Pinto, 2019). Following the consumer decision journey, when the consumer decides to buy a product/service he passes through a customer decision comparison where according to the McKinsey model it is characterized by an *initial-consideration set* where the consumers take into account a set of brands according to its perceptions and stimulus, then by an *active evaluation* where the consumers gather information about the brands and compare with one another, and then the *moment of purchase* that is the ultimate choice following with a *post-purchase experience* (Court, Elzinga, Mulder, & Vetvik, 2009).

In this study, the analysis is based on the evaluation phase followed by the moment of purchase. The moment of purchase is overpowered by the hotel pages, OTAs, and metasearch engines. Metasearch engines allow the consumer to book through direct price comparison exposure and they are owned by OTAs (Uenlue, 2017).

Price

Price can be defined as the amount of money that consumers must pay if they want to buy a certain product or service (Zeithaml, 1981), and is one of the most important information the consumer tends to firstly look for is the price. Price is determined by a variety of factors (location, star ratings, size of the property, level of service provided) (Xie & Kwok, 2017). According to Ye et al (2014), price is perceived as an important indicator of the hotel's quality. Price is perceived to be a heuristic cue, meaning that, is to be used as a crucial element when deciding, based on the consumer's previous experience or common sense, resulting in timesaving (J. Kim et al., 2019). This external information cue (J. Kim et al., 2019) is a very important element in consumer purchase decision making and the consumer can extract a good brand's value and quality with price analysis (Erickson & Johansson, 1985; Lien et al., 2015).

Price is then, one of the most important elements that determine consumer decisions in the hospitality service industry (J. Kim et al., 2019; Lockyer, 2005) and one of the most important factors in the complexity of decision making (I. Pinto & Castro, 2019).

With Internet proliferation, the information is more exposed and directly associated with the price transparency that comes through the mitigation of the information asymmetry (J. Kim et al., 2019). Customers have more resources and ways to access the information that they want and with a higher possibility of choice.

Customers demand information transparency regarding the products and services that they are intending to buy, and in most cases, it's a win-win situation for both the brand and the consumer. Consumers tend to have a range of prices that are acceptable for their purchase at a certain product and service, and if the price is lower the hotel will most probably have a better advantage within a competitive scenario, resulting then in higher purchase intentions (Lien et al., 2015).

Hospitality pricing has been proved to influence the quality of the service and consumer's perception of it (J. Kim et al., 2019; Zeithaml, 1981) and it is one of the most important variables that have a high influence on the traveler's willingness to purchase a travel package.

Ainscough (2005) measured the influence of price, agent, and brand on the perceptions that the consumers had on service quality, and the results were that the price indeed influences the quality. The bond between price and booking accommodation is multifaceted, consequently, price determinants are characterized to be tangible, reputational, and contextual. These determinants are found in an interplay between strategic (long-term) and tactic (short-term) dimensions (Abrate & Viglia, 2016).

There are several ways to influence and manipulate the consumer in an online environment, specifically in OTAs and metasearch engines. For example, Davidson & Laroche (2016) approached that showing an external price can change internal beliefs about a product or service, so, this manipulation of internal and external price is very interesting and Kim et al (2019) studied an interesting theory that high-regular price presentation makes a consumer perceives that he is facing a great deal.

Definition of price dispersion

This study aims to analyze the impact of a display of a different set of prices in consumer channel booking choices presented in Trivago for the same goods. From the literature search around this subject, three interrelated concepts come as important: price integrity, price parity, and price dispersion.

In the hospitality and hotel industry, price integrity is mainly defined by the level of disparity that a room or service has in different distribution channels. Delgado (2017) defined price disparity as “Finding a price for your hotel on the Internet lower than what you authorized. It could be a markup not applied correctly or a retail price on which they are reducing part of their commission”. The price disparity is the difference between quoted prices on hotels’ websites and those shown by OTAs and other third-party channels and it is a hard topic to deal with by revenue managers (Wood, 2019).

At the beginning of this study, price parity was used as the main concept due to the company I was working on and to related platforms in which I worked daily had to operate. Although I was familiarized with that concept, I found that there were not many articles that developed a useful study with the concept of price disparity so I could pursue my study.

I then met with the concept of price dispersion, which has an equal meaning as price disparity, and the studies developed across that concept were much more useful. Taking that into account, this study was pursued by using the concept of price dispersion (see figure 3).

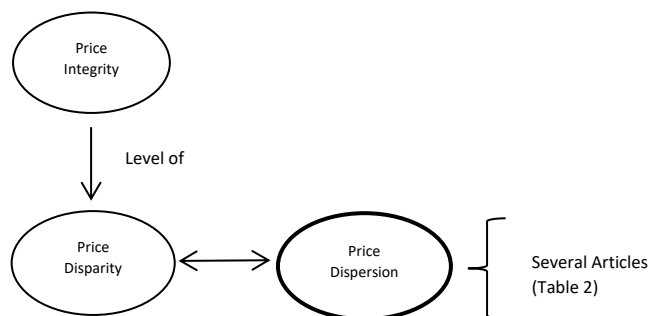


Figure 3 - The three main concepts of Price

Price dispersion is a concept that has been studied by several authors just as shown in table 2.

Table 2 - Price dispersion definitions

Price Dispersion	Definition	Author
	The observed variation in price across retailers	(Clemons, Hann, & Hitt, 2002)
	Distribution of prices, that can be measured by price range or standard deviation of an item when different sellers offer different prices of the same products and services in a given market	(W. G. Kim et al., 2014)
	The variation of price points of the same product	(Xie & Kwok, 2017)
	The variation of price between the highest and lowest prices across different sellers for the same goods and services	(J. Kim et al., 2019)

Furthermore Kim et al.(2019), proved that price dispersion has indeed an influence on online booking choices, and marketing managers are advised to be attentive to this situation(W. G. Kim et al., 2014). Price dispersion affects negatively initial trust and it increases the uncertainty of consumers and a negative attitude towards a set of sellers (Lien et al., 2015).

Reasons to study price dispersion

The concept of price is very important in marketing and consumer behavior knowledge and (Lien et al., 2015) argued that price positively affects purchase intentions. Early in 1977, Salop and Stiglitz exposed that one of the main reasons for price dispersion is exactly the market imperfections (Baylis & Perloff, 2002). Some market imperfections can lead to price dispersion(Clemons et al., 2002) such as: fast customer learning due to the Internet proliferation; Brand loyalty; Variations like products offered in online vs regular channels.

Clemons et al. (2002) in their article, exposed the importance to study these market imperfections and the implication in the pricing strategy of the market, being that it reflects from an increase of informed consumers and price competitiveness(Bakos, 1997; J. Kim et al., 2019).

Later in, according to Kim et al. (2014) and through the literature review that the authors did, it was perceived some reasons for price dispersion: bundle pricing or product line pricing arising from a firm's product differentiation strategy. Price discrimination is another cause of price dispersion, as companies tend to offer lower prices for high-value clients, to retain those clients and get new ones.

This retaining process is centered on the loyalty that those customers gain towards a certain brand, and as a result of that loyalty, a positive word of mouth (WOM in figure 4 - that is the information about products, services, and experiences that is transmitted from consumer to consumer and it is highly enhanced with the advance of technology), creating a wealthy cycle for the relationship company-consumer.

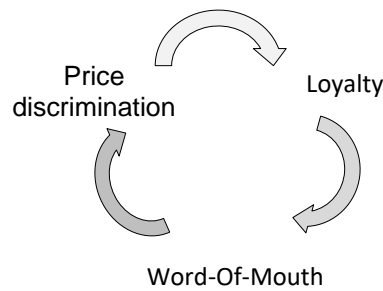


Figure 4 Word-Of-Mouth in a Company-Consumer Relation

Another reason for price dispersion can be the imperfect market information that the consumer has. In that, we can divide the consumers into two types: The uninformed and the informed consumer. The uninformed consumer tends to buy the products in stores with higher prices as long as the product is in their range of the reservation price.

The informed customer is a type of client that usually buys cheaper products because they already know the best deals. The increase in the appearance of those informed customers in the market is resulting in price dispersion.

The fourth reason for price dispersion is the search cost. Online shopping decreases search cost and product quality information, consequently resulting in prices with lower competitive levels. As the author Bakos (1997) said that lower search costs result in lower and more homogeneous prices. As approached before in this literature review, the Internet results in a different search approach, which benefits the customers regarding their search costs and keeps the company with a need for constant monitoring and actualization of what the customer needs at a certain range of time.

As technology gets more advanced and the Internet processes evolved, search costs decrease, and Internet price search intermediate shows to the customer's information about a product or service through different retailers, resulting in a higher informed buyer as explained in the third reason for price dispersion in this literature review.

Another reason for price dispersion collected from previous studies is the random pricing strategy. Random pricing theory is the randomization of prices according to the consumer consciousness of different e-tailers, making the exposure of prices different for each seller. This last theory is in parity with dynamic pricing (which is another reason for price dispersion).

Dynamic pricing is a selling method that is characterized as the state when sellers can at liberty change the price of their goods, services, or products, according to their consumer's habits and preferences. This selling scheme is mostly useful on the Internet, specifically online markets, as the sellers have more access to consumer insights so it is easier for them to collect that data and transform it into useful information for their business profit.

Later, the random pricing theory was found not to be supported as sellers could not change randomly the prices to lower or higher. The additional theoretical reason for price dispersion is uncertainty. According to its article, is perceived as highly correlated with price dispersion and can be characterized as perceptions of transaction risk, search effort, difficulty in perceiving the price (Biswas & Burman, 2009; J. Kim et al., 2019).

An alternative possible reason that is behind the concept of price dispersion is product and service differentiation (J. Kim et al., 2019). It influences the consumer's judgments regarding a service or

product because when both price and quality of the product are high the judgment will be more positive, the same logic applying to low-low comparisons.

However, when the consumer is faced with inconsistencies like a product with a high price but with a low quality associated will not have a judgment from the client (Voss, Parasuraman, & Grewal, 1998), although other studies have shown different results (Baylis & Perloff, 2002).

Price perception and price fairness

Just as stated by Pinto (2019), perception is a very important concept in Marketing because it is the way a consumer sees and is aware of a product or service. Perception may not match reality and a bad perception from the consumers can be very harmful to the brand. Several factors can influence perception development and consolidation, and that can be misleading for the consumers.

According to Zeithaml (1988) price perception is what is given up to obtain a product and it is characterized by three main elements: objective price, perceived nonmonetary price, and sacrifice. Baines & Fill (2014) also explored the concept of price perception. The authors of the book formulated a relation between value, quality, and price, just like Zeithaml (1988) stated that for the increase of customer's perception of value the price has to be lower or quality has to be higher.

It is a cyclical process where it meets antecedents, price perception, willingness to pay, purchase behavior. Price perception is influenced by several factors, but namely and most important the exposure to reference prices, which are the prices that a consumer leans on to when comparing the prices that appear.

Willingness to pay, among various factors, is influenced by the perception of price fairness and price presentation. How do consumers perceive a price proposition as fair and others don't? Price fairness embraces a big spectrum of factors that will influence a consumer to perceive a product's price as fair or unfair. The price fairness of a product is a dimension of the perception of a product, in this case, the price itself.

Price fairness, according to Xia et al (2004) is a judgment from the consumers of whether a difference between a seller's price and other comparable parties is acceptable. Price unfairness perception can be a result of a company that increases prices without the corresponding increase of costs or even a consumer paying more compared to other consumers due to external factors (Xia et al., 2004).

Price fairness can be separated into three different dimensions: distributive fairness, procedural fairness, and affective fairness. Distributive fairness embraces equity, equality, and need concepts. Procedural fairness relates that if an individual feels that an initial price of a product is acceptable the individual is more likely to look at the procedure of cooping the final price as fair.

The affective fairness explores the emotional part of price fairness. This is a very important dimension to be explored as most of the studies developed around this main topic only focus on cognitive aspects and not emotions (Finkel, 2001). Equality can be characterized by two different dimensions: advantaged inequality and disadvantaged inequality (Xia et al., 2004).

That is, according to Xia et al (2004), when a consumer finds a better price than the other consumer, for the same service or product, that particular consumer might have a feeling of guilt. On the other hand, if a consumer feels that another consumer had a better price deal than he had because of a

variety of factors (can be his online search preferences or the time zone he is searching in) he might feel emotions like anger and disappointment.

Value

Perceived value

Price and value are extremely related and have an imperative part of the dynamic of online hotel booking. Perceived value plays an important role when a consumer wants to make a reservation in third-party online booking sites (S. Y. Kim, Kim, & Park, 2017).

It was verified that price has a mediating effect on purchase intentions through value, so, the concept of value is crucial to understand consumers and it is positively associated with behavioral intentions in the hospitality industry (Lien et al., 2015).

Thus, a price that is perceived to be more reasonable, meaning lower in most cases, tends to have a higher customer perceived shopping value. Dodds et al (1991) showed that the appearance of a stated reasonable price results in higher perceived value, then leading to a high purchase intention.

Price dispersion can positively affect perceived risk and consequently influence negatively the perceived value (Lien et al., 2015). Therefore, perceived value is a trade-off between the price and quality perceived by the customer (S. Y. Kim et al., 2017; Wu et al., 2015) and it is a base concept in consumer behavior as the consumer is becoming more value-driven. Perceived value can be measured by the trust a consumer has in a hotel, the value the consumer has towards the hotel, and the quality the hotel has (Chun-Fang Chiang & SooCheong Jang, 2006).

As addressed in Consumer Behavior Insights content description and readings chapter 7 by Pinto (2019), the concept of perception is a huge factor in the marketing area. This concept of perception is the consumer's interpretation of reality and it can be influenced by the person's needs, values, and expectations. This represents a subjective reality but a really important concept to understand so the marketer's knowledge and tactics can improve.

On their daily basis, the consumer receives stimulus that makes them organize their perceptions about a certain matter and then resulting in a process of interpretation with a cognitive and affective parameter, for finally to reach out a conclusion about a certain subject (Babin, Lee, Kim, & Griffin, 2005; Goodale & Milner, 1992; Prinz, 1997).

It is important to analyze the consumer behavior antecedent to the actual purchase because it is the most crucial phase to determine and influence the actual intention (Lien et al., 2015). As stated before in this literature review, brand image, perceived price, and perceived value are determinants influencing purchase intentions (Lien et al., 2015).

Perceived value is very significant when a consumer is booking a hotel room online (S. Y. Kim et al., 2017). Perceived value can be defined as the consumer vision of the utility of a certain product or service grounded on the perceptions of what is received and what is given, thus, is a trade-off between perceived benefits and perceived cost (Ulaga & Chacour, 2001).

Lien et al (2015) approached the concept of perceived value as one of the most important elements influencing consumer purchase intention, and very important to determine customer satisfaction, decision making, and purchase behavior.

Other concepts of perceived value have been exposed and there are three main concepts of perceived value:

- A single-item scale of overall value;
- A unidimensional construct (focusing on money);
- A subjective and multidimensional nature (El-Adly, 2019).

Based on the definition of value – all factors, qualitative and quantitative, subjective and objective, that make up the complete consumption experience- in the study of Schechter (1984) as cited in El-Adly (2019) the concept of multidimensionality in perceived value gains robustness. In the study developed by El-Adly (2019), it was approached this multidimensional definition of perceived value, particularly perceiving this concept as a multidimensional construct instead of a unidimensional one, and to gain robustness in its theory there were considered three main other studies:

1. Nasution & Mavondo (2008) study, exposing perceived value has to have three different dimensions: a reputation for quality, value for money, prestige;
2. Gallarza et al (2015) research, approaching perceived value has a construct of four dimensions: entertainment, aesthetics, ethics, spirituality;
3. Jiang & Kim (2015) investigation, conceptualizes perceived value in green hotels having four dimensions of green benefits (functional, emotional, social, epistemic benefits) and also three other dimensions of perceived costs: monetary, explicit, and implicit costs.

Quality value

Value can be defined as a belief leading to actions according to preferences and the tendency for consumers to focus on maximizing what is received from a transaction in comparison to what is given (D. C. Pinto, 2019). More than ever, the value definition is related to value-conscious consumers that pay much more attention to the resources they put out in transactions and the benefits that come with it, so this is very important in the area of consumer behavior.

Online shopping can present two types of value: utilitarian value and experiential value (Lien et al., 2015). Utilitarian value is the functional benefits like time and price savings, and experiential value is the experiential benefits such as interactivity in online shopping and entertainment. This study is focused on the utilitarian part of the value, as the consumer was manipulated by the value for money and quality value derived by the presentation of hotel rooms in a metasearch engine.

Therefore, the concept of value can differ from different customers and their points of view regarding quality, prestige, and reputation. Thus, different classes of hotels are proved to result in different customer values (Lien et al., 2015).

The consumer tends to book when they feel like they are getting benefits in terms of price and quality of the hotel. Quality is the evaluation of consumers about a product or a service's general excellence, and quality is perceived as one of the key drivers of perceived value (S. Y. Kim et al., 2017). In the hotel industry, quality is influenced by room cleanliness, the convenience of location, value for money, and the friendliness of employees.

Just as explored in the before section **PERCEIVED VALUE**, the article El-Adly (2019) exposes the concept of perceived value as having seven dimensions with not only cognitive but also affective

parameters. The seven dimensions considered in the study are (1) self-gratification; (2) aesthetic value; (3) price value; (4) prestige value; (5) transaction value; (6) hedonic value and (7) quality value.

Most of these variations of perceived value, except for aesthetics and prestige, were proved to have a positive effect on customer loyalty and satisfaction. Therefore quality value, that is the utility derived from the trustworthiness of the service performance (El-Adly, 2019), is an important and interesting variable to analyze in converge with the influence of price dispersion and price fairness in online booking choices.

Star rating

In the hotel industry, one of the determinants of hotel reputation is star rating (X. Hu & Yang Yang, 2016) and it has a negative influence on consumer perceived value of a specific hotel (X. Hu & Yang Yang, 2016). Star rating might be intimately related to hotel prestige values that are directly connected with the quality of the hotel (El-Adly, 2019) and when a consumer is purchasing online, on the booking stage he often notices the overall ratings of the products or services (X. (Simon) Hu & Yang, 2020).

The objectives of hotel star rating have expanded from the purpose of informing customers on basic facilities and are now used to classify hotels according to their quality. The hotel selection process is subject to online pre-purchase research.

Therefore, star rating provides an instant indicator that has a significant impact on the customer's purchase decisions, based on the available information from the different competitors directly affecting the sales growth (Castro & Ferreira, 2018; J. J. Kim, Lee, & Han, 2019; Rhee & Yang, 2015). Considering the study of Kim et al. (2017) and El-Adly (2019) quality is a key aspect of the consumer perceived value.

In Trivago, it is presented information about the hotel (location, clean service, pool, among others) and the percentage of the reviews along with the overall classification of the hotel. Consequently, it is believed for this study that star rating is a feature that determines the quality value of a hotel from the consumer perspective, and as the quality of service improves the perceived value increases, and the customer loyalty increases.

Meaning that, if a consumer sees a hotel in an OTA with a lower classification, the reaction towards the booking channel might be completely different than when faced with a hotel with a much higher classification in an OTA.

Online Markets and its importance

The concept of price dispersion is gaining robustness through the growth of technology and it is found in both offline and online scenarios (W. G. Kim et al., 2014). Although it was expected for price dispersion to be lower with the presence of OTAs and metasearch engines, the reality and other studies portrait exactly the opposite. Authors stated in their articles that price dispersion is higher in online markets than in offline markets (Ancarani & Shankar, 2004; Brynjolfsson & Smith, 2000; Clay, Krishnan, & Wolff, 2001).

In the offline markets, the price differences might go unnoticed and these markets can set prices that are less competition-driven. In the opposition to those markets, there exist online markets. The

Internet growth was expected to reduce price dispersion between markets and to increase the competition and reduction of costs, resulting in higher search rates for the consumer. However, online price dispersion is studied to be much higher than offline price dispersion so this is one of the main reasons why this study is important.

Some studies have found that online markets have lower price dispersion and other studies found that online markets have higher price dispersion (Clay et al., 2001). Independently of the results from other previous studies, price dispersion will always be present in online markets and the only solution would be to control its intensity, even with price transparency and the reduced search costs.

Concerning the hotel industry specifically, more and more customers have changed their way of travel and hotel search from offline agents to online agents. This results from easy access to pricing information, the possibility to compare different prices offered by different sellers, increasing-price transparency in online markets. With this, the customer tends to be more satisfied with his final purchase decision and the hotel will suffer a decrease in the overall price.

Metasearch engines and Online Travel Agents (OTAs)

Hotel rooms can be rented in different ways: Physically at the hotel, Call center, Brand.com (that is the hotel website), and OTAs (see figure 5).

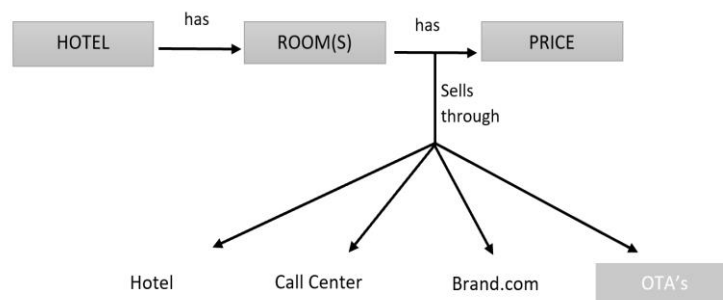


Figure 5 - Hotels selling methods

As information technology grows and changes, the business operations change too, and in the hospitality industry, the hotels have more need to integrate technology systems in their business model. Price strategies need to have different dynamics in the service industry, resulting in new challenges for hospitality and market managers and a big impact on hotel search behavior (J. Kim et al., 2019).

Third-party online hotel booking site, such as OTAs, thrives from those challenges in the hotel and travel industry and the emergence of online price comparison websites, gaining a lot of market share since their beginning around the mid-1990s (J. Kim et al., 2019).

OTAs are channels that offer direct access to online hotel and travel booking services (e.g., Expedia, Priceline, etc.), and if a consumer books through an OTA that has a contract with a B2B, so the end percentage that the hotel receives of the total amount paid by the client is going to decrease (Delgado, 2017).

OTAs provide more benefits to the consumers before making a reservation and those platforms have become more sophisticated and consequently the preferred choice of a consumer when making a reservation (S. Y. Kim et al., 2017). OTAs have the constant mission to always show the client the best price possible and attract him into purchase in that channel (J. Kim et al., 2019). As it reduces the search cost, it was believed that OTAs would not present a big price dispersion between the highest and the lowest price presented for different hotels offering the same level of services and found to be similar (Baylis & Perloff, 2002).

In opposition to what was expected, the core of these platforms is dependent on the dispersion of price, if it was not for that, the OTAs success would decrease as the consumers would not perceive such usefulness in it and its economical solution (Clemons et al., 2002).

Although the study of Clemons is concentrated in Online Travel Market, it helps to highlight the importance of OTAs and to enhance that it is now a substantial characteristic of the online marketplace and a point of contact via the world wide web to allow customers to search for what they need (J. Kim et al., 2019; Pan, Ratchford, & Shankar, 2003).

With the creation of OTAs, there were developed metasearch engines that allow the comparison of channels. This instigates the creation of a lot of sub-channels that sell the hotel rooms at lower prices, making the percentages that go to the hotel even lower, that is not wealthy nor healthy for a hotel in the long term and several measures can be taken to try to resolve this kind of situation.

Trying to look for disparities in meta is a way of catching the channels that are selling hotel rooms at prices lower than they should be. It represents a contractual breach that is not positive for the relationship between the channel and the brand. Channels need hotels and hotels need (more than ever) channels to sell their hotel rooms more effectively and accompanying these modern times, so it should be a relation of mutual respect (Delgado, 2017).

OTAs are in constant competition by showing the best rates to please the consumer's preferences (Clemons et al., 2002). In metasearch engines, different OTAs tends to offer each different types of tickets with different prices, which leads to competition among them to better try to target the consumer's needs.

With the availability of metasearch engines and information comparison plus the easy search process (resulting in more developed searchability) , the consumers are all benefiting from reduced information search costs, mitigation of information asymmetry, and price transparency (Alba et al., 1997; J. Kim et al., 2019).

CONCEPTUAL MODEL AND RESEARCH HYPOTHESES

According to the literature review, it was possible to construct a conceptual model to guide the present research. Inspired by Kim et al. (2019), this research aimed to pursue the study of price dispersion range and the influences on the online booking choices in Trivago.

To give other perspectives and knowledge to the existing studies I added as an independent variable the price fairness and in quality value perceived value dimension, the star rating as an attribute to better manipulates the consumer's final booking choice.

As it is expected in this study and based on the literature (Abrate & Viglia, 2016; X. Hu & Yang Yang, 2016), that the star rating presented in the online platform will influence the quality value of the consumer, meaning that the consumer might feel that they have a better deal when they are faced with more information or it might not have any impact in that.

Therefore, for this study there were created two different dimensions were (M1 and M2):

- **M1** - represents the moment where star rating was not present as an attribute of the offer presentation;
- **M2** represents the moment where a star rating was present in the offer presentation.

Hence, two questions were raised related to these dimensions:

1. Will the presence of star rating in a travel metasearch engine influence the channel booking choice when dealing with price dispersion?
2. Will the presence of star rating in a travel metasearch engine influence the channel booking choice when dealing with price fairness?

Price dispersion and booking choices

With the Internet proliferation and the immersion of price information on online markets, price dispersion is showing more presence within those markets in a way of manipulating the consumer to the best choice of purchase possible.

There can exist a larger difference between the highest price and the lowest price, namely wide price dispersion, and it can exist a smaller difference between the highest price and the lowest price, namely narrow price dispersion.

The changes in price strategies that come with the high market competitiveness and informed consumers, implied that the prices displayed online would be narrower in terms of dispersion (Bakos, 1997; J. Kim et al., 2019). So, the present research proposes that price dispersion influences the booking choices of the consumer, as studied by Kim et al. (2019). Thus, the question imposed in this case is: do **different ranges of price dispersion affect the consumer online booking choice?**

Kim et al. (2019) studied this question and got to the conclusion that people tend to prefer the hotel that presents a wide range because it translates the feeling of getting a great deal. So, following what Kim et al. (2019) concluded, I hypothesize that:

M1

H1: Price dispersion range influences the channel booking choice (figure 3)

H1.a: Wide price dispersion positively promotes the cheapest channel booking choices;

H1.b: Narrow price dispersion positively promotes more expensive channel booking choices.

M2

H3: Price dispersion range has a higher influence on the channel booking choice than M1 (figure 4)

H3.a: Wide price dispersion positively promotes the cheapest channel booking choices;

H3.b: Wide price dispersion positively promotes the cheapest channel booking choices.

Price Fairness

Price fairness is addressed as the acceptable price that a consumer settles with when dealing with price comparison (Xia et al., 2004). When a consumer is faced with price unfairness it is going to affect the behavior towards a certain purchase.

Price unfairness urges a feeling of inequality (Xia et al., 2004). When a person deals with disadvantage inequality the consumer might feel unfairness directed from the consumer to the others and, when a person deals with advantage inequality, the respective consumer feels unfairness towards himself, affecting his consumer behavior.

With this, two questions urge:

- 1. Does the perception of price fairness influence the channel booking choice?**
- 2. Does the perception of price fairness influence the channel booking choice when the star rating feature is present on the booking platform?**

With this study, it was expected to analyze the influence of price fairness in channel booking choice and it is believed that the higher the price fairness the more a consumer is willing to book an expensive offer because he will feel more comfortable with the price disposition. The variable is treated as an independent variable.

M1 (see figure 6)

H2: Price fairness positively influences the most expensive channel booking choices

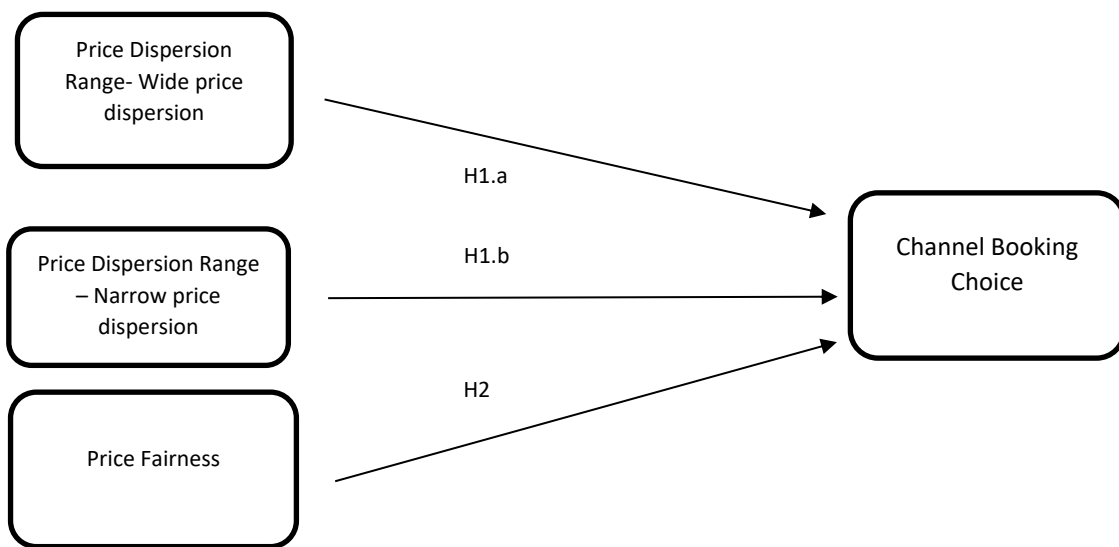


Figure 6 Conceptual Model without star rating M1

M2 (see figure 7)

H4: Price fairness positively influences the most expensive channel booking choices

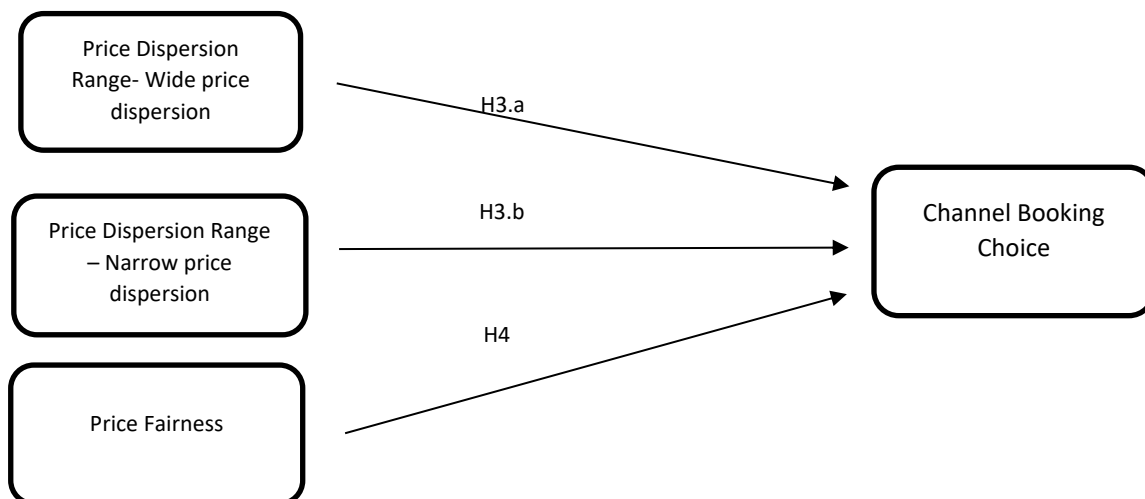


Figure 7 - Conceptual Model with star rating M2

METHODOLOGY

The problem of price dispersion in the hospitality industry and the importance of this research

In the present research, the author is specifically focusing on the online marketplace, more precisely the Online Travell Agencies (OTAs) and analyzes consumer behavior regarding the price strategies applied. In the present study, it is pretended to measure the effect of price dispersion in these online platforms to consolidate previous studies and extend them.

Therefore, the research strategy followed was an extension of an existing study (Hill & Hill, 2016) developed by Kim et al. (2019) as these authors suggested at the end of the article to pursue their study by changing the moderator of the relationship between price and booking choice for perceived value.

It is in the interest of hospitality industry groups to have more knowledge in the area of price dispersion to establish a better relationship with its partners and clients. The present research will give new enlightenment to this industry by studying price dispersion impacting the consumer booking choice and managing moderators and an independent variable to ease the impact of the main relation. So, like Kim's et al. (2019) study did, the present research wants to investigate the impact of the price range on consumer booking choice (J. Kim et al., 2019).

Population

The population and the respective sample of this study are Portuguese people that booked at least once through a meta travel search engine. Checking the data of Turismo de Portugal at travel BI for the year 2019 (www.turismodeportugal.pt), it is possible to conclude that the stayovers in Portugal are mostly occupied by Portuguese people (occupying a slice of 41% in the pie of other nationalities) (Portugal, 2019), which provides a good and valid point for the present research to be focused on Portuguese people.

Also, the study Kim et al. (2019) performed, comprehended people from the United States and, giving another perspective and exploring other types of samples, the present research will solely focus on Portuguese people.

Data collection

Based on Pinto (2019) and Kim et al. (2019) the present research is a scenario-based experimental design, meaning that the respondents will be lead to storytelling as they were purchasing something. The data collection will be performed through an online survey, using Qualtrics as a platform to develop the survey and collect the data.

It is recommended for online experiments to have at least 50 answers per cell, to prevent validity issues (D. C. Pinto, 2018), and based on Kim et al. (2019) the present research will target to have

around 200 answers for the survey. Therefore, and to better promote the successful data collection of the survey, each respondent was assigned as a potential winner of an *Odisseias Pack Gift*.

The survey presented screenshots from Trivago, as it is one of the most used and preferred distribution channels from the consumers' perspective. The hotels that are going to be displayed on the surveys have approximately the same characteristics and attributes.

The similarity of these characteristics is purposeful so that I can get achieve the expected results more accurately. To get to the final survey I went through two tests surveys.

FIRST TEST

In the first one, I divided this study into three phases that were released respectively one after the conclusion of the other (summarized in table 3):

Table 3 - Surveys phases

Phase 1	Phase 2	Phase 3
Evaluate only the price dispersion, price fairness, and the channel booking choice by presenting two screenshots (one with wide price dispersion and the other with narrow price dispersion).	<p>Evaluate the moderators that I wanted to incorporate (quality value and transaction value) by testing quotes with the presence of attributes in the screenshots:</p> <ul style="list-style-type: none"> To evaluate the association of quality value for the different levels of star rating (1-5), it was asked for each hotel, for the respondents to answer some questions in a five-point Likert scale (<i>1=strongly disagree o 5 strongly agree</i>) that were developed according to previous studies(El-Adly, 2019). Even though this variable was discarded, to evaluate the association of transaction value with the price discount presentation in Trivago the respondents were asked to observe the screenshots and then to answer, for each hotel, questions on a five-point Likert scale (<i>1=strongly disagree o 5 strongly agree</i>) that were developed based on previous studies(Chun-Fang Chiang & SooCheong Jang, 2006; El-Adly, 2019; S. Y. Kim et al., 2017; Lien et al., 2015). 	Phase one but with the presence of the star rating attribute. That is, with the exposure of screenshots but one presenting the attribute star rating and the other presenting the attribute price discount.

For each survey, I collected around 30 answers and allowed me to conclude the following: the number of surveys was exaggerated and I could develop my study with only one survey as it made more sense to see the behavior of the same person change along with the changes in one same survey.

Additionally, the variable transaction value was not highly associated with the presence of the discount in the booking platform, so this variable was discarded. The quality value score was higher as the star rating score increased in the survey so I pursued with star rating presentation as a measure of quality value.

SECOND TEST

In the second test, I developed only one survey testing the effect of price dispersion and price fairness on the channel booking choice and also testing that effect with the presence of star rating. It was collected 30 answers for this survey, and the results were significantly satisfactory so I followed with this survey format to release the main and final survey.

THE MAIN SURVEY

People were randomly assigned to respond to this survey in a between-subject experimental design. According to the previous researches (J. Kim et al., 2019), this research is going to approach the scenario-based experiment where is conducted a story for the consumer to feel like he is living the process.

So, respondents are going to be asked to imagine that they want to book a hotel in Portugal, Funchal, and to imagine they were searching for different offers in Trivago. Then, they are faced with two different hotels – Hotel Piscina Palmeira and Hotel Piscina Vista - and are asked to choose a hotel and following to choose the booking channel (according to the channels presented in the screenshot of the chosen hotel).

Hotel Piscina Palmeira presents a wide price dispersion and Hotel Piscina Vista shows a narrow price dispersion.

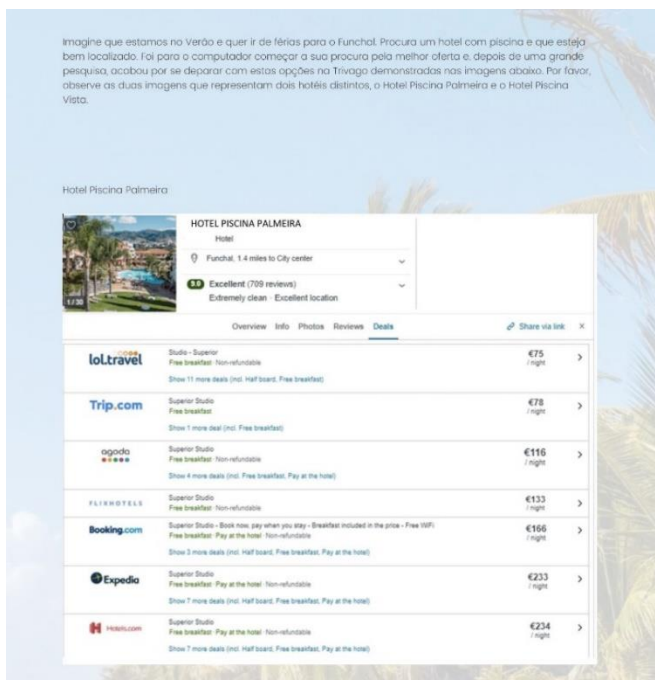


Figure 8 - Hotel Piscina Palmeira showing wide price dispersion

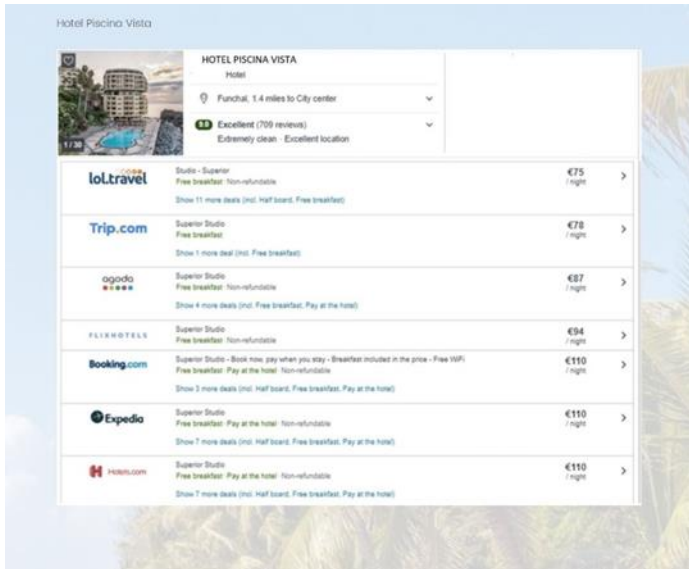


Figure 9 - Hotel Piscina Vista showing wide price dispersion

After that, I added price fairness as an independent variable that may be positively related to the channel booking choice. To analyze the price fairness of the consumer there was developed quotes in the questionnaire based on the concepts of distributive price fairness and affective price fairness. The questionnaire will provide questions to measure price fairness based on the following articles (Kimes, 1994; Martin, Ponder, & Lueg, 2009).

Following this section, and as a distraction method, the respondent was faced with other offers in Trivago as if he was still searching for other options and still not content with what was chosen.

To pursue the analysis, they are faced with another two different hotels – Hotel Cabana Trópico and Hotel Palmeira Verde (in figures 11 and 12) - and are asked to choose a hotel and after to choose the booking channel (according to the channels presented in the screenshot of the chosen hotel).

Hotel Cabana Trópico presents a wide price dispersion and Hotel Palmeira Verde shows a narrow price dispersion, but this time Cabana Trópico presents a display of star rating more specifically a 4-star classification. The 4-star rating was chosen due to the result of the First Test since it was the star rating number with a higher score regarding the variable quality value measured in a 5 point Likert scale (totally disagree - totally agree).

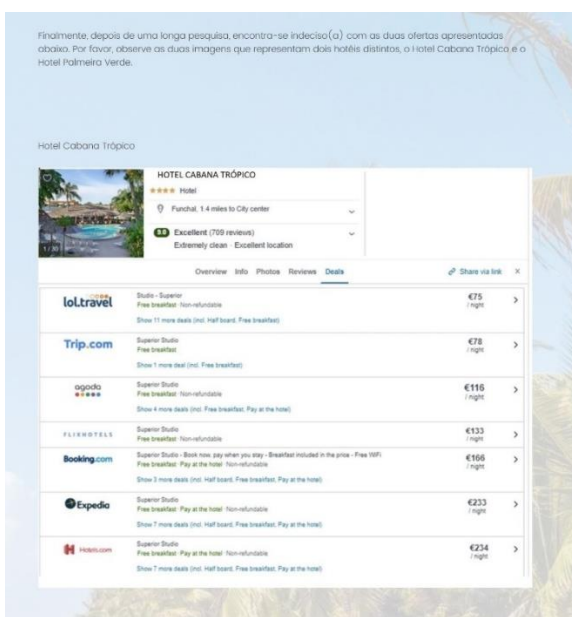


Figure 10 - Hotel Cabana Trópico showing wide price dispersion and star rating

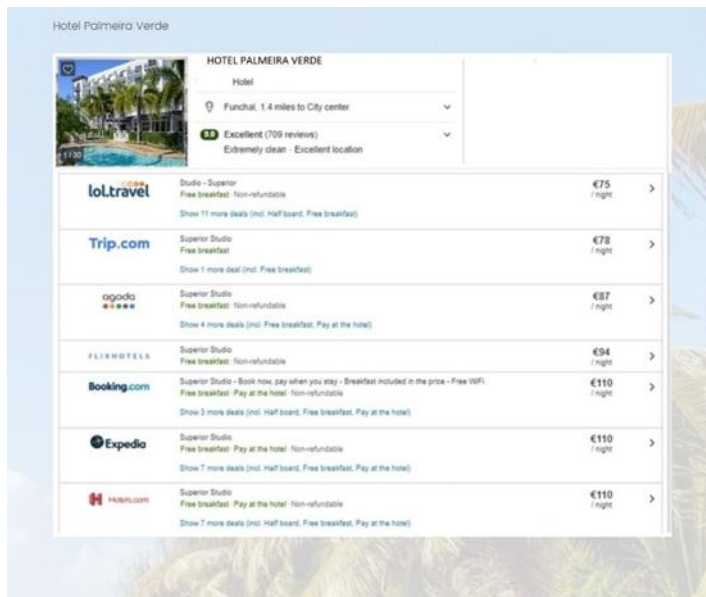


Figure 11 Hotel Palmeira Verde showing narrow price dispersion

By adding the star rating attribute into the screenshot and as a manipulative variable to influence the final decision of the consumer, I expected to promote the feeling of finding a great deal in the purchase decision process and to reduce the effect of price dispersion on consumer booking choices.

There are several ways that this variation of perceived value can influence consumer choices, but in this study it was ultimately only analyzed the star rating as quality value - being quality value a dimension of perceived value (El-Adly, 2019).

Consequently and similar to the first section, the questionnaire will provide questions to measure price fairness based on the following articles (Kimes, 1994; Martin et al., 2009). To finalize the survey, the respondents were asked to write some demographic information (gender, age, number of booking times at hotels, number of online booking times).

Table 4- Questionnaire's questions in English and Portuguese with their respective references

Subject	Questions (EN)	Questions(PT)	Authors	Measurement Scale
Quality Value	<ul style="list-style-type: none"> • <i>The quality of the hotel seems high;</i> • <i>The services must be with higher excellence;</i> • <i>The hotel seems very reliable;</i> • <i>The hotel is considered a top-quality hotel</i> • <i>the overall expected value of staying at the hotel is very high.</i> 	<ul style="list-style-type: none"> • <i>A qualidade do hotel parece elevada</i> • <i>Os serviços do hotel devem ser de uma grande excelência</i> • <i>O hotel parece ser bastante confiável</i> • <i>Considero o hotel de alta qualidade</i> • <i>O valor esperado para a estadia neste hotel é elevado.</i> 	(El-Adly, 2019)	Five-point Likert-type scale (1 = strongly disagree to 5 = strongly agree)(J. Kim et al., 2019)
Price Fairness	<ul style="list-style-type: none"> • <i>The prices presented were fair</i> • <i>the prices presented were acceptable</i> • <i>How did the prices make you feel?</i> • <i>I feel like I had an advantage comparing to other consumers</i> • <i>I feel like I was not catching the best deals as much as other consumers might have</i> • <i>The variety of prices make me feel like it is not fair as I'm purchasing at a higher cost than other consumers for the same product/service</i> • <i>The variety of prices makes me feels advantaged comparing to other consumers.</i> • <i>I feel confident booking in this price presentation format.</i> 	<ul style="list-style-type: none"> • <i>Os preços apresentados parecem-me justos</i> • <i>Os preços apresentados são aceitáveis</i> • <i>Sinto que tenho alguma vantagem em relação a outros consumidores ao encontrar esta oferta</i> • <i>Sinto que não estava a apanhar as melhores ofertas como outros consumidores possam ter encontrado</i> • <i>A variedade de preços faz-me sentir como se não fosse justo pois estou a comprar algo potencialmente mais caro que outros consumidores</i> • <i>A variedade de preços faz-me sentir que tenho alguma vantagem em relação a outros consumidores</i> • <i>Sinto-me confortável a reservar com esta apresentação de preços</i> 	(Kimes, 1994; Martin et al., 2009)	Five-point Likert-type scale (1 = strongly disagree to 5 = strongly agree)(J. Kim et al., 2019)
Demographic Questions		<p>Que categoria abaixo inclui a sua idade?</p> <ul style="list-style-type: none"> • 17 ou mais novo • 18-20 • 21-29 • 30-39 • 40-49 • 50-59 • 60 ou mais velho <p>Qual o seu género?</p> <ul style="list-style-type: none"> • Feminino • Masculino • Outros (Especifique) <p>Qual o seu estado matrimonial?</p> <ul style="list-style-type: none"> • Casado(a) • Viúvo(a) • Divorciado(a) 	(Pro, 2020; Survey, 2020)	Multiple choice question

-
- Solteiro(a)

Qual o seu nível máximo de educação que completou?

- Abaixo do secundário
- Secundário
- Licenciatura
- Mestrado
- Doutoramento
- Outro

Já alguma vez reservou online?

- Sim
- Não

Se sim, em que canal costuma reservar?

- Hotelbeds
 - Booking.com
 - Trivago
 - Tripadvisor
 - Outros
-

Data analysis and statistical procedures

After the data collection, the data were analyzed to understand the influence of price dispersion and price fairness in the consumer online booking choice and the effect of star rating on it.

The data analysis was conducted in SPSS, version 24. To provide a better statistical analysis there were only considered the top three of the chosen booking channels (lol.travel, Trip.com, Booking.com respectively ordered from the lower-priced offer to the higher) out of the seven options presented.

For the presentation of the descriptive statistics, there were calculated averages (A) and standard deviations (SD), absolute frequencies (n), and percentages (%). The psychometric properties of price fairness were evaluated with Cronbach's alpha (internal consistency) and with the intraclass correlation coefficient (ICC) (reproducibility).

The considered limits were 0.7 (Jum C. Nunnally, 1978; Koo & Li, 2016), respectively. The association between variables was evaluated with the Pearson correlation coefficient for the continuous variables and with the chi-square test for the categorical variables. The price dispersion and price fairness association with the final consumer choice (booking channel) were evaluated with multinomial logistic regressions. There were implemented models, one where it was not considered the star rating evaluation (M1) and another where that evaluation was considered (M2).

The significance level considered for the rejection of the null hypothesis was 5%.

RESULTS AND DISCUSSION

The survey was conducted for 300 respondents, in which only 207 of them passed through the control variables (the nationality and if they ever booked a hotel online). Out of that 207 potential tourists, 134 (64.7%) are female and 73 (35.3%) are male, being the majority of them single (n=136, 65.7%), 61 (29.5%) married, 9(4.3%) divorced and 1 (0.5%) widowed.

The age distribution can be observed in Figure 12.

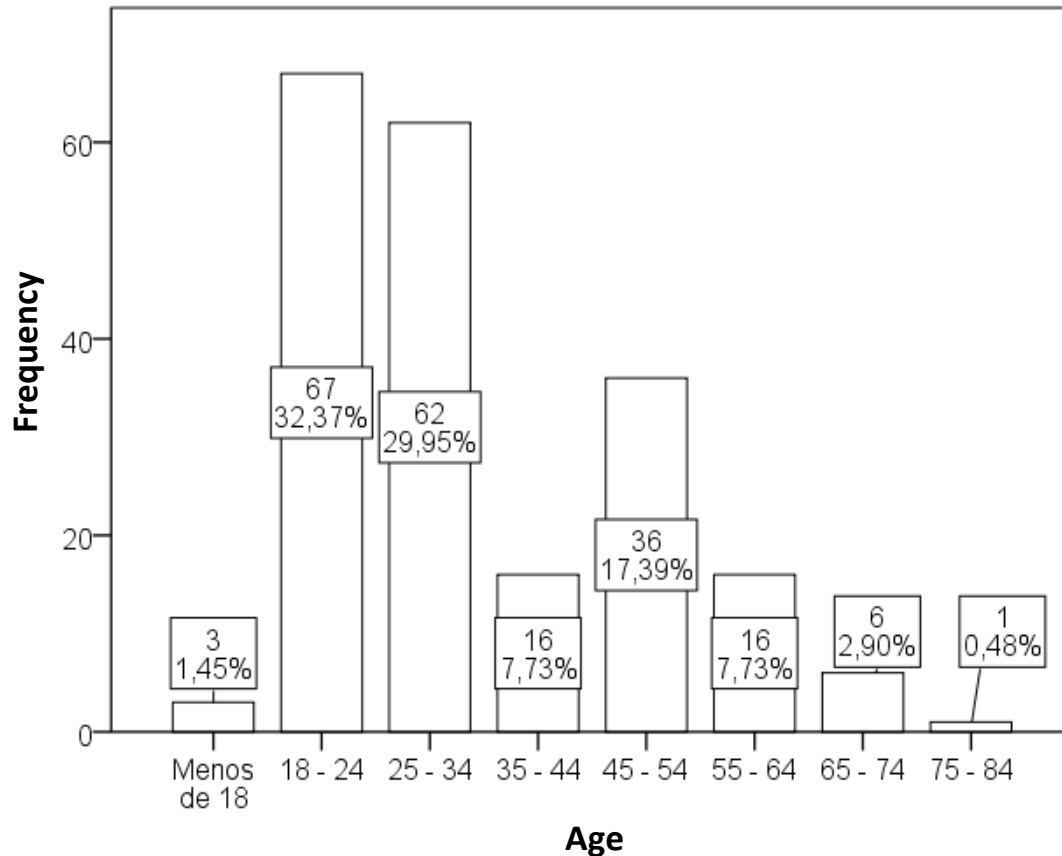


Figure 12 - Distribution of the variable age

Table 5 presents the psychometric properties of the price fairness dimension. There were evaluated the answers of six questions in which the score variate from 1 (completely disagree) and 5 (totally agree).

The internal consistency evaluated by the Cronbach's alpha and the intraclass correlation coefficient (ICC) suggests good psychometric properties for the price fairness evaluated in the first moment (M1) and second moment (M2).

The Cronbach's alpha in M1 was 0.84 and in M2 was 0.87, above the considered limit(0.7). The ICC, which evaluated the reproducibility was above 0.5 in almost every question (except for question 4), which suggests consistency between the moment of the price fairness evaluation.

Table 5- Psychometric properties of price fairness dimension

Price fairness	M (DP)		ICC
	M1	M2	
1 Os preços apresentados são aceitáveis	3.89 (0.89)	4.02 (0.81)	0.68
2 Os preços apresentados parecem-me justos	3.74 (0.88)	3.88 (0.80)	0.63
3 Sinto-me confortável a reservar com esta apresentação de preços	3.83 (0.84)	3.90 (0.77)	0.62
4 Sinto que tenho alguma vantagem em relação a outros consumidores ao encontrar a oferta que escolhi	3.54 (0.98)	3.59 (0.89)	0.46
5 A variedade de preços faz-me sentir que tenho alguma vantagem em relação a outros consumidores e não sinto que seja injusto	3.45 (0.97)	3.51 (0.96)	0.72
6 A variedade de preços não me faz sentir injustiçado por estar a reservar algo potencialmente mais caro que outros consumidores	3.52 (0.98)	3.61 (0.97)	0.64
Cronbach's alpha	0.84	0.87	

Therefore, there were created two composite variables (dimensions) from the average of the answers for the six questions presented above for the moments of evaluation, M1 and M2. The correlation between the two evaluations of price fairness in the two moments was $r=.694$ ($p<.001$), confirming the previous results (Table 6).

Table 6- Descriptive statistics of price fairness dimensions

	M1 M (DP)	M1 M (DP)	Correlation
Price fairness	3.66 (0.69)	3.75 (0.67)	$r=.694$ ($p<.001$)

How does the price dispersion influence the consumer booking choices based on the presence of star ratings?

In Table 7, there is presented the associations between the hotel choice to spend vacations and the channel booking choice, at M1, that is, at the moment where the hotels were not evaluated considering the variable star rating.

It was not found any association statistically significant between these two variables, although the significance level is very close to the limit of the established 5% ($p=.056$). The results suggest that the channels lol.travel and Trip.com tend to be more selected compared to the channel Booking.com in the hotel with bigger price dispersion.

Table 7- Association of the hotel choice (without star rating evaluation) with the channel booking choice at the moment M1

Hotel booking choice (M1)	Channel booking choice (M1)			χ^2
	lol.travel	Trip.com	Booking.com	
Hotel Piscina Palmeira (> dispersion)	87 (70.7%)	31 (77.5%)	24 (54.5%)	p=.056
Hotel Piscina Vista (< dispersion)	36 (29.3%)	9 (22.5%)	20 (45.5%)	

In Table 7 there are presented the associations of the hotel choice with the channel booking choice, in M2, which means, at the moment where the hotels were evaluated with the presence of the variable star rating in one of the two screenshots.

By including this evaluation it was possible to observe an association statistically significant between the two variables ($p < .001$) with higher prevalence of the channel choice lol.travel (84.7%) and Trip.com (76.0%) for the hotel with higher price dispersion, with the variable star rating in comparison with Booking.com, which results go differently, with the respondents choosing the hotel with lower price dispersion without the presence of star rating (61.5%).

The results of Tables 7 and 8 suggest an association of booking choice for the channels lol.travel and Trip.com for the hotels with higher price dispersion, boosted with the star rating evaluation and, in addition, confirming both hypothesis H1 and H3 of the conceptual model.

Table 8- Association of hotel choice (with star rating evaluation) with the channel booking choice at moment M2

Hotel booking choice (M2)	Channel booking choice (M2)			χ^2
	lol.travel	Trip.com	Booking.com	
Hotel Cabana Trópico (> dispersion, with SR*)	100 (84.7%)	38 (76.0%)	15 (38.5%)	p<.001
Hotel Palmeira Verde (< dispersion, without SR*)	18 (15.3%)	12 (24.0%)	24 (61.5%)	

SR*=star rating

How does price fairness influence consumer booking choices based on the presence of star ratings?

Following this, it was included the variable price fairness, in which there were constructed multinomial logistic regression models with the dependent variable – the channel booking choice- and the independent variables – the price dispersion and price fairness.

In Tables 5 and 6 there are presented the results of multinomial logistic regressions for the consumer booking choice between the channels lol.travel vs Booking.com and Trip.com vs Booking.com considering the variables price dispersion and price fairness in moment 1 (without evaluating star rating) and the same variables for moment 2 (with star rating evaluation) (Table 6).

At the moment M1 was not detected an association statistically significant between the price dispersion and the channel lol.travel (vs Booking.com) ($p=.082$). Although it rejects the hypothesis H2 of the conceptual model, price fairness is associated with the channel booking choice ($p=.026$), with an 80% higher chance of choosing the channel lol.travel (vs Booking.com) for each unit in the perception of price fairness (1-5).

Still at M1, it was detected an association statistically significant between the variable price dispersion and the channel choice Trip.com (vs Booking.com) ($p=.035$). The potential tourists who selected the hotel with higher price dispersion had 2.79 times more probability of choosing the channel Trip.com in comparison with Booking.com. It was not observed an association between price fairness in M1 ($p=.420$).

Table 9- Multinomial logistic regression for the consumer choice, without star rating evaluation

Channel booking choice	IVs	OR	p-value	IC 95% OR
lol.travel vs Booking.com	> dispersion	1.89	$p=.082$	0.92 – 3.89
	< dispersion	1	1	1
	Price fairness M1	1.80	$p=.026$	1.07 – 3.00
Trip.com vs Booking.com	> dispersion	2.79	$p=.035$	1.08 – 7.24
	< dispersion	1	1	1
	Price fairness M1	1.30	$p=.420$	0.69-2.43

At the moment M2 was observed an association statistically significant between the price dispersion and the channel lol.travel (vs Booking.com) ($p<.001$). The potential tourists who selected the hotel with higher dispersion and star rating had 8.87 times more probability of choosing the channel lol.travel in comparison with Booking.com.

Price fairness is associated with the selection of the booking channel ($p=.011$), with 2.19 times more probability of choosing the channel lol.travel (vs Booking.com) for each unit in the perception of price fairness (1-5), rejecting then the hypothesis H4 of the conceptual model. By comparing these results with M1, it shows that the star rating evaluation may instigate the channel booking choice lol.travel in comparison with Booking.com.

At last, still at the moment M2 it was detected an association statistically significant between the price dispersion and the channel Trip.com (vs Booking.com) ($p<.001$). The respondents which selected the hotel with higher price dispersion and star rating had 5.08 times more probability of choosing the channel Trip.com in comparison with Booking.com. It was not observed an association with the variable price fairness in M2 ($p=.159$). In comparison with M1, it was detected again that the star rating evaluation may positively influence the channel booking choice lol.travel in comparison with Booking.com.

Table 10- Multinomial logistic regression for the consumer channel choice, with star rating

Channel booking choice	VIs	OR	p-value	IC 95% OR
lol.travel vs Booking.com	> dispersion (with star rating)	8.87	$p<.001$	3.85 – 20.48
	< dispersion (without star rating)	1	1	1

	Price fairness M2	2.19	p=.011	1.20 – 3.98
Trip.com vs Booking.com				
	> dispersion (with star rating)	5.08	p<.001	2.02 – 12.76
	< dispersion (without star rating)	1	1	1
	Price fairness M2	1.60	p=.159	0.83 – 3.07

CONCLUSIONS

In the first moment (M1), when star rating was not present, the hotel with higher price dispersion (Hotel Piscina Palmeira) was chosen the most. The two cheapest channels were more preferred for the hotel with higher price dispersion. Although there is no association statistically significant between the variables price dispersion and channel booking choice, price dispersion has a significant association when it comes to the channel Trip.com (vs Booking) with 2.79 more chances that the consumer chooses Trip.com over Booking when dealing with the hotel with higher price dispersion.

Considering the two cheapest offers, and although price dispersion is not statistically significant when a consumer chooses Trip.com, the more the consumer believes the offers are fairer the more he will tend to choose the cheapest offer – lol.travel.

In the second moment (M2), when star rating was present, the hotel with higher price dispersion (Hotel Cabana Trópico) was chosen the most but present a higher number compared to M1 (boosted by the star rating evaluation). The majority of respondents chose the two cheapest options (Trip.com and lol.travel) for the hotel with higher price dispersion and chose a higher-priced option (Booking.com) for the hotel with lower price dispersion. There is an association statistically significant between the variables price dispersion and channel booking choice and for the hotel, with higher price dispersion the choice for the cheapest hotels was boosted again with the star rating appearance.

Just as concluded above at M1, considering the two cheapest offers and although price dispersion is not statistically significant when a consumer chooses Trip.com, the more the consumer believes the offers are fairer the more he will tend to choose the cheapest offer – lol.travel.

To conclude, Portuguese consumers tend to prefer the hotel with wide price dispersion in the presence of the star rating feature. So, the feature star rating instigates the choice for the cheapest options. Although when choosing the wide price dispersion option they tend to choose the cheapest option, when consumers choose the narrow price dispersion option they tend to go with the more expensive offer. I also concluded that the more the consumer feels that the offer is fairer to them, the more he will tend to choose the cheapest offer.

Although this study was insightful for this subject, some limitations can be raised in this study suggest further future research. First, to study quality value as a perceived value dimension and using star rating as its representative attribute. As it would bring more complexity to this research I decided not to use that variable as a moderator but as suggested in Kim et al. (2019) and with the research that I developed I surely do believe it would bring very interesting results. My proposal for future research is to present four different screenshots (1-wide price dispersion x no star rating; 2-wide price dispersion x star rating; 3-narrow price dispersion x no star rating; 4-narrow price dispersion x star rating) and analyze it according to the consumer choices.

Additionally, when I first started to developed this study and was looking for the perceived value dimensions I did a deep search on the variable transaction value. However, I had to drop this variable to a constraint in a test survey I developed. Therefore, secondly, as future work, I recommend deeper research around this subject. This variable may represent the feeling of having a great offer due to price presentation features such as discounts. I think that there should also be performed future research on this variable and the influence on online hotel booking choice.

Third, as the sample was limited, for future research I advise expanding the control variables for other nationalities (and not only Portuguese people).

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