

Behavioural pricing effects in tourism: A review of the empirical evidence and its managerial implications

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Abstract

During recent decades, behavioural pricing research has accumulated to represent an expansive subset of pricing research addressing how humans perceive, process, and evaluate price information. However, the insights and managerial implications of behavioural pricing research are still fragmented and hardly prepared for specific fields of application. This article provides an integrative review of the effects of behavioural pricing in the tourism field. Taking an application-oriented perspective, we propose a framework for describing how price perceptions may be influenced by (1) the presentation of prices, (2) the presentation of the choice set, (3) the communication accompanying the price, and (4) the design of payment parameters. We use this framework to structure and synthesize the empirical evidence on the effects of behavioural pricing in the tourism context. Our search for papers considering behavioural pricing effects that included either or both the terms tourism and travel in both the tourism and marketing literature identified 100 articles from the period between 1995 and 2022. The findings should provide a more comprehensive understanding of how behavioural pricing can be applied in tourism practice. Besides managerial implications, we discuss unresolved issues and offer an agenda for further empirical research on behavioural pricing in the tourism context.

Keywords: Behavioural pricing, price psychology, price presentation, price communication, choice presentation

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1. Introduction

Price is among the most important cues for consumer purchase decisions. According to (neo-)classical price theory, price describes the monetary amount that a consumer must sacrifice to purchase a product (Chang *et al.*, 2015; Simon & Fassnacht, 2019). However, empirical results have repeatedly demonstrated that consumers deviate from the price-related predictions of microeconomic theory. For example, consumers do not use or process all the information at their disposal (Kim *et al.*, 2020a), they infer unknown attributes such as service quality from price cues (Jin *et al.*, 2016a), and they are guided by reference points when evaluating the price of a product (Choi *et al.*, 2019). The pricing of products and services, especially in the tourism sector, is difficult and complex for various reasons, including the intangible and perishable nature of tourism products. In addition, an investment is required, that is, an often large sum of money must be paid for a product or service of a quality that cannot be evaluated before the purchase. Furthermore, the characteristics of tourists, as well as their price reactions, are difficult to estimate, which makes it challenging to accurately predict tourism demand (Boz *et al.*, 2017). In the context of increased global competition and consequently increasingly narrow profit margins, additional pricing measures are needed. A modern approach is the so-called behavioural pricing, which serves as a behavioural science approach that helps to explain price-related consumer behaviour (Koschate-Fischer & Wüllner, 2017). Behavioural pricing adds a psychological perspective to pricing research and provides insight into how consumers utilize price cues to formulate price judgments and make product choices (Somervuori, 2012).

Behavioural pricing research has emerged rapidly in recent decades, especially in the tourism field (e.g., Greenleaf *et al.*, 2016; Wattanacharoensil & La-ornual, 2019). Behavioural pricing can contribute meaningfully to the profitability of touristic service providers that usually endure high fixed costs and strong cost pressures (Hsieh *et al.*, 2017). Simple and efficient behavioural pricing measures provide touristic service providers with a valuable alternative to costly marketing campaigns. For example, Cialdini (2021) described a study observing a 13 to 20 percent increase in sales of dishes that were labelled “most popular” in a restaurant in Beijing, China. This measure was easy to implement and almost free of cost. In addition, the labelling “most popular” increases (a) the attractiveness of menu items that customers did not consider previously and, in turn, (b) the probability of an order (Cialdini, 2021). However, to date, the behavioural pricing literature remains “mosaic-like” (Pechtl, 2014), comprising a multitude of theories, concepts, and empirical studies across many industries (Miyazaki, 2003). This multitude of heterogeneous theories and empirical evidence complicates obtaining an overview of this issue. To our knowledge, there is no overarching model or theory, with the insights and managerial implications of behavioural pricing research remaining fragmented and rarely rendered for specific practical applications. Notably, there is a substantial gap between the empirical evidence on behavioural pricing and practical applications (Cialdini, 2021). This study aims to bridge that gap by providing specific, practical recommendations that are supported by empirical evidence.

According to Van Wee and Banister (2016), there are several options for the added value of literature review papers, including empirical insights, methodologies, theories, gaps in the literature and research agenda, relevance for real-world application, and conceptual models. Referring to these possibilities, this literature review seeks to present an overview of the current state of knowledge and empirical evidence on the implementation of behavioural pricing effects in the tourism sector. In doing so, the paper elaborates a broad and structured understanding of how touristic service providers can effectively apply behavioural pricing. In contrast to a systematic review process, this study aims not to include all articles on the topic but to combine insights on behavioural pricing in the tourism context from different research streams. The results provide a research agenda for further empirical investigations into behavioural pricing effects in the tourism context. The reason for not conducting a systematic literature review is the vast scope of the research area and, thus, the vast quantity of extant research. Notably, the amount and diversity of literature for each behavioural pricing effect suggests the

feasibility of a separate literature review for each effect, such as for the anchoring effect (see Furnham & Boo, 2011).

This review paper seeks to answer the following key question: What is the empirical evidence on behavioural pricing effects in tourism? To this end, we will summarize existing dimensions of behavioural pricing into a superordinate categorization that will serve as a clear presentation of behavioural pricing effects in tourism. Furthermore, we will explain the different behavioural pricing effects in tourism and present the empirically confirmed and contradictory findings. Additionally, practical recommendations for action will be presented.

This paper's practical contribution concerns the implementation of behavioural pricing. We aim to provide an overview of which effects could be favourably applied in the tourism sector. The categorization of dimensions based on the existing literature and the classification of behavioural pricing effects into these dimensions represents the paper's theoretical contribution. More specifically, our study contributes to the existing literature by avoiding the common approach of using the consumer's cognitive processes and price-perception biases to structure the behavioural pricing literature and examine how consumer behaviour may be explained by underlying psychological phenomena (e.g., Krishna, 2009; Somervuori, 2014; Wattanacharoensil & La-ornual, 2019). Contrasting with this customer-centered process, we focus on the supply side, that is, how tourism companies can effectively apply behavioural pricing effects. Furthermore, although previous studies have investigated specific applications of behavioural pricing for tourism products (Jeong *et al.*, 2020; Kim & Hyun, 2021), a comprehensive understanding of the possible applications and effects of behavioural pricing in tourism remains absent.

2. Categorization of behavioural pricing effects

Before conducting the actual literature search for empirical evidence in the tourism literature, the general behavioural pricing literature was used to identify the predominant cognitive biases. These were subsequently divided into different categories to provide a structured overview of the multitude of cognitive biases. The resulting framework serves to structure the literature review. Previous reviews of behavioural pricing research have provided various conceptual frameworks enabling the structuring of the current state of knowledge. Krishna (2009) defined behavioural pricing as the "behaviour aspects of pricing" or "price effects that cannot be accounted for by the intrinsic price itself." Her framework identifies three main aspects of behavioural pricing: internal reference prices, price presentation, and the antecedents of perceived price fairness. Liu and Soman (2008) used the term behavioural pricing to capture aspects of how price presentation influences perceived value and consumer choice, arguing that evaluating the price attribute is difficult and unreliable without context. In addition to strategies that refer to pricing formats, their framework also includes the effect of background variables, including the choice set, reference points, price image, and consumer knowledge of prices. Similarly, the behavioural pricing review conducted by Hinterhuber (2015) addresses how price context factors—such as the presentation of the choice set and product scarcity—can influence how customers perceive value and price. In another review article, Wattanacharoensil and La-ornual (2019) divided the identified cognitive biases in tourism, such as the primacy, decoy or anchoring effects, into three tourism stages: pre-trip experience (including destination choice selection, tourism product rating, and tourism product choice), on site-experience, and post-trip experience. They determined that most of the cognitive biases reviewed belonged to the pre-trip experience, with on-site experience and post-trip experience featuring only a few. By considering effects related to the choice set, behavioural pricing also integrates various tools from choice architecture—including defaults, framing, and decoy options—that influence how decision-makers choose through the presentation of the choice (Thaler *et al.*, 2013). Kopetzky (2015) extended the scope of behavioural pricing from price presentation and price context to consider factors

related to the payment process that influence the perceived value of money. Raghubir (2006) considered similar biases surrounding the judgment of money.

To structure and synthesize the empirical evidence regarding the effects of behavioural pricing in tourism, we integrate the existing research on behavioural pricing into a categorization designed to provide an overview of the dimensions and effects described by previous reviews and frameworks (Hinterhuber, 2015; Kopetzky, 2015; Krishna, 2009; Liu & Soman, 2008; Raghubir, 2006; Thaler *et al.*, 2013; Wattanacharoensil & La-ornual, 2019). The existing literature has conceived of behavioural pricing in different manners, producing different dimensions and categorizations and, hence, different theories, effects, and terminologies. The categorization developed systematically combines these components, serving to structure the present review.

The pool of behavioural pricing effects that emerged from the literature review revealed that, to cause the least overlap, the effects are best divided into four categories. Our categorization draws heavily on that of Kopetzky (2015), who classified price design parameters into the communication of the focal price (price presentation, e.g., price bundling), the communication of a price including the manipulation of the context (price environment, e.g., guarantees), and price payment parameters (e.g., payment amount and frequency). Meanwhile, our resulting categorization structures existing insights using four supplier-side design dimensions: the presentation of the price itself (e.g., its digits or format), the presentation of the choice set (e.g., the number and ordering of product alternatives), the design of the price-accompanying communication (e.g., price transparency or guarantees), and the payment parameters (e.g., credit card payment or prepayment). Price presentation focuses on the design of prices, that is, presenting and framing prices and discounts to influence price perception and willingness to pay (e.g., Kopetzky, 2015). Choice presentation focuses on the design of the choice environment (e.g., Kopetzky, 2015), that is, framing options (e.g., the number and order of alternatives) to influence the decisions of consumers. Price-accompanying communication supports the acceptance of the price (Kopetzky, 2015). Consumers perceive a price as fairer when a company gives reasons for its pricing decision (Campbell, 1999). This aspect focuses on the design of the communication that accompanies the price, such as providing information about available quantities or offering guarantees. Payment parameters concern factors related to the payment process (e.g., Kopetzky, 2015).

The framework centrally addresses behaviour effects related to price presentation, which we consider behavioural pricing in a narrower sense. We refer to the dimensions beyond the presentation of the price itself as price environment dimensions. Each dimension includes multiple psychological effects, here referred to as behavioural pricing effects, that influence consumers' subjective price perceptions and, hence, their purchasing behaviour.

3 Methodology

3.1 Data collection

Figure 1 provides a conceptualization of the classification used to understand the empirical evidence on behavioural pricing in tourism. The collection of behavioural pricing effects and their categorization into the four supplier-side design dimensions build upon existing reviews and frameworks (Hinterhuber, 2015; Kopetzky, 2015; Krishna, 2009; Liu & Soman, 2008; Raghubir, 2006; Thaler *et al.*, 2013). The relevant behavioural pricing effects were adopted from the general behavioural pricing literature and existing literature reviews, where they appeared as keywords that we used to search the tourism and marketing literature in connection with either or both the terms tourism and travel. We examined the recently published literature using the Web of Science and Google Scholar databases and identified older literature by reviewing the citations from the articles obtained by searching these databases. All articles that empirically investigated behavioural pricing effects in tourism were included

in the analysis, producing 100 articles from the period between 1995 and 2022 (see Appendix). The criteria used for retaining or discarding a specific paper are described in the following paragraphs.

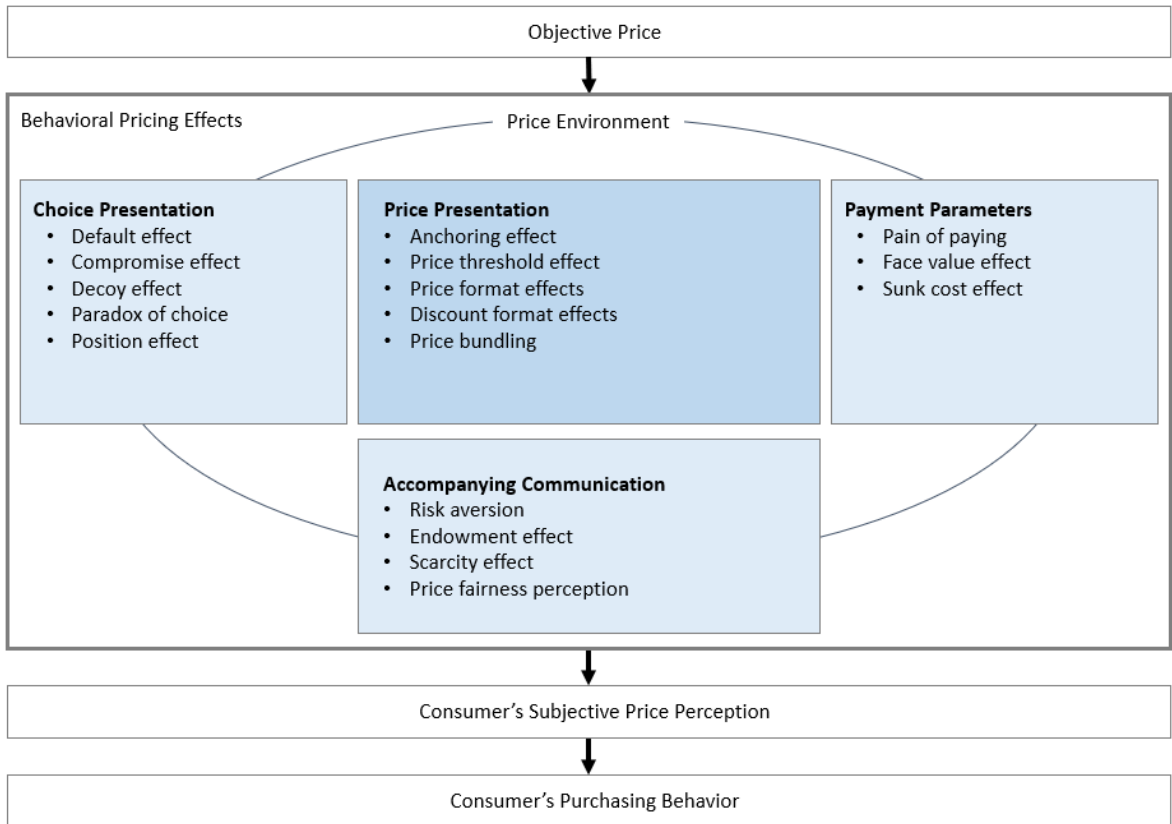


Figure 1. *Categorization of behavioural pricing effects from the supplier perspective*

First, only empirical studies that applied one or multiple behavioural pricing effects in a real tourism context or in a touristic scenario were included. As a touristic context, we considered the purchase of goods and services that can be regarded as characteristic or specially connected with tourism. Characteristic products are those that would not exist in any significant quantity or whose consumption may be reduced in the absence of tourism (WTO, UN, OECD, & Eurostat, 2008). Following the approach of Romero and Tejada (2011), this paper represents the tourism industry using the two main sectors with a marked tourism character: hotel services (including the booking of overnight stays and consumption of food and beverages) and travel agency services (including the booking of holiday/tours and transportation to and at a destination).

Because this review focuses on the price-related design parameters of a supplier, we have not considered studies that have exclusively explored consumers' cognitive processes or other variables that are beyond a company's control (see Section 2).

Furthermore, this review focuses on the effects of behavioural pricing on tourists' purchasing behaviour and the related revenue potential for touristic service providers, either by supporting more sales or greater expenditure per sale (i.e., the choice of higher-priced product options or ancillary services).

Therefore, the dependent variables of the reviewed articles refer to consumers' price perceptions, probability of buying, and willingness to pay for a touristic product or service. Conversely, we have not considered the application of behaviour economics and cognitive psychology for promoting behaviours such as more sustainable travel behaviour (e.g., Garcia-Sierra *et al.*, 2015), voluntary donations by tourists (Nelson *et al.*, 2019), or healthy food choices in restaurants (Hwang & Lorenzen, 2008).

3.2 Data analysis

We conducted a staged review to analyse the empirical literature in the field of tourism. After an initial review of the abstracts, we conducted an in-depth qualitative analysis of the content. We summarized the objective of each article and its empirical findings on the specific behavioural pricing effect for the underlying touristic offer. This was the basis for the classification of the articles. To structure the classification of the articles, we used a concept matrix that listed the behavioural pricing effects along one axis and the empirical articles that addressed these effects in a tourism context along the other axis.

4. Results

Based on the proposed categorization in Section 2, this section presents the results of our literature review.

4.1 Price presentation

This section describes behavioural pricing effects that concern how a company presents its prices online and offline. Effects that were identified in the behavioural pricing literature with regard to this category include price anchoring, price thresholds, price formats, discount formats, and price bundling.

4.1.1. Anchoring effects

Anchoring effects describe cases where a reference value influences a customer's evaluations (Tversky & Kahneman, 1974). Reference prices are among the most researched behavioural pricing topics (Somervuori, 2014) and have also been described as price anchors. A reference price denotes a standard against which consumers contemplate or understand a price (Chandrashekar & Grewal, 2006).

According to Kim and Hyun (2021), about 65% of participants made decisions that were affected by anchors in tourism contexts. In line with other empirical studies, the authors determined that when the anchor is higher, the willingness to pay for a hotel or a vacation increases (Book *et al.*, 2016; Kim & Hyun, 2021; Tanford *et al.*, 2019). Other studies have confirmed that tourists' price perception depends on the difference between the reference price and the actual price (Choi *et al.*, 2019; Karande & Magnini, 2011; Nicolau, 2008). In this regard, consumer willingness to pay is higher when the average price is provided rather than a price range (Tanford *et al.*, 2019). The establishment of a reference price is influenced by both average past prices and past peak prices for the touristic product or service. However, a tourist's reference price is more strongly influenced by lows than highs, meaning low prices and price reductions drive reference prices down (Viglia *et al.*, 2016).

4.1.2. Price threshold effect

Price threshold effects have been observed in the demand for an array of products (e.g., Anderson & Simester, 2003; Baumgartner & Steiner, 2007) and can be exemplified by the left-digit effect, which describes the lower perceived price magnitude for 9-ending or odd-ending prices because consumers tend to pay less attention to the rightmost two digits (Kim *et al.*, 2020a; Thomas & Morwitz, 2005; Zou & Petrick, 2021). Price thresholds can also be explained by "price image effects" (i.e., a signal that a product is a "good deal") and "quality image effects" (i.e., a signal that a product is of higher or lower quality) (Naipaul & Parsa, 2001).

Various authors have analyzed the perception of price endings in tourism and demonstrated that they can signal quality or value. While tourists associate the price ending 0 with high quality, they tend to perceive a high value for prices ending in 9 (Naipaul & Parsa, 2001; Parsa & Naipaul, 2008). Notably, while 9 endings are most prominent in Western countries, 8 endings are common in Asian cities such as Shanghai (Jeong & Crompton, 2017). This is based on superstitions and cultural beliefs: the number 8 is associated with luck and fortune in many Asian countries (Boyol Ngan *et al.*, 2018). Meanwhile, 0 and 5 endings appear in the pricing strategies of companies across cultures and countries (Boyol Ngan *et al.*, 2018; Jeong & Crompton, 2017). Notably, Jeong and Crompton (2018) demonstrated that there was no significant difference between 9-ending and even-ending prices regarding purchase intentions concerning buying a sandwich, a pizza, or an entrance ticket. However, for hotel room prices, 9-ending prices discounts are associated with higher perceived value than even-ending prices (Jeong & Crompton, 2018). The 9-ending or odd-ending pricing is based on the aforementioned left-digit effect. Consumers compare the leftmost digits when faced with different prices (Kim *et al.*, 2020a; Zou & Petrick, 2021). Thus, in their experimental study, Zou and Petrick (2021) compared hotel room prices with high (e.g., weekend rate \$157, weekday rate \$139) and low left-digit differences (e.g., weekend rate \$159, weekday rate \$141), revealing that hotel room prices in the low-price segment (up to \$150) are subject to a left digit effect, indicating that consumers demonstrate greater purchase intention when the left-digit difference is larger.

4.1.3. Price format effects

Price format effects refer to the influence of the format of the price presentation on customer behaviour and associated purchasing decisions. According to standard utility theory, the preferences of individuals should not change if the price is the same and only the presentation of the price differs (Bertini & Wathieu, 2005).

Noone and Mattila (2009) and Rohlf and Kimes (2007) both investigated whether the price for a hotel booking should be presented using a non-blended or blended approach. The non-blended approach presents prices separately for each night. For example, where the price for the first night is \$120 and the price for the second night is \$100, the individual prices are displayed. Meanwhile, the blended approach would present only the average price for the two nights—in this case, \$110. Noone and Mattila (2009) found that the non-blended approach led tourists to demonstrate greater willingness to book, with Rohlf and Kimes (2007) finding that the non-blended approach was rated as fairer, more honest, and more reasonable by tourists. Other authors have examined how prices should be presented physically, such as on restaurant menus. Customers at fine dining restaurants prefer the price to be on the right side of the menu because this is associated with higher quality. Meanwhile, customers at quick-service restaurants prefer the price on the left-hand side because this expresses greater value (Parsa & Njite, 2004). Notably, according to Yang *et al.* (2009), it makes no difference to tourists whether the price is written as a word or numeral on the menu, but it does matter whether there is a reference to the relevant monetary unit. A purchase is more likely when a product or service's price is presented as “20” than when the price includes a reference to money (i.e., “20 dollars” or “\$20”).

4.1.4. Discount format effects

Discount format effects describe the changes in individual consumer preferences that occur when discounts are presented in different ways (Frisch, 1993). The transaction utility theory (Thaler, 1985) postulates that individuals weigh two types of utility when purchasing a product or service. Acquisition utility reflects the economic value of the product. If the price to be paid for a product decreases, acquisition utility increases. Transaction utility reflects the individual's comparison of the price to be paid with an internal standard, that is, a reference price. If the price is equal to or lower than the reference price, transaction utility increases (Darke & Chung, 2005). Manipulating the display format

of a discount can increase an individual's perception of acquisition and transaction utility, positively influencing purchase intention.

The tourism research literature presents mixed findings on discount format effects. Comparing a gain frame ("get \$x off") and a non-loss frame ("save \$"), Yang and Mattila (2020) revealed that consumers demonstrated greater purchase intention in the gain frame when the discount was presented to them in monetary units. However, if the discount was presented as a percentage, there was no significant difference between the gain frame and the non-loss frame. Elsewhere, Yoon *et al.* (2010) found no significant difference between presenting a discount in dollar format or percentage format for hospitality services, and Choi and Mattila (2014) concluded for low-status consumers and Nusair *et al.* (2010) for low-end services that the dollar format might more effectively boost purchase intentions by increasing the perceived savings. The dollar-format discount is associated with greater value. In contrast, Hu *et al.* (2006) indicated that discounts in the percentage format increase purchase intention among customers of low-end services. Thus, the authors concluded that tourists prefer dollar discount formats in the hospitality industry, but the percentage discount format is more appropriate for non-hospitality industries. However, studies generally agree that hospitality companies should establish the magnitude of discounts cautiously. Discounts exceeding 40% (Nusair *et al.*, 2010), 50% (Hu *et al.*, 2006), and 60% (Yoon *et al.*, 2010) do not motivate purchase intentions because they decrease perceived quality.

4.1.5. Price bundling

Price bundling describes selling various products or services for a single price (Gaeth *et al.*, 1991). There is some evidence that individuals buy more when products are bundled than when products are not bundled (Drumwright, 1992). That is, consumers are more likely to forgo consumption and demand less compensation for parts of bundles than for unbundled products. This is explained by the disassociation of a product's costs from its benefits (Soman & Gourville, 2001).

According to the studies screened, consumers of touristic services prefer price bundling to price partitioning (Engeset & Opstad, 2017; Repetti *et al.*, 2015). A bundled offer is chosen by consumers predominantly for convenience and value for money (Nazlan *et al.*, 2018). This is also the case when tourists know the prices and fees of individual services (Engeset & Opstad, 2017). Regarding price bundling of touristic products, there are two strategies for disclosing bundling information: transparent pricing (displaying individual component pricing) and opaque pricing (only the total package price). The effectiveness of these strategies depends on whether the savings are revealed. If the savings are not revealed, opaque pricing more effectively gains customers. If savings are revealed, transparent pricing should be used, and savings should be indicated for each individual component (Tanford *et al.*, 2011, 2012). However, it remains unclear whether it is more advantageous for a touristic provider to declare the savings or omit the savings and, thus, whether they should implement transparent or opaque pricing. Meanwhile, reflecting the findings of Nazlan *et al.* (2018) concerning the reduction in perceived value produced by adding unnecessary items to a bundle, Cozzio *et al.* (2021) revealed that consumers set a specific budget for a bundled vacation package, regardless of what is included in the bundle. Thus, consumers do not recognize the value of individual items in the bundle, suggesting that touristic providers should not seek to increase the value of a bundle by adding items that are deemed unnecessary by the consumer.

4.2 Choice presentation

This section describes behavioural pricing effects that relate to how a company presents its different offerings to potential customers. The behavioural pricing literature includes the following effects in this category: default effect, compromise effect, decoy effect, paradox of choice, and position effect.

4.2.1. *Default effect*

The default option is a pre-set option that consumers receive if they do not actively choose another option. Defaults are assumed to influence choices because decision-makers potentially believe the default suggested (e.g., by policymakers) to be the best choice (Johnson & Goldstein, 2003), because accepting the default is effortless compared to opting in (Samuelson & Zeckhauser, 1988), or because defaults often represent the status quo, with changes likely eliciting considerations of losses and gains (Johnson & Goldstein, 2003) in which losses loom larger than gains (Kahneman & Tversky, 1979).

Several researchers have observed that setting a default influences customer decisions in certain traveling contexts, including tipping behaviour in the taxicab industry (Hoover, 2022) and paying voluntary carbon offsetting uptake when flying (Eslaminassab & Ehmer, 2021). Thus, tourism service providers need to consider what options they set as defaults. Additive option framing (also known as upgrading) involves offering a low-cost basic package that allows additional services to be booked or purchased as extras. Subtractive option framing (also known as downgrading) describes an already luxurious set of services from which consumers can remove individual services. If both types of option framing are available, consumers prefer upgrading (Jin *et al.*, 2012). However, various studies have shown that customers spend more money on touristic services in the downgrading scenario (Chen, 2019; Jin *et al.*, 2012; Steffen *et al.*, 2020). In the hotel industry, the likelihood of consumers choosing the high-grade category when it is set as the default is up to 3.7 times (or 270%) higher than when the low-grade category is offered as default. Offering the high-grade category as the default option can increase revenue by 4% for board (full board vs. half board vs. breakfast) and by 1.2% for rooms (superior room vs. standard room) (Steffen *et al.*, 2020).

4.2.2. *Compromise effect*

In a choice set featuring extreme options, introducing a “middle-option” as a compromise can increase its attractiveness and decrease the attractiveness of the extreme options. This compromise effect can be explained by extremeness aversion; that is, a compromise choice reduces the conflict associated with deciding on one of the extreme options and abandoning certain attributes for others (Simonson, 1989). The literature supports the existence of a compromise effect for touristic services. Introducing a middle option can increase the share of the touristic target option by between 22.2% and 40.5% (Jeong *et al.*, 2020), by between 48.7% and 57.8% (Kim & Kim, 2016), or by 33.6% (Kim *et al.*, 2019b). However, according to Park *et al.* (2022a), the compromise effect becomes weaker as the number of available options increases. For example, the compromise effect is more apparent when consumers face three options rather than nine options in the vacation spot choice context. The compromise effect has been observed to be stronger in utilitarian consumption situations (when individuals are focused on usefulness, practicality, functionality, and fulfilling their basic needs) than in hedonic consumption situations (when individuals are focused on enjoyment). For example, utilitarian and hedonic consumption were invoked in one study by having participants imagine planning a business trip compared to planning a leisure trip, with the results supporting the argument that utilitarian decisions are more deliberate (Kim & Kim, 2016). Furthermore, childhood socioeconomic status has been found to affect traveller decision making. Consumers who experienced lower socioeconomic status during childhood are more likely to choose the middle option because they seek to reduce the uncertainty associated with extreme options (Kim *et al.*, 2022).

4.2.3. *Decoy effect*

Consumers make decisions by weighing price and quality. Products or services featuring a lower price and higher quality dominate over those offering lower quality at a higher price. The decoy option, introduced by Huber *et al.* (1982), is asymmetrically dominated. Introducing two asymmetrically dominated options draws customer attention to the target option (high price, high quality), indicating

that the decoy effect contradicts the assumption of independence from irrelevant alternatives (Kim *et al.*, 2019b).

Various studies in tourism research have demonstrated the effectiveness of the decoy option (Gonzalez-Prieto *et al.*, 2013; Josiam & Hobson, 1995; Kim *et al.*, 2019b). By introducing a low-price-low-value option (i.e., the decoy) as an extreme option, the high-price-high-value option is no longer considered extreme. Thus, purchase decisions shift towards the target option (Josiam & Hobson, 1995). In contrast, in scenarios without a decoy option, consumers are less likely to choose any alternative (Gonzalez-Prieto *et al.*, 2013). Travelers who experienced lower socioeconomic status during childhood are especially likely to perceive extreme alternatives to be risky. In such cases, this risk aversion can be mitigated by introducing a decoy option (Kim *et al.*, 2022).

4.2.4. Paradox of choice

The paradox of choice (Schwartz, 2004) suggests that increasing an individual's choice set may reduce utility and satisfaction. While increasing choice options expands an individual's possibilities, it renders the actual decision-making increasingly difficult, demanding more information, which is associated with the search costs of time, risk, and effort (Reed *et al.*, 2012). In this context, scholars have also frequently invoked choice overload, which refers to the complications associated with filtering large amounts of information according to the individual's criteria and making a choice. Choice overload often results in no option being chosen (Schwartz, 2004).

The existence of choice overload has been empirically proven for vacation destination decisions (e.g., Park & Jang, 2013; Thai & Yuksel, 2017), online travel booking decisions (e.g., Guillet *et al.*, 2020; Greenwood & Ramjaun, 2020), and restaurant ordering decisions (e.g., Park & Kang, 2022). For example, Park and Jang (2013) demonstrated that no more than 22 vacation destination options should be offered because the number of no-choice customers increases when this threshold is exceeded. The existence of a choice overload leads to opting for an easily justifiable option (Greenwood & Ramjaun, 2020), delaying the decision (Greenwood & Ramjaun, 2020), or reducing decision confidence (Guillet *et al.*, 2020; Greenwood & Ramjaun, 2020). Furthermore, greater choice overload is associated with greater regret (Sthapit *et al.*, 2019) and lower satisfaction with the customization process (Park & Kang, 2022). In the online hotel booking context, Guillet *et al.* (2020) demonstrated that when the number of choices is large (30 options), online search filters can reduce choice overload, with the effect of filtering mechanisms weaker for smaller numbers of choices (three or nine options). The negative effect of choice overload can also be mitigated by providing detailed information about the options and by using multicolored text to highlight important information (Guo & Li, 2022). However, other studies have found empirical evidence for the idea that more is always better. For tourists buying souvenirs or booking accommodation, neither of two studies by Sthapit (2018, 2019) proves choice overload. Instead, the findings indicate that tourists prefer large choice sets (more than 50 options) over smaller choice sets (fewer than 20 options) (Sthapit, 2018).

4.2.5. Position effect

The position effect can be divided into edge preference and edge aversion. Edge preference refers to consumers tending to choose the first or last item on a list (Kim *et al.*, 2019a). When a list of items is presented, the first- and last-listed items are retained in an individual's short-term memory, phenomena referred to as primacy and recency effects (Stewart *et al.*, 2004). Edge aversion refers to a preference for the options in the middle of the list because it is inferred that the middle option is chosen by the majority of other consumers, making it a popular choice (Kim *et al.*, 2019a).

Extant tourism studies provide mixed evidence concerning the position effect. Edge preference and edge aversion have both been observed in the hospitality industry in the context of restaurant orders

and hotel room bookings (Dayan & Bar-Hillel, 2011; Ert & Fleischer, 2016; Pinger *et al.*, 2016). For example, Dayan and Bar-Hillel (2011) found that consumers choose the first (primacy effect) or last item (recency effect) on a list of foods regardless of the type of food (e.g., beverages or desserts) or the number of items listed. In contrast, Pinger *et al.* (2016) concluded that items in the middle of a menu were chosen 5% more often than items at the edge. Elsewhere, Kim *et al.* (2019a) attempted to identify the situations in which either edge preference or edge aversion dominates, finding that consumers prefer options in the middle when options are listed horizontally and edge options when options are listed vertically. This result is consistent with the findings of Pan *et al.* (2013) for online hotel choice, which demonstrate that results on a search engine are more likely to be ignored if they are listed in the middle. The results at the top receive the most attention. Other tourism studies focus on how the order of receiving destination information (Keshavarzianor & Wu, 2021) or the order of visiting destinations (Zare & Pearce, 2022; Zare & Pearce, 2018) impacts recall and evaluation. Notably, traveller decisions for a specific destination have been found to be influenced by the sequence of airline and destination information. Traveler decisions are biased towards choosing the destination about which they first receive information (Keshavarzianor & Wu, 2021), supporting the primacy effect. Zare and Pearce (2018) observed similar results for the order of multi-city visits from a guided tour perspective. The first city visited was the most memorable and also that which was evaluated most positively. However, the findings of a more recent study by Zare and Pearce (2022) reveal that travellers remember the first destination of a tour best (primacy effect) but rate the last destination most favourably (recency effect).

4.3 *Accompanying communication*

This section elaborates on behavioural pricing effects concerning the communication accompanying the presentation of prices and offerings. This includes research on purchasing risks, the endowment effect, scarcity, and price fairness.

4.3.1. *Risk aversion*

Given a choice of several alternatives with identical expected values, risk-averse individuals select the choice that represents the lowest risk and, thus, the smallest possible loss. Risk-averse individuals prefer the most certain profit possible, even if it is very small (Pratt, 1964). Booking touristic services, such as flights or trips, is fraught with risk because tourists pay for the service in advance but do not know whether the quality of the service will meet their expectations or, in the case of flights, the airline's promises (Boksberger *et al.*, 2007).

Recent studies have indicated that tourists' risk perceptions during the time of COVID-19 were negatively associated with their booking and travel intentions (Neuburger & Egger, 2021; Rather, 2021; Villacé-Molinero *et al.*, 2021). A recent study by Zhang *et al.* (2020) analysed the impact of infectious diseases on the emotional responses of tourists to price variations, revealing that the threat of infectious disease increased tourists' risk aversion. Risk aversion causes tourists to perceive unfavourable price changes as financial loss, inducing negative emotional reactions. However, tourists are willing to pay a premium for risk reduction in travel offerings (Prince & Kim, 2021). Some studies have investigated whether tourism companies should introduce a guarantee and which guarantee offer would be most advantageous (Wirtz *et al.*, 2000; Wong *et al.*, 2009). These studies demonstrate that introducing a guarantee increases tourists' perception of quality and willingness to purchase. According to Wong *et al.* (2009), the type of guarantee a tourism company should introduce depends on whether it is a lower- or higher-priced service. For lower-priced services, potential customers perceive a performance risk. They do not pay a high price, but they are not sure whether the service is going to be completely satisfactory. In this case, an attribute-specific guarantee (i.e., guarantees regarding the performance or other specific attributes of a service) is effective because it reduces perceived risk while increasing expected quality. Higher-priced services pose a financial risk, which reduces purchase intention. A full

satisfaction guarantee (i.e., guarantee on complete performance and service delivery) can counter this risk by protecting tourists from service failures, reinforcing their purchase intention (Wong *et al.*, 2009).

4.3.2. Endowment effect

Individuals value goods they own more than goods they do not own (Thaler, 1980). The endowment effect refers to the difference between a seller's willingness to accept and a buyer's willingness to pay. A seller's willingness to accept can exceed a buyer's willingness to pay when the seller attaches a higher value to an object for sale due to owning it (e.g., due to emotional value). This effect can also be explained by prospect theory: removing a good from the endowment creates a loss, and adding a good to an endowment can be considered a gain (Kahneman & Tversky, 1979; Thaler, 1980). Consequently, the consumer requests more compensation for their loss.

Only a few studies have addressed the endowment effect in the tourism industry (Shtudiner *et al.*, 2019). These studies analysed the purchase or sale of souvenirs (Paraskevaidis & Andriotis, 2015; Shtudiner *et al.*, 2019; Swanson, 2004) and found that ownership creates an attachment to the item due to, for example, personal experience and emotional connection to the destination (Shtudiner *et al.*, 2019).

4.3.3. Scarcity effect

The scarcity effect is based on commodity theory (Brock, 1968), which explains how individuals react to scarcity. Scarcity refers to the limited availability of a product or service, which can increase its perceived utility or desirability. The commodity theory includes four propositions describing the scarcity effect: A product or service becomes more attractive when suppliers are limited; There is limited availability of the product; There is a waiting period; One must exert effort to obtain the product (Brock, 1968).

Commodity theory is exemplified by the case of restaurant managers making marketing statements that emphasize full restaurant occupancy at rush hour to increase the restaurant's exclusivity (Heo *et al.*, 2013). However, it cannot generally be proven that scarcity always increases popularity or the perception of value, regardless of other factors (Heo *et al.*, 2013; Nazlan *et al.*, 2018; Park *et al.*, 2017). In the context of hotel room bookings, Park *et al.* (2017) recognized that scarcity (i.e., the number of rooms still available) decreases and popularity (i.e., the number of bookings by others) increases the booking intention of potential customers. This finding aligns with the more recent observation of Park *et al.* (2022b) that tourists prefer the hotel option that they understand to represent a limited or scarce option (due to information received). However, the effectiveness of scarcity statements depends on the causes of scarcity. If scarcity results from high demand, positive evaluations of touristic products or services decrease. Only when scarcity is defined by supply (e.g., limited editions or capacity) do positive evaluations increase (Heo *et al.*, 2013; Kim *et al.*, 2020b). The same finding is demonstrated by Li *et al.* (2021) in the context of the COVID-19 pandemic. Demand-side scarcity lowered tourists' purchase and booking intentions because they associated high demand with lower safety. Other studies focus on the effect of time scarcity. For Wang *et al.* (2021), a time-limited offer leads to a positive evaluation, which increases the click-through intention of the hotel's social media posts. If an exclusive offer is communicated at the same time, that is, if the time-limited offer is only made available to a certain group of people, the positive effect on click-through intention is cancelled out. Elsewhere, Liu *et al.* (2022) compared hedonic and utilitarian consumption types, demonstrating that high time scarcity increases the impulsive purchase of hedonic products (including tourist products), whereas the impulsive purchase of utilitarian products increases when time scarcity is low.

4.3.4. Price fairness perception

Price fairness refers to an individual's perception of whether a price is acceptable and reasonable. According to adaption-level theory (Helson, 1964), the perception of price fairness closely relates to the

reference price. The reference price represents the price that customers expect. If the actual price exceeds the expected price, they perceive the price to be unfair (Monroe, 1973), which influences purchasing behaviour.

In the tourism context, several studies have confirmed that tourists perceive prices to be “fair” or “unfair” depending on internal and external reference prices (Choi *et al.*, 2018; Choi & Mattila, 2018). A price is evaluated as less expensive if it is below the price expected (Andrés-Martínez *et al.*, 2014; Asadi *et al.*, 2014; Choi *et al.*, 2018; Choi & Mattila, 2018; Chung & Petrick, 2013). According to Chung and Petrick (2013), tourists find additional fees unacceptable and are annoyed when these fees are higher than they consider reasonable. However, if they are aware that these fees are based on uncontrollable factors, the fees again seem fair. This is reinforced by the findings of two studies by Choi and Mattila (2005, 2006), which emphasize the impact of information on tourists’ perceptions of fairness. Tourists without information about the revenue management processes associated with tourist companies perceive the price to be paid as unfair, whether they pay more or pay less than other tourists. The more information tourists have about price composition, the more they perceive the price to be fair (Choi & Mattila, 2005; Choi & Mattila, 2006). Several determinants of price fairness perception have been identified, including service quality (Jin *et al.*, 2016a), gratitude, and, in the restaurant context, innovative image (Jin *et al.*, 2016b). Meanwhile, perceived price fairness positively impacts decision confidence and customer satisfaction in the online hotel booking context (Andrés-Martínez *et al.*, 2014), customer satisfaction and loyalty around tourists’ buying behaviour (Asadi *et al.*, 2014), and loyalty and willingness to pay in the context of airline ancillary fees (Chung & Petrick, 2013). However, in the restaurant context, Muskat *et al.* (2019) could not find any significant effect of price fairness perception on behaviour intentions, whether the intention to revisit the restaurant, to recommend the restaurant to others, or to talk positively about the restaurant.

4.4 *Payment parameters*

This section describes behavioural pricing effects that accompany paying for tourism services, including the pain of paying, the face value effect, sunk costs, and the payment depreciation effect.

4.4.1 *Pain of paying*

The pain of paying has been identified as a self-regulatory inhibitor of consumer spending that counteracts the pleasure of acquiring a product or service (Prelec & Loewenstein, 1998; Rick *et al.*, 2008). A modified mental accounting theory known as prospective accounting assumes that the more closely consumption and payment are cognitively associated, the more strongly individuals feel the pain of paying (Prelec & Loewenstein, 1998).

The association between consumption and payment can be weakened by, for example, enabling credit-card or online payment instead of cash payments (Lee *et al.*, 2019; Prelec & Loewenstein, 1998; Raghurir, 2006; Shah *et al.*, 2016). By separating the consumption and payment of a product or service, as in the case of booking an Airbnb (paying in advance and automatically), the consumer evaluates consumption of the product or service more positively (Kastanakis *et al.*, 2022). This suggestion is supported by Raghurir and Srivastava (2008), who investigated the pain of paying in a restaurant context by demonstrating that displaying a card payment logo increases customer spending. Furthermore, in the same context, a high one-time payment instead of split smaller payments reduces the pain of paying (Raghurir & Srivastava, 2008). This links to the recommendation of a price bundling strategy that shows the price information for multiple products as a bundle, producing the perception of higher value (Nazlan *et al.*, 2018). Loyalty programs represent another way to reduce the pain of paying, with tourism companies using such initiatives to bind customers to their services and offer them alternative ways of paying for their purchases. Airlines, for example, award frequent-flier miles, and hotels award bonus

points to loyal customers. The psychological cost associated with a particular price decreases when customers pay using a combined currency (e.g., \$39 and 16,000 miles flown) rather than using a single currency (Drèze & Nunes, 2004). This may be due to the difficulty of converting abstract amounts in a novel currency into conventional denominations of the other currency (Nunes & Whan Park, 2003).

4.4.2. Face value effect

The face value effect is particularly relevant for international tourism, where tourists are confronted with a currency different from that of their home country. The face value effect relates to both the aforementioned anchoring and adjustment mechanism (Tversky & Kahneman, 1974) and the money illusion effect, which sees individuals overweigh nominal values in relation to real values (Shafir *et al.*, 1997).

The face value effect suggests that when a foreign currency is a multiple of an individual's domestic currency (high-denomination currencies), tourists overestimate the actual value. Thus, people tend to underspend because prices appear higher than in the home country. In contrast, when an individual's domestic currency (low-denomination currencies) is a fraction of the foreign currency, tourists underestimate the actual value. This leads people to overspend because the price appears lower (Lin & Fang, 2013; Saayman *et al.*, 2022). Although the face value effect has been demonstrated by several studies (Lin & Fang, 2013; Lowe *et al.*, 2012; Raghbir & Srivastava, 2002), none of these have explicitly focused on touristic services. However, these studies have analysed the face value effect in relation to different currencies for shopping for groceries and other products in foreign countries, which is more relevant to tourists than other consumer groups. Meanwhile, only one study analysing money illusion in the tourism context was found. That study (Saayman *et al.*, 2022) revealed that more than 80% of the surveyed tourists were affected by the face value effect, with women and more highly educated individuals likely to suffer less from it. However, the face value effect is stronger for less valuable goods, whose assessment depends on the origin of the tourist. Furthermore, Lin and Fang (2013) observed that product availability moderates the face value effect. If a product in the destination country differs from similar products in an individual's home country or is not available at all in their home country, purchase intention increases. This relationship is stronger for low-denomination currencies than high-denomination currencies.

4.4.3. Sunk cost effect

For transactions where costs precede benefits, paying for the right to use a good or service will likely increase the probability that it will be used (Gourville & Soman, 1998; Thaler, 1980). This is known as the sunk cost effect, and it is explained by mental accounting. By establishing a transaction-specific mental account, individuals link the costs and benefits of a transaction (Gourville & Soman, 1998; Soman & Gourville, 2001; Thaler, 1985).

Although the sunk cost effect is critical for tourism industry practitioners, the tourism literature includes limited research on the topic (Su *et al.*, 2022). Nonetheless, some existing studies have analysed the sunk cost effect in tourism contexts, considering destination visit intention (Su *et al.*, 2022), traveller cancellation intentions (Park & Jang, 2014), memberships at restaurants (Jang *et al.*, 2007), and bookings of guesthouse rooms (Liang *et al.*, 2014). A study by Su *et al.* (2022) revealed that monetary sunk cost, that is, the cost of cancelling or modifying a booking, negatively influences visit intention, but temporal sunk cost, that is, the waiting time before traveling, positively impacts visit intention. In contrast, Park and Jang (2014) observed that both temporal and monetary sunk costs negatively affect cancellation intentions. Meanwhile, Guan *et al.* (2021) observed that, during a trip, travel costs do not discourage tourists from spending money on shopping overseas, with sunk costs—that is, expenditures on traveling—tending to make tourists less sensitive to high prices. In the restaurant context, Jang *et al.* (2007) demonstrated that 75% of consumers would switch their membership to another restaurant if it

offered a better service, even if fees had already been paid for the first membership. Therefore, a membership fee cannot be used to deter members from switching, regardless of the cost of that initial membership fee (Jang *et al.*, 2007). However, if the alternative membership fee is also high, customers are more likely to stick with their first choice (Liang *et al.*, 2014).

5. Managerial implications

Table 1 summarizes the managerial implications derived from the findings for the dimensions of price presentation, choice presentation, accompanying communication, and payment parameters. However, measurements based on the literature should be selected and implemented with some caution, that is, adapted according to the specifics of a company's practice. This is because the recommendations are not generally valid, instead strongly dependent on the context of the business and various prerequisites, including the competitive situation, positioning, fit with the marketing concept and corporate image, as well as technical requirements and legal aspects.

Table 1. Summary of managerial implications derived from empirical evidence on behavioural pricing effects

Price presentation	
Anchoring effect	<ul style="list-style-type: none"> • Create beneficial reference prices by indicating prices using “up to” or “from ... to ...” instead of “starting from” to establish a positive anchor at the higher end of the range (Book <i>et al.</i>, 2016; Tanford <i>et al.</i>, 2019); • Do not indicate a discount using “up to” because tourists might be disappointed if their actual discount is not as high as expected (Tanford <i>et al.</i>, 2019);
Price threshold effect	<ul style="list-style-type: none"> • Use the price ending o (rounded pricing) to signal quality and 9 (precise pricing) to signal value (Kim <i>et al.</i>, 2020a; Naipaul & Parsa, 2001; Parsa & Naipaul, 2008); • Increase the ten-digit difference in hotel room rates to promote lower-priced rooms (room rate up to \$150) and decrease the difference to promote higher-priced rooms (Zou & Petrick, 2021);
Price format effects	<ul style="list-style-type: none"> • Use a non-blended approach (e.g., present prices separately for each night) instead of a blended approach (e.g., the average price for all nights) (Noone & Mattila, 2009; Rohlfs & Kimes, 2007); • Locate prices on the right side of physical displays to signal quality and on the left side to signal value (Parsa & Njite, 2004); • Indicate prices without referencing money (Yang <i>et al.</i>, 2009);
Discount format effects	<ul style="list-style-type: none"> • Do not offer discounts above 40% (Nusair <i>et al.</i>, 2010), 50% (Hu <i>et al.</i>, 2006), or 60% (Yoon <i>et al.</i>, 2010); • Use gain-framed messages (instead of non-loss-framed messages) to present discounts (Yang & Mattila, 2020);
Price bundling	<ul style="list-style-type: none"> • When bundling, use opaque pricing (total package price only) if savings are not revealed and transparent pricing (individual component prices displayed) if savings are revealed (Tanford <i>et al.</i>, 2011, 2012); • If savings are revealed, they should be indicated for each individual component (Tanford <i>et al.</i>, 2011, 2012); • Make sure that not too many items are included in the bundle that are attractive but not essential for the customer (Cozzio <i>et al.</i>, 2021);

	<ul style="list-style-type: none"> Do not offer scarce items in a bundling package (Nazlan <i>et al.</i>, 2018).
Choice presentation	
Default effect	<ul style="list-style-type: none"> Offer both the downgrading and upgrading option rather than one or the other to increase customer satisfaction (Chen, 2019; Jin <i>et al.</i>, 2012); Use downgrading instead of upgrading to promote higher-priced options (Chen, 2019; Jin <i>et al.</i>, 2012; Steffen <i>et al.</i>, 2020);
Compromise effect	<ul style="list-style-type: none"> Make the target option the middle option to increase its share (Jeong <i>et al.</i>, 2020; Kim <i>et al.</i>, 2022; Kim <i>et al.</i>, 2019b; Kim & Kim, 2016); Offer a small number of options or provide large gaps between the attributes of the options to enhance the compromise effect (Park <i>et al.</i>, 2022a);
Decoy effect	<ul style="list-style-type: none"> Introduce a decoy option to increase purchases of extreme options or any option at all (Gonzalez-Prieto <i>et al.</i>, 2013; Kim <i>et al.</i>, 2022; Kim <i>et al.</i>, 2019b);
Paradox of choice	<ul style="list-style-type: none"> Do not offer more than 22 options (pre-select or use filters to reduce the number of options) (Park & Jang, 2013); Provide additional information on the options (Greenwood & Ramjaun, 2020; Guo & Li, 2022); Provide filtering tools (Guillet <i>et al.</i>, 2020; Greenwood & Ramjaun, 2020; Park & Jang, 2013);
Position effect	<ul style="list-style-type: none"> Position the most profitable item in the middle when options are listed horizontally and first or last when options are listed vertically (Kim <i>et al.</i>, 2019a; Pan <i>et al.</i>, 2013); Place the destinations to be visited within a tour according to the primacy or recency effect (Zare & Pearce, 2022; Zare & Pearce, 2018).
Accompanying communication	
Risk aversion	<ul style="list-style-type: none"> Offer an attribute-specific guarantee when providing a lower-priced service and a full-satisfaction guarantee when providing a higher-priced service (Wong <i>et al.</i>, 2009); Widely communicate all measures aimed at protecting guests to reduce tourists' risk perception (Neuburger & Egger, 2021; Rather, 2021; Villacé-Molinero <i>et al.</i>, 2021); Be cautious about using dynamic pricing strategies or offering discounts when facing the threat of an infectious disease to avoid negative reactions (Zhang <i>et al.</i>, 2020); Target travelers who are less risk-averse and more adventurous (Prince & Kim, 2021);
Endowment effect	<ul style="list-style-type: none"> When setting prices, consider that the value of goods is determined by not only utility and market exchange but also meaning to the owner (Paraskevaidis & Andriotis, 2015; Shtudiner <i>et al.</i>, 2019);
Scarcity effect	<ul style="list-style-type: none"> Communicate supply-side scarcity messages instead of demand-side scarcity messages (Heo <i>et al.</i>, 2013; Kim <i>et al.</i>, 2020b; Li <i>et al.</i>, 2021); Avoid providing multiple scarcity messages (i.e., more than two) (Kim <i>et al.</i>, 2020b); Implement price promotions together with scarcity statements to enhance the scarcity effect (Kim <i>et al.</i>, 2020b);

	<ul style="list-style-type: none"> • Impose a time restriction on offerings (Liu <i>et al.</i>, 2022; Wang <i>et al.</i>, 2021);
Price fairness perception	<ul style="list-style-type: none"> • Create beneficial fairness perceptions by making comparisons with competitors when advertising special discounts and price reductions when prices are below those of the competitors (Choi & Mattila, 2018); • When prices are higher than those of competitors, shift customer attention away from other offerings by guaranteeing the best price when booking directly rather than using a third-party website (Choi <i>et al.</i>, 2018; Choi & Mattila, 2018); • Be completely transparent about the breakdown of prices and extra fees (Andrés-Martínez <i>et al.</i>, 2014; Choi & Mattila, 2005; Chung & Petrick, 2013); • Reasons for taxes must be explained (e.g., obligatory tourist taxes) (Chung & Petrick, 2013); • Clearly communicate price differences to customers and provide complete information about different pricing options (Jin <i>et al.</i>, 2016a; Zhang <i>et al.</i>, 2020).
Payment parameters	
Pain of paying	<ul style="list-style-type: none"> • Promote mobile and online payment options, whether credit/debit card, Google Wallet, or PayPal (Kastanakis <i>et al.</i>, 2022; Prelec & Loewenstein, 1998; Raghurir, 2006; Shah <i>et al.</i>, 2016); • Offer customers the option to pay with combined currencies (Drèze & Nunes, 2004; Nunes & Whan Park, 2003);
Face value effect	<ul style="list-style-type: none"> • Quote prices in different currencies (e.g., both the local currency and the tourist's home currency), especially when the novel currency is a high-denomination currency (Lin & Fang, 2013; Lowe <i>et al.</i>, 2012; Saayman <i>et al.</i>, 2022); • Inform tourists about the value of the local currency and provide calculators (Saayman <i>et al.</i>, 2022);
Sunk cost effect	<ul style="list-style-type: none"> • Offer customers a prepayment option because it negatively affects cancellation intentions and increases the enjoyment of consumption (Patrick & Park, 2006); • Incentivize tourists to pay in advance by offering early booking discounts (Guan <i>et al.</i>, 2021; Park & Jang, 2014); • Do not impose large cancellation penalties, which trigger negative emotions and reduce the intention of tourists to visit in the future (Guan <i>et al.</i>, 2021; Park & Jang, 2014); • To address the problem of no-shows, consider overbooking events if tickets are paid for in advance (Gourville & Soman, 1998; Soman & Gourville, 2001); • Bill subscriptions for longer periods (e.g., semi-annually instead of monthly) (Gourville & Soman, 1998).

No managerial recommendations could be made for some behavioural pricing effects due to the mixed empirical evidence. For example, regarding price presentation, there are no clear recommendations concerning whether to present discounts in dollars or percentages. Additionally, only some studies revealed significant differences between 9-ending and even-ending prices. However, most studies

demonstrated that the price ending 0 signals quality and the price ending 9 signals value. When bundling prices, it remains unclear whether it is more advantageous for a touristic provider to declare the savings or omit the savings and, thus, whether they should implement transparent or opaque. Furthermore, regarding choice presentation, it is not possible to give concrete recommendations concerning whether more is always better. Although some studies revealed that tourists prefer large choice sets, others provided evidence of choice overload. Because most studies in the tourism sector demonstrated a choice overload, Park and Jang (2013) recommended that a maximum of 22 options be offered. Furthermore, there is mixed evidence concerning the price-accompanying communication, especially regarding the relative impact of price fairness perception. Although some studies revealed positive effects of price fairness perception on, for example, loyalty and willingness to pay, other studies could not prove significance. Finally, regarding payment parameters, different results have been observed for the effect of temporal sunk costs, that is, the waiting time before traveling. Although some studies have proven a negative impact of temporal sunk costs on visit intention, others have revealed a positive effect. Future research could contribute to understanding these findings.

6. Limitations and future research

Due to our application-oriented perspective, we have not assessed the methodological quality of the heterogeneous study designs of the literature analysed. It is questionable whether all study designs can generate reliable causal inferences regarding behavioural pricing effects. It remains possible that changes in purchasing behaviour due to behavioural pricing interventions may be less compelling than the cited literature claims (Shemilt *et al.*, 2013). This review has revealed that most studies on behavioural pricing effects in tourism have used experimental designs featuring hypothetical scenarios. Future research should analyse these effects using natural or field experiments for more realistic observations. Thus far, only a few field experiments have been conducted, with effect sizes (e.g., turnover and profit) for tourism companies remaining unclear.

Thus, a second limitation of our research concerns the conditional generalizability of the compiled intervention effects. We did not perform a quantitative meta-analysis of pooled effect sizes for behavioural pricing instruments in terms of purchasing effects. An important component of future research could include estimating intervention effect sizes as a basis for providing more reliable managerial implications (Shemilt *et al.*, 2013). This quantitative meta-analysis could incorporate research on behavioural pricing effects from tourism-related service industries, such as the telecom market. If not, the number of high-quality intervention studies might be too small. This quantitative research approach would reveal which behavioural pricing effects pertaining to this study's four dimensions (price presentation, choice presentation, accompanying communication, payment parameters) influence tourists most and which effects are negligible. In this context, future studies could analyse which implications are practicable considering, for example, legal, technical, and logistical obstacles, public relations impacts, and complexity. Furthermore, this article advises further research in the tourism context for various behavioural pricing effects, including the endowment effect and pain of paying effect. Regarding the endowment effect, it would be interesting to analyse whether free upgrades or trials for higher-priced categories increase the willingness to pay for future upgrades.

Future studies could also expand existing empirical research to provide appropriate managerial recommendations for tourism companies and address the problem of the predominant focus of the existing literature on individual behavioural pricing effects on the same tourism sectors. For example, existing studies on decoy options in the tourism industry focus on travel destination decisions, tour packages, and airline ticket purchases, and tourism studies analysing the price format effect focus on restaurant menus and hotel bookings. Future research should diversify analysis of these effects by extending existing approaches to more tourism sectors. For example, future studies could examine similar experimental scenarios in the context of booking theatre performances, museum visits, or scenic

cruises. Finally, there are contradictory research findings for some effects, such as for the position effect. It would be worth analysing which factors contributed to the different results and performing further studies to identify unambiguous causal relationships and derive clear and actionable recommendations. This literature review does not claim to be exhaustive. Instead, this paper has aimed to identify research on various behavioural pricing effects that are relevant to the tourism industry. As such, we have not considered literature that might be important to the field of pricing psychology in general or important for other industries. Furthermore, the proposed categorization of the behavioural pricing effects is based on the subjective evaluation of the authors. Those effects that dominate the behavioural pricing literature were chosen to be structured according to their scope of application for touristic service providers, producing the dimensions subsequently employed (i.e., price presentation, choice presentation, price accompanying communication, and payment parameters). Future studies could test the reliability of this framework.

7. Conclusion

This study aimed to provide a broad and structured review of the research on behavioural pricing effects that is relevant to tourist service providers and present potential approaches to implementing behavioural pricing in tourism practice. Tourism product characteristics are known to differ from ordinary retail products in terms of, for example, intangibility, the spatial and temporal separation between purchase and experience (Reisinger, 2001), and the scale of risk-taking (Murray & Schlacter, 1990). This literature review reveals that, as in other industries, numerous behavioural pricing effects influence tourists' price perceptions and associated purchase intentions and willingness to pay. In the tourism sector, implementing some behavioural pricing effects is more suitable than implementing others. Particularly relevant effects include those related to the temporal separation of purchase and consumption or the paradox of choice produced by the often-large selection of individually customizable products. In contrast, because tourism involves intangible goods, the endowment effect is less applicable and still under-researched.

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Appendix

Table A.1. Overview of the studies included in the literature review

Design parameter	Measures	Studies	
Price presentation	Anchoring effects	Book <i>et al.</i> (2016)	
		Choi <i>et al.</i> (2019)	
		Karande & Magnini (2011)	
		Kim & Hyun (2021)	
		Nicolau (2008)	
Price threshold effect		Tanford <i>et al.</i> (2019)	
		Viglia <i>et al.</i> (2016)	
		Boyol Ngan <i>et al.</i> (2018)	
		Jeong & Crompton (2017)	
		Jeong & Crompton (2018)	
		Kim <i>et al.</i> (2020a)	
		Naipaul & Parsa (2001)	
Price format effects		Parsa & Naipaul (2008)	
		Zou & Petrick (2021)	
		Noone & Mattila (2009)	
		Parsa & Njite (2004)	
Discount format effects		Rohlf's & Kimes (2007)	
		Yang <i>et al.</i> (2009)	
		Choi & Mattila (2014)	
		Hu <i>et al.</i> (2006)	
		Nazlan <i>et al.</i> (2018)	
		Nusair <i>et al.</i> (2010)	
Price bundling		Yang & Mattila (2020)	
		Yoon <i>et al.</i> (2010)	
		Cozzio <i>et al.</i> (2021)	
		Engeset & Opstad (2017)	
		Nazlan <i>et al.</i> (2018)	
		Repetti <i>et al.</i> (2015)	
		Tanford <i>et al.</i> (2011)	
Choice presentation	Default effect	Tanford <i>et al.</i> (2012)	
		Chen (2019)	
		Eslaminassab & Ehmer (2021)	
		Hoover (2022)	
		Jin <i>et al.</i> (2012)	
	Compromise effect		Steffen <i>et al.</i> (2020)
			Jeong <i>et al.</i> (2020)
			Kim & Kim (2016)
			Kim <i>et al.</i> (2019b)
			Kim <i>et al.</i> (2022)
Decoy effect		Park <i>et al.</i> (2022a)	
		Gonzalez-Prieto <i>et al.</i> (2013)	
		Josiam & Hobson (1995)	
		Kim <i>et al.</i> (2019b)	
Paradox of choice		Kim <i>et al.</i> (2022)	
		Greenwood & Ramjaun (2020)	
		Guillet <i>et al.</i> (2020)	

Design parameter	Measures	Studies
		Guo & Li (2022) Park & Jang (2013) Park & Kang (2022) Sthapit (2018) Sthapit (2019) Sthapit <i>et al.</i> (2019) Thai & Yuksel (2017)
	Position effect	Dayan & Bar-Hillel (2011) Ert & Fleischer (2016) Keshavarzianor & Wu (2021) Kim <i>et al.</i> (2019a) Pan <i>et al.</i> (2013) Pinger <i>et al.</i> (2016) Zare & Pearce (2018) Zare & Pearce (2022)
Accompanying communication	Risk aversion	Neuburger & Egger (2021) Prince & Kim (2021) Rather (2021) Villacé-Molinero <i>et al.</i> (2021) Wirtz <i>et al.</i> (2000) Wong <i>et al.</i> (2009) Zhang <i>et al.</i> (2020)
	Endowment effect	Paraskevaidis & Andriotis (2015) Shtudiner <i>et al.</i> (2019) Swanson (2004)
	Scarcity effect	Heo <i>et al.</i> (2013) Kim <i>et al.</i> (2020b) Li <i>et al.</i> (2021) Liu <i>et al.</i> (2022) Nazlan <i>et al.</i> (2018) Park <i>et al.</i> (2017) Park <i>et al.</i> (2022b) Wang <i>et al.</i> (2021)
	Price fairness perception	Andrés-Martínez <i>et al.</i> (2014) Asadi <i>et al.</i> (2014) Choi <i>et al.</i> (2018) Choi & Mattila (2005) Choi & Mattila (2006) Choi & Mattila (2018) Chung & Petrick (2013) Jin <i>et al.</i> (2016a) Jin <i>et al.</i> (2016b) Muskat <i>et al.</i> (2019)
Payment parameters	Pain of paying	Drèze & Nunes (2004) Kastanakis <i>et al.</i> (2022) Lee <i>et al.</i> (2019) Nazlan <i>et al.</i> (2018)

Design parameter	Measures	Studies
		Nunes & Whan Park (2003) Prelec & Loewenstein (1998) Raghubir (2006) Raghubir & Srivastava (2008) Shah <i>et al.</i> (2016)
	Face value effect	Lin & Fang (2013) Lowe <i>et al.</i> (2012) Raghubir & Srivastava (2002) Saayman <i>et al.</i> (2022)
	Sunk cost effect	Guan <i>et al.</i> (2021) Jang <i>et al.</i> (2007) Liang <i>et al.</i> (2014) Park & Jang (2014) Su <i>et al.</i> (2022)

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