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## DYNAMIC PRICING AND PRICE FAIRNESS PERCEPTIONS: A<br> \title{ \section*{DYNAMIC PRICING AND PRICE FAIRNESS PERCEPTIONS: A STUDY OF THE USE OF THE UBER APP IN TRAVELS} 

 STUDY OF THE USE OF THE UBER APP IN TRAVELS}}

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PRECIFICAÇÃO DINÂMICA E PERCEPÇÃO DE JUSTIÇA EM PREÇOS: UM ESTUDO SOBRE O USO DO APLICATIVO UBER EM VIAGENS

## PRECIOS DINÁMICOS Y PERCEPCIÓN DE JUSTICIA EN PRECIOS: UN ESTUDIO SOBRE EL USO DEL APLICABLE UBER EN VIAJES

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#### Abstract

Dynamic pricing is considered an efficient method of price management and has been used by hotels and airlines for decades. More recently, the urban mobility application (app) of Uber, present in more than 600 cities, has introduced real-time dynamic pricing to match supply and demand for the service. Although the literature highlights the benefits of dynamic pricing, behavioral economists argue that these price variations can be considered unfair. Thus, the objectives of this study are: to examine how consumers and tourists judge Uber's price fairness; to investigate the perceptions of surge pricing and suppression of information about the price multiplier when requesting the service; and to examine the behavioral outcomes from perceived price unfairness. This study adopts a qualitative and exploratory approach using focus group method. The main results suggest that the perception of price depends on the context and evaluation of service benefits; although dynamic pricing can be considered acceptable, under certain conditions it can trigger feelings of unfairness and negative emotions on the part of consumers; and that tourists can adopt behavioral strategies to minimize the uncertainty of dynamic prices.


KEYWORDS: dynamic pricing; price fairness perceptions; tourist behavior; behavioral economy in tourism.

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#### Abstract

RESUMO: A precificação dinâmica é considerada um método eficiente na gestão de preços e tem sido adotada por hotéis e companhias aéreas há décadas. Mais recentemente, - aplicativo de mobilidade urbana Uber, presente em mais de 600 países, introduziu a precificação dinâmica em tempo real que busca ajustar a oferta à demanda pelo serviço. Embora a literatura destaque os benefícios dos preços dinâmicos, economistas comportamentais argumentam que essas variações de preços podem ser consideradas injustas. Assim, os objetivos desse estudo são: examinar como consumidores e turistas julgam a justiça dos preços praticados pela Uber; investigar as percepções relacionadas à precificação dinâmica e à supressão da informação sobre o multiplicador da tarifa na solicitação do serviço; e examinar quais são os comportamentos derivados de julgamentos de injustiça dos preços. Trata-se de uma abordagem qualitativa e exploratória cujo método é o grupo focal. Os principais resultados indicam que o julgamento dos preços varia com o contexto e com a avalições dos benefícios do serviço; que a precificação dinâmica é considerada aceitável, mas que, em certas condições, pode desencadear sentimentos de injustiça e emoções negativas em uma parcela considerável de consumidores; e que turistas adotam estratégias comportamentais para minimizar a incerteza dos preços dinâmicos.


PALAVRAS-CHAVE: precificação dinâmica; percepção de justiça em preços; comportamento do turista; economia comportamental no turismo.

RESUMEN: La precificación dinámica se considera un método eficiente en la gestión de precios y ha sido adoptada por hoteles y compañías aéreas por décadas. Más recientemente, la aplicación de movilidad urbana Uber, presente en más de 600 países, introdujo la precificación dinámica en tiempo real que busca ajustar la oferta a la demanda por el servicio. Aunque la literatura destaca los beneficios de los precios dinámicos, los economistas de comportamiento argumentan que estas variaciones de precios pueden considerarse injustas. Así, los objetivos de este estudio son: examinar cómo consumidores y turistas juzgan la justicia de los precios practicados por Uber; investigar las percepciones relacionadas con la precificación dinámica y la supresión de la información sobre el multiplicador de la tarifa en la solicitud del servicio; y examinar cuáles son los comportamientos derivados de juicios de injusticia de los precios. Se trata de un enfoque cualitativo y exploratorio cuyo método es el grupo focal. Los principales resultados indican que el juicio de los precios varía con el contexto y con las valoraciones de los beneficios del servicio; que la valoración dinámica se considera aceptable, pero que, en ciertas condiciones, puede desencadenar sentimientos de injusticia y emociones negativas en una parte considerable de consumidores; y que los turistas adoptan estrategias de comportamiento para minimizar la incertidumbre de los precios dinámicos.
PALABRAS CLAVE: precificación dinámica; percepción de justicia en precios; comportamiento del turista; economía del comportamiento en el turismo

## INTRODUCTION

What do prices of air tickets, hotels, and urban mobility app of Uber have in common? Despite different cost structures and different benefits of these services, they use the same pricing strategy: dynamic pricing or differential pricing, which can be defined as selling identical products or services at different prices by the same seller (Xia et al., 2004). For this reason, tourists can find different prices for the same type of seats in the same flight, the same hotel room, or the same Uber
route in a city. Dynamic prices may vary depending on the time of use, purchase of the service, or the consumer segment. Dynamic pricing is considered to be an efficient method of price management for two main reasons.

First, dynamic pricing is appropriate to the temporal nature of service demand and is based on the economic principle of adjustment between supply and demand. Pricing according to temporal demand variations can maximize profits by obtaining better margins in periods of high demand and better utilization of installed capacity in periods of low demand. Second, dynamic pricing allows different prices to be set for market segments with different reservation ${ }^{3}$ prices that vary in terms of service needs and/or value perception (Bateson \& Hoffman, 1999).

Setting different prices for the same service according to demand has been successfully adopted for decades in the lodging industry, with revenue management ${ }^{4}$, and in air transport, with yield management ${ }^{5}$. Differential pricing is also used in car rental and cruise services industry. More recently, the urban mobility private service Uber has introduced real-time dynamic pricing-surge pricing—opening new possibilities for services pricing management in mobile apps (McGill \& van Ryzin, 1999; Martínez et al., 2013).

Although the literature suggests that sellers can benefit from dynamic pricing, behavioral economists argue that such price variations may be considered unfair or unacceptable by buyers. One possible explanation for the perceived price unfairness is that people think that raising prices and profits without a proportional increase in costs or quality of service to take advantage of periods of excessive demand is a socially unjust practice.

The traditional economic arguments for prices in dynamic pricing do not seem to convince people (Kahneman, Knetsch \& Thaler, 1986). Thus, technological advances allow companies to make their pricing practices more adaptable and efficient, but negative social reactions may limit the use of such practices, leading to a series of unpleasant and unintended effects (Park et al., 2010; Nicolau, 2013).

Chung and Petrick (2015) argue that the differential pricing used by airlines helps tourism to be perceived as a non-transparent sector in terms of pricing policies. In this line, Aslani et al. (2014) point out that the price and availability of seats have always been a source of confusion for tourists when purchasing air tickets, drawing the attention of consumers and researchers.

Research also indicates that consumers are concerned about the price that other individuals pay for the same service and that the online environment makes it relatively easy to obtain such price information (Weisstein, Monroe \&

[^1]Kukar-Kinney, 2013; Chung \& Petrick, 2015). Therefore, the consumer's point of view must be taken into account, because eventually, under certain conditions, consumers can view differential pricing practices as unacceptable or unfair.

Studies on price fairness are gaining traction in the field of marketing, since there are social restrictions to unfair pricing practices, particularly regarding differential pricing techniques (Malc et al., 2016). Consumer perceptions of price unfairness not only influence purchase intentions but can also lead to behaviors that directly harm companies, such as negative word of mouth, excessive complaints, boycotts, and change of supplier (Mayer \& Avila, 2014).

Despite the relevance and topicality of the subject, few tourism studies have addressed price fairness perceptions from a consumer perspective compared to the amount of research on price strategy from a managerial perspective. Thus, price fairness perceptions in differential pricing methods is a very current topic and should be further examined (Chung \& Petrick, 2015).

It is also notable that despite the heavy use of new technologies by tourists from all over the world, there are few studies examining the relationship between tourists and emerging dynamic pricing methods, such as the one introduced by Uber, which is characterized by being innovative and unique.

Uber has become a mobility alternative for tourists around the world in recent years. The company is present in more than 600 cities worldwide, which makes it attractive as an option to facilitate the transportation not only of residents but especially of tourists who are unfamiliar with the environment and local language (UBER, 2018).

Thus, the objectives of this study are: a) to examine how consumers perceive Uber's price fairness, at home and abroad; b) to investigate the perceptions of surge pricing and suppression of information about the fare multiplier when requesting the service; c) and to examine what are the behavioral outcomes of perceived price unfairness and possible effects on the use of the app on travels.

The method chosen to achieve the objectives of this study was the focus group, which allows the observation of complex behaviors, opinions, emotions, and social interaction. This study adopts a qualitative and exploratory approach, aiming to contribute to new perspectives on dynamic pricing in services used by tourists and residents.

The theoretical framework of this work addresses two main themes that guided the conceptual and methodological course of the study: the dynamic pricing and its applications in tourism and price fairness perceptions. The choice of Uber as an object of study is justified by the fact that it is currently one of the main mobility companies used by tourists and locals in different parts of the world, and because it has developed an innovative dynamic pricing model capable of real-time pricing according to demand. This innovation can lead to important changes in the traditional differential pricing of tourism services.

## THEORETICAL FRAMEWORK

Differential or dynamic pricing

One of the most prominent features of modern markets is related to the ease and speed with which price adjustments occur. It is possible for the same consumer to pay different prices for the same product or service, including from the same seller. This situation is even more common in the online environment, as the Internet allows companies to change prices quickly and in an individualized manner (Malc et al., 2016). In this section, the theory of dynamic pricing is presented from a business and consumer perspective.

From a business point of view, the importance of price is manifested by the fact that this is the only element of the marketing mix that yields revenue. Kotler and Armstrong (2010) define price as the amount of money charged in exchange for a product or service. Dynamic pricing, in turn, is defined by Haws and Bearden (2006) as individual-level price discrimination; this practice has become much more common with the increasing prevalence of internet marketing.

Airlines and hotel industry, particularly, have a long history of dynamic pricing practices. However, Elmaghraby and Keskinocak (2003) point out that companies generally set the price of a product or service over a relatively long period, keeping prices relatively stable. This practice was mainly due to the lack of accurate information on demand, the high transaction costs associated with the price change, and the huge investments in software and hardware to implement dynamic pricing strategies.

One of the possible reasons for airlines, car rentals, and hotels to adopt dynamic pricing in their services would be to balance supply and demand in sectors where short-term supply capacity is difficult to change. Therefore, dynamic prices are also known as take-it-or-leave-it prices, as the seller can dynamically change prices over time based on factors such as selling time, demand, and availability.

The literature on dynamic pricing has been more focused on issues related to the supply side, since prices are largely determined and differentiated by sellers. In this sense, two approaches can be highlighted: the analytical and the systematic. The first approach determines optimal pricing policies based on the demand curve and ideal inventory level, derived from traditional economic analysis. The second approach develops automated tools to improve pricing policies, using big data mining techniques and artificial intelligence (Lee et al., 2011).

An overview of the research on dynamic pricing by Weatherford and Bodily (1992) presents the main goals that motivate companies to use dynamic pricing. These are:

1. Profit maximization: there is a relationship between the contribution of companies and profit. Contribution toward fixed costs is defined as revenue minus variable cost. To obtain the profit one must subtract fixed costs from
contribution, and it is believed that if the contribution is maximized, then profit is maximized.
2. Maximization of capacity: this goal focuses on selling every available unit, since salespeople can be rewarded according to the number of units sold, even to the detriment of the price obtained.
3. Maximization of average revenue per customer: this goal seeks a balance between the number of customers and revenue, to avoid that only one customer consumes its full capacity.
4. Revenue maximization: with this objective, the company ignores the cost side, perhaps because costs are negligible or essentially fixed, or not a relevant issue for the decision.
5. Minimization of lost customer goodwill: a company may decide that it will not offer the price discounts practiced in the market. This is a more unusual operational objective; however, it can be a secondary objective to other objectives.
6. Maximization of the net present value: in a short time horizon, the company can discount the cash flows received in different periods.
7. Extraction of each customer's maximum price: the company seeks the highest price paid by the customer in which it is necessary to negotiate with each customer individually.

An important point raised by Xia, Monroe, and Cox (2004) is that information disclosure of dynamic pricing has the potential to reduce consumer satisfaction. In addition to the level of satisfaction, Hinz et al. (2011) also point out that the company must manage the type of information disclosed to consumers.

Apparently, potential customers are more encouraged to enter the market when the rules of the game are clear. However, this behavior may vary depending on the context. Thus, to effectively manage price decisions, firms must be able to understand the economic and psychological responses to various prices and price changes (Campbell, 1999).

Kahneman, Knetsch, and Thaler (1986) suggest that market behavior is affected by goals other than financial maximization based on the utility function of individuals assumed in standard economic theory. For this reason, managers must adapt the information they provide on any price change in any situation, since perceptions of fairness concern either the price or pricing (Chapuis, 2012). Companies should explain the rationale behind pricing, taking into account socially accepted standards.

From the perspective of the consumer, in turn, price perception is a comparative process (Monroe \& Petroshius, 1981). Chung and Petrick (2015) suggest that changes- especially, raising prices or charging extra fees-can have negative psychological and/or behavioral reactions. However, airlines, for example, continued to charge different prices and additional charges on the grounds that there were nonhostile responses to those practices.

Price assessment will be more positive and inspire more confidence to consumers if pricing strategies are more transparent. Miao and Mattila (2007) argue that price information transparency contributes to a greater sense of control on the part of the customers. Thus, information about other similar prices has an important influence on consumer price judgments when this information is presented transparently.

## DYNAMIC PRICING IN TOURISM

The benefits for companies of using dynamic pricing methods have long been known in tourism sectors, such as the airline and hotel industry where supply capacity is limited (Elmaghraby \& Keskinocak, 2003). Based on advanced technologies, firms can also monitor competitors' prices, actively participating in and influencing the pricing decision. Business economists argue that price differentiation benefits companies' profits because it extracts consumer surplus by charging different values from consumers with different price sensitivities (Lee et al., 2011).

According to Martínez et al. (2015) demand-driven pricing is a strategy often used in e-commerce and tourism, allowing companies to adjust prices to product demand. Understandably, this mechanism can be used more efficiently in the virtual environment where real-time information on demand can be obtained.

In tourism, the rule of differentiated fares or dynamic pricing based on the control of supply inventory, in the case of airline seats, marked the beginning of what was called Yield Management and later Revenue Management. In North America, the intensive development of American Airlines' Revenue Management techniques began in April 1977, shortly before the deregulation of US domestic and international airlines. Over the years, systems development has progressed from single-leg control to source-to-destination control (McGill \& van Ryzin, 1999).

Initially, in the definition of American Airlines, the objective of revenue management was to maximize passenger revenue by selling the right seats to the right customers at the right time (Weatherford \& Bodily, 1992). As other segments, such as the hotel industry, began to adopt yield management practices, the term "yield" was replaced by "revenue management (RM)".

The advance in information technology created new opportunities for more comprehensive reservations control, allowing at the same time greater integration with other important functions such as planning and management. The success of revenue management in airlines was widely publicized, which promoted the development of revenue management systems for other transportation sectors and other service sectors (McGill \& van Ryzin, 1999).

While the objective of yield management is to maximize the revenue generated by a perishable asset, revenue management is a related concept, but with a broader focus, also trying to maximize revenue, but taking into account other costs, such as selling costs (Weatherford and Bodily, 1992).

In the case of hotels, the emergence of various distribution channels, including online, has created a more elastic (price-sensitive) market. As a result, dynamic pricing has become the focus of pricing strategies for these enterprises, as prices often vary by channel, product, customer, and time, as a result of changes in information and supply and demand conditions. Other characteristics of dynamic hotel pricing indicate that this is a flexible approach that also considers differences between customers, products, transactions, competitors' prices, changes in market characteristics, and time (El Haddad et al., 2015).

In general, e-commerce and tourism companies use big data to plan their operations. With the support of advanced technologies, consumer demographics and preferences data from anywhere in the world can be stored on servers, allowing companies to create low cost, real-time dynamic price settings and adjustments (Lee et al., 2011). In this case, both companies and consumers in a dynamic pricing environment act strategically. Hinz et al. (2011) point out that both parties have private information: the seller sets the price, which is of great interest to the buyer, and the consumer has information about his or her willingness-to-pay and acceptable price range criteria.

An important source of information that can affect tourists' price range is the abundance of online reviews. In tourism, and other e-commerce sectors, different forums and review sites provide information on price, quality, perceived values, satisfaction, and experience of other consumers that alter the perceptions of tourists (Lee et al., 2011). In the case of the Internet, Ye et al. (2014) indicate that tourists provide information not only about the products and services in question, but also aspects such as perceived price, perceived quality, value, and post-consumption evaluation.

## PRICE FAIRNESS PERCEPTIONS

Price fairness perception can be defined as a consumer's assessmentcognitive and affective—of whether the price charged by a seller is reasonable, acceptable, or justifiable. This assessment is based on comparisons: with prices paid by other consumers, market reference prices, and past or customary prices. Whenever there is a difference between the price charged and the reference established for the judgment, there is a risk of perceived price unfairness (Xia, Monroe \& Cox, 2004).

In addition to price fairness perceptions, also pricing methods are evaluated by consumers. Some pricing methods such as dynamic pricing may be considered unfair because they oppose established social standards. The breaking of socially accepted norms can lead to perceptions of price unfairness,

and the social context can influence the unfairness perception. Social norms related to prices may vary depending on the context and the community studied (Maxwell, 2002; Xia, Monroe \& Cox, 2004).

In fact, the emergence of several methods of dynamic pricing in tourism has raised questions about fairness perceptions, , with authors arguing that pricing methods should be assessed, thus being considered fair or unfair (Chung \& Petrick, 2015). The behavioral pricing literature suggests that perceived fairness of a price increase has a major impact on customer reactions. Some authors (Homburg et al., 2005; Gielissen et al., 2008) argue that fairness is an increasingly important issue in the economy since economic transactions are not conducted solely for economic reasons but are also subject to rules and social norms.

The principle of dual entitlement, a social norm of fairness documented by Kahneman, Knetsch, and Thaler (1986) indicates that fairness perceptions are driven by the conviction that consumers are entitled to a reference price and companies are entitled to a reference profit. According to this social norm, consumers and firms have an entitlement to the terms of the so-called reference transaction. The reference transaction is characterized by a reference price and by a positive reference profit to the firm. A firm is not allowed to violate the principle of dual entitlement by arbitrarily increasing its profits; however, when the reference profit is threatened (e.g. by cost increases) a price increase should be considered fair or acceptable. The principle of dual entitlement states that, in general, consumers endorse the fairness of price increases if accompanied by increases in sellers' costs. However, price increases that are not accompanied by cost increases should be considered unfair.

Perceptions of unfairness regarding price increases are also affected by the company's reasons for increasing prices. When the consumer perceives the firms' reason as negative, for example, to take advantage of a situation of shortage of a product to obtain additional profits, the price increase is considered unfair. Perceptions are also influenced by considerations about the increase causes (internal or external) and about the increase decision control (controllable by the company or due to uncontrollable factors).

Price increases justified by external causes outside the control of the company, for example, due to the rise in international oil prices, are considered fairer and more acceptable. The existing literature also indicates that price increases without transparent and clear information can be considered unfair (Campbell, 1999; Mayer \& Avila, 2014).

The quality and benefits of a product influence fairness judgments. Higher prices should be considered fairer when there are corresponding quality levels, when the company has a good reputation and delivers a set of benefits considered adequate concerning the costs incurred by consumers.

Considerations in relation to a price increase are also influenced by the level of satisfaction with the service. Satisfied consumers tend to consider a more acceptable price increase than unhappy consumers. Thus, it is not only
price references and social norms that affect the judgment of fairness, but also aspects related to quality and performance (Zeithaml, 1996; Xia, Monroe \& Cox, 2004; Martínez et al., 2013).

Perceptions of price unfairness are related to negative emotions and can lead to harmful social reactions, causing a number of unpleasant effects that harm the reputation of the company and its business, current and future. Perceived unfairness reduces the confidence and perception of product value, thus increasing price-perceived sacrifice.

In addition, consumer satisfaction declines when there is perceived price unfairness. Companies may lose their customers, since consumers change their purchase and repurchase behavior (Martínez et al., 2013; Murphy \& Pritchard, 1997; Monroe \& Xia, 2005; Chung \& Petrick, 2015; Park et al., 2010; Nicolau, 2013). Studies also indicate that perceived unfairness can lead to potentially destructive behaviors such as negative word of mouth, excessive complaints, boycotts, and even lawsuits (Mayer \& Avila, 2014).

## DYNAMIC PRICING AND FAIRNESS PERCEPTIONS: THE USE OF THE UBER APP

More and more tourists are using the Uber app as a means of getting around in different cities of the world. The company is present in more than 600 cities (UBER, 2018), which makes it an attractive option to facilitate the mobility not only of residents but especially of tourists who do not know the characteristics of the environment and the local language. In fact, in 2017 the Uber app was considered one of the most useful travel apps on the Internet ${ }^{6}$, being one of the 20 most downloaded apps for iPhone and Android phones.

Uber's dynamic pricing strategy is considered unique in the market. Created in 2008, the company emerged as a leader in the sharing economy and stood out from other transportation options by pricing dynamically, using a real-time algorithm that adjusts the price of rides to match driver supply to rider demand. Despite the innovative and potentially disruptive content of this strategy, the lack of transparency has raised questions of whether Uber should artificially manipulate prices and if price dynamics are fair to customers and drivers (Chen et al., 2015). In October 2016, the Uber app began to change the rules in the presentation of the dynamic prices to the Brazilian users, deciding to hide the surge price multiplier. In practice, it was no longer possible to know if the surge price charged by Uber at certain times and places was twice or ten times more expensive than the typical fare. The decision to hide the multiplier, which had already been adopted in other countries, was not well received by the media

[^2]and sparked a wave of criticism on social media ${ }^{7}$. Critics argued that residents and tourists-the latter without references of local transportation price-would find it more difficult to assess the fares charged by the app.

This practice made Uber's dynamic pricing even less transparent to its end consumers, either tourists or locals. The main difference is the lack of reference prices for tourists, who in general are unfamiliar with the environment.

Considering the rapid adoption of mobile technologies in general, and the adoption of Uber in particular, by tourists in different destinations; and considering that Uber's current pricing method constitutes an important innovation in relation to the differential pricing practiced traditionally in tourism; it is necessary to examine how consumers, when traveling and in at home, perceive and behave regarding the service.

## METHODOLOGY

Few tourism studies have dealt with the perception of fairness in dynamic prices; thus, this study is exploratory, adopting a qualitative and descriptive approach. The focus group method was chosen to undertake an in-depth investigation of perceptions and feelings of Uber users related to fairness perceptions of prices charged by the company and to the method of dynamic pricing. Morgan (1993) argues that the focus group is indicated precisely to analyze complex behaviors and their motivations and to make connections with the literature reviewed.

Four focus groups were held on February 2018 in the cities of Niterói and Rio de Janeiro. Each group comprised 5 to 8 participants-a number recommended by Morgan (1993)—totaling 20 participants, who authorized the recording of sessions. The criteria for participating in the focus groups were: a) to use frequently the Uber app (at least once a week); b) to have used the app in travels (abroad).

The demographic characteristics of participants, whose names were changed to ensure anonymity, was 50/50 by gender, aged between 19 and 44 years, and half of them have completed tertiary education, followed by those with secondary-level qualifications, and all lived in the metropolitan area of Rio de Janeiro. Occupations of participants included university students, administrators, filmmakers, teachers, military, accountant, electrical technician, businesswoman, economist, and barista.

To conduct the discussions, the moderator-researcher used a semistructured script that addressed the use of the app in travels domestically and abroad, evaluation of Uber's surge pricing, and users' opinions about the suppression of price multiplier information.

[^3]The recordings of the group discussions were transcribed and content analyzed, following the procedures of Bardin (1977) and Saldaña (2015). To achieve the objectives of this study and to examine how tourists perceive price fairness of Uber, categories of analysis were created based on the literature on price fairness perception: a) comparison with reference prices (Monroe \& Xia, 2005; Nicolau, 2013; Poundstone, 2010; Chen, et al., 2015); b) perception of service quality, (Xia, Monroe \& Cox, 2004; Martínez et al., 2013); c) reactions to dynamic pricing (Xia, Monroe \& Cox, 2004); d) potential consequences and behaviors resulting from perceptions of unfair pricing and pricing methods (Martínez et al., 2013; Murphy \& Pritchard, 1997, Monroe \& Xia, 2005; Chung \& Petrick, 2015; Mayer \& Avila, 2014).

Even starting from categories indicated by the literature, this project adopted an inductive approach, without the purpose of testing a pre-defined theoretical model, mainly because it is an innovative technology and the topic is under theoretical development.

## RESULTS

## Evaluation of Price Fairness: Comparisons with Reference Prices

The literature on price fairness (Monroe \& Xia, 2005; Nicolau, 2013; Poundstone, 2010; Book et al., 2016) suggests that the perception of price fairness is a comparative process. It is normal for consumers to compare the prices they are paying with references available in the market: prices of substitute services, prices of direct competitors, past prices, and prices paid by other consumers. The perception of unfairness is triggered when the price evaluated is well above the references used during the evaluation process.

Consistent with existing studies, participants in the present study reported making constant comparisons of Uber's prices with references available in the market. Participants generally considered the prices set by the app as advantageous and fair when compared with market references.
"I've already compared Uber with Cabify and 99, but Uber always ended up being cheaper." (Joana)
"For me, as a resident in Baixada Fluminense having to go through gigantic routes to get downtown Rio, for example, for me it was great. Before I couldn't do it in a taxi because it was very impractical, the monthly expenses were enormous. Today I can do that by Uber." (Henrique)
"Comparing Uber to public transportation [...] sometimes it is more expensive than getting an Uber." (Alexandre)
However, when consumers get better prices, despite being frequent users, they have reported choosing other options.
"I compare! For example, I was staying in Balneário and wanted to go to Beto Carreiro, I thought like 'How much should it be by Uber?', then I saw if I got a transfer it would be cheaper." (Camila)
"I have another app called 'Vá'. If I enter the destination it gives you all the prices, of all the cars, Uber, Cabify, taxi 99, Pontual, everything. Whatever is cheaper, I go there and I click." (Cristina)
Four types of comparisons were observed in the process of price evaluation, both in mobility situations in tourism and in mobility in the place of residence: a) comparison with other transport services; b) comparison with competing apps; c) comparison between categories of Uber services; d) comparison with usual prices or paid in past rides.

Although price comparisons are frequent, some interviewees reported that they did not make comparisons before deciding to use the mobility app. In general, these situations involve some perceived degree of risk in the context or the destination, such as at times of greater insecurity, such as "five o'clock in the morning at the end of a party" or "if I am in a street that I do not know nothing, I always get an Uber". In these cases, the needs for greater security and convenience seem to define the behavior, reducing the importance of price references in the decision-making process.

## Perceived Benefits: Quality of Service and Usability of the App

The existing literature indicates that consumers evaluate the acceptability of the price regarding the benefits that make up a product or service, i.e., people analyze the purchase value, the balance between costs and purchase benefits. For example, price increases accompanied by improvements in the quality of service should be considered fair. Thus, it is not only market price references that affect perceived fairness, but also aspects such as quality of service, and usability of technology (Zeithaml, 1996; Xia, Monroe \& Cox, 2004; Martínez et al., 2013).

In fact, the results of this research indicate that price evaluation of the mobility app is a complex process involving several aspects of the service. During group discussions, participants often mentioned the set of benefits perceived in using the Uber app, either abroad or at home. The overall quality of the service-a combination of trip safety, good driver care, clean cars, and amenities (water and candy)-is the central benefit perceived by the survey participants, who consider Uber a step up from taxis.
"I think Uber somehow came to improve a job that was being very badly made by taxi drivers. After they showed up several taxi drivers improved the service, even by the fear of losing riders. I think Uber came to improve the system as a whole." (Paulo)
"I think the biggest advantage that Uber brought in to transportation in general is the security that the guy is following a route." (Carlos)
"On the security issue, compared to the taxi, there's that thing about you sending the information to other people, so if you 'disappear' they know where to start." (Maria)
"Being a woman who walks alone I am a little insecure. I like it because I can send the route [...] I can warn, ah, I'm going to that the place, I'm going with this person." (Joana)
"[Uber] A sophisticated and differentiated company! It has everything!" (Luciana)
The availability of the service in different places and times was also considered an important service-related benefit, a sense of being able to come and go at any time, of having the service always available. The interviewees also mentioned that security, efficiency, and utility of the service justify the frequent use of the app at home and abroad.
"For me, Uber has become a dependency, because I go whenever I want, I come back whenever I want." (Alexandre)
"For those who do not have a car, like me, [...] I feel like I own a car that is an Uber. You choose to come and go at any time." (Alexandre)
"Abroad I use Uber more! [...] I don't know, Uber gives me this feeling that it's already global, so wherever I go there'll be an Uber I'll be able to use." (Maria)
However, in places where the tourist sees greater benefits in other services, the use of Uber may not be a priority, as the interviewees' accounts revealed.
"If it is convenient, I'll take public transportation." (Camila)
"You've traveled to São Paulo, you're in the East Zone and you want to go to the other side of the city, to the West Zone and you're alone. I would never get an Uber. I'd take the subway." (André)
"There are places where I'd rather get a cab. A place I know, like, in England. I'd rather get a cab there because I know drivers made a huge study of all the city streets, they need years of training to drive a cab. Then, l'd rather take the cab. Uber for me ends up appearing something inferior, because the price is the same." (Joana)
Regarding the technological aspects of the app, some of the benefits mentioned by participants were: ease of use, simple request, information provided, data security, and ease of navigation. Familiar settings in different destinations is
an important factor for the use of the app when traveling, a positive aspect for the tourist experience.
"In Miami already had the color of the car, which now has here and didn't have at the time. This was important because we can identify [the driver's arrival] by the color too." (Cristina)
It can be observed that service purchase benefits were, in general, considered useful when compared with the service price. A good balance between costs and benefits expressed in terms such as "it's totally worth it" or "is good value for money" (Zeithaml, 1996). Participants indicated that the use of the app is greatly influenced by the fact that the price-value relationship is perceived as appropriate for the service provided, and if compared to other mobility options. Thus, as indicated by the literature, this aspect suggests a tendency to evaluate the price as fair and acceptable (Xia, Monroe \& Cox, 2004; Martínez et al., 2013).
"[Uber] will cost more, but l'll have air-conditioning. It's raining today, so l'm getting a bus. It's more cost-effective." (Natália)

Positive statements about service benefits were also accompanied by concerns about the reduction in Uber's quality of service. With expressions such as "driver quality declined," "the service standard dropped a lot," and "quality dropped sharply", Participants expressed concern about the quality of service after its rapid expansion in several cities.

Most participants agreed that Uber's perceived quality has been decreasing in recent times, however, prices are still seen as good and acceptable. This reduction in perceived quality may lead to a reduction in perceived value, leading to changes in the consumer's willingness to pay the same prices.

## Dynamic Pricing and Unfairness Perceptions

According to the existing literature, arbitrary price increases that raise the company's profit without being accompanied by improvements in the benefits delivered by the service and which are significantly higher than the existing reference prices can lead to a sense of unfairness.

All these aspects are present in Uber's dynamic pricing, a method that is based on the economic principle of demand and supply which, in general, is considered unfair by consumers (Kahneman, Knetsch, \& Thaler, 1986; Maxwell, 2002; Xia, Monroe, \& Cox, 2004; Nicolau, 2013).

A quite evident change in the positive attitude of the participants toward Uber's prices occurred when the discussion focused on dynamic pricing. Participants emphasized that prices increase despite no higher costs being incurred to the company or improvements in the quality of service for the consumer.

Many of them showed, through verbal and nonverbal communication, their dissatisfaction with this pricing method. The reports have shown distrust that Uber uses dynamic pricing only to arbitrarily increase its profits. Another argument against dynamic prices refers to the lack of clarity about how it is calculated.
"I'm under the impression that they just want to make money." (Joana)
"I think they only care about profit. I do not think they are worried about the population. They are worried about their pocket." (Luciana)
"The 'dynamic' ends up being an absurd value and you end up being taken by surprise many times." (Luciana)
"I don't like! It is not clear." (Cristina)
"It's not explained! It's an electronic system that you, as a consumer, can't see who is manipulating [...]." (Pedro)
There was also an intensification of the participants' sense of unfairness because Uber charges more expensive fares when people are more dependent on the service, such as rainy days, riskier hours, or even when exiting major events-especially when exclusive contracts are established between Uber and the organizers. As the literature suggests, in situations of high dependence, the sense of unfairness may increase (Mayer \& Avila, 2014).
"The 'standard', 'normal' price is a very good price, but it rains and the price goes up."

> "The dynamics of Uber bothers me when it rains or when it is peak time because they put [the fare] up there, which I think is unfair." (Cristina)
> "They are monopolizing a right of choice. Whether you have an event or not, whether it's sponsored or not, it's a consumer right to choose to go home the way he wants!" (Caio)

However, not all respondents were against surge fare, opinions were divided. Some participants considered dynamic pricing to be acceptable. For them, knowing the final price of the race before hiring the service, even with surge fare, offers riders the possibility of comparing with other options, such as taxi, for example.
"You've the advantage of knowing the value to get to your destination. It's more or less in that range [...]. Different from taxi, in traffic jams." (Lucas)
"I think it's fair! Choice options. I end up choosing the cheapest option for me." (Alexandre)


There was a general feeling from the survey participants that Uber's "regular" price (or when the fare multiplier is 1 ) is fair, as is the final price of the ride. The psychological costs are also lower than in other modes of transport (e.g. fear, confusing information, sense of greater control of the situation).

Nonetheless, with dynamic pricing, there seems to be a reduction in the perceived value of service for many consumers, an imbalance between costs and benefits. Perceived sacrifice increases when the surge fare is in effectbecause they are too high or because they lead to a sense of unfairness-without a corresponding increase in the benefits received (Murphy \& Pritchard, 1997).

## Suppression of Surge Price Multiplier

Since October 2016, the Uber app has stopped informing the surge price multiplier at the time of requesting the service. If a tourist needs the service on a trip, for example, he will not know how much more will be paying in relation to the regular ride fare. The existing literature indicates that price increases that do not have clear grounds or information available to consumers can be considered unfair (Campbell, 1999; Mayer \& Avila, 2014).

The opinions of the study participants differed as to the suppression of information about the surge price multiplier. Most participants disagreed with this policy, arguing that if price information was no longer transparent, removing the multiplier made it even more difficult to judge the final ride price. For these participants, knowing the multiplier increases the sense of control over prices, allowing to know how much more is being charged for the service, especially when there are no previous references.
"I'd like to know about the dynamic multiplier, you see? For me to base my purchase decision on." (André)
"If you arrive at a place and have every explanation of why [the dynamic fare] you'll feel more respected." (Cristina)
"I really don't like it [to hide the price multiplier] because before I had more or less an idea [of the price]. Before [the app] warned me 'wait another 2 minutes that your price may fall', so I waited. Now I do not have it anymore, so I have no more an idea of how much the regular fare is. [...] when it happens on a trip [abroad] that's just it, I'm in a lot of need and [...] I have no idea how much it normally costs." (Joana)
However, some participants indicated that they did not care about not having information about the surge price multiplier because they felt uncomfortable knowing how much more they were paying for the service.
"If I saw the multiplier, I would never want to get an Uber." (Alexandre)
Trips have been considered special, situations in which people want leisure and relaxation, carefree moments in which more spending is expected. In these cases, information about the multiplier, according to some interviewees, would be unpleasant and unforgettable which, in a way, would spoil the tourist experience.

> "I think [in travel] I would care less [with the multiplier]." (Patrícia)
> "When you travel you are more willing to spend [more] and think only about leisure, you see?" (Alexandre)
> "When I'm traveling, I'm going to be the one who's going to get into Uber saying: 'Five times more expensive!' [expression of dislike]." (Natália)

## BEHAVIORS RESULTING FROM THE EVALUATION OF UNFAIRNESS

Perceptions of price unfairness can lead to unfavorable social reactions and potentially destructive behavior of consumers (Martínez et al., 2013; Murphy \& Pritchard, 1997; Monroe \& Xia, 2005; Chung \& Petrick, 2015; Park et al., 2010; Nicolau, 2013; Mayer \& Avila, 2014). In the present study, participants reported different behaviors to deal with unacceptable or unfair prices. Some strategies involve the decision not to use Uber; to wait and request the service when the surge price drops to an acceptable level; or even bypassing the app, setting the fare directly with the driver.
"I'm used to a route that is 20 reais and it's costing 30. So, I just take ten [wait a few minutes], I'll see, and do the research again. In Uber's own app." (Natália)
"If I see that Uber is expensive, I just wait, give it a refresh, to see if it [the price] changes." (Adriana)
"I only know that when we enter [in the Uber app] and it's 'in the surge' we exit right away [...]!" (Luciana)
"Well, on those occasions [surge price] what do I do? I'll be friends with an Uber, l'll ask the driver to pick me up at a certain hour and you call the guy privately. I do this." (Adriana)
"I got an Uber in Orlando at Disney. He charged me a fixed fare to pick us up at the hotel and take us to the parks." (Cristina)
The use of social media to spread dissatisfaction, as well as complaints in the app, were other behaviors mentioned by participants to deal with unfair prices or charges.
> "Nowadays you campaign and put it on Facebook or wherever you want, and it works, it has a huge effect!" (Luciana)

Finally, among the potential consequences of perceived price unfairness, the participants mentioned reduced satisfaction, loss of confidence in the company, and decreased intention to use the service. Reports have shown that participants may adopt other competing mobility apps, especially those without surge pricing, or seek alternative transportation to "escape" the sense of unfairness. However, even when there was a sense of price unfairness, several interviewees admitted to using the Uber app, arguing that they are used to it, "too comfortable", and that the brand has become consolidated and present in many tourist destinations.

## DISCUSSION OF THE RESULTS

In general, the consumers interviewed in this study perceived Uber's regular prices to be fair and advantageous, at home and abroad, when compared to other modes of transport, such as taxis, traditional transfer options or transportation for sightseeing. Given that Uber is a global company acting on the local scale, it was possible to examine the advantages and disadvantages of using the service in environments unknown to tourists.

Even in situations where Uber is more expensive, its use has still been considered advantageous. For example, Uber is perceived as safer, more reliable, and more convenient than cheaper options such as buses and subways in certain travel contexts. The predictability of the transportation cost and the route to be followed by the driver, as well as the ease of use, were highlighted by participants, indicating that there is a greater sense of control when using the app in unknown cities.

Finally, Uber has become a top-of-mind brand provoking a social effect of adoption by friends and family. However, in cities with a good public transport network, with clear information, and easy access, tourists indicate that the use of the app is not necessary.

Consumers' opinions split on the surge fare. It was possible to observe that respondents considered the dynamic pricing acceptable. However, as might be expected, this is a controversial pricing method that triggers perceptions of unfairness and negative emotions in many consumers.

Especially in critical situations, when riders are more dependent on the service, they feel wronged by a sharp increase in the price of the service, without corresponding increases in costs.

According to some respondents, the sense of unfairness grew when information about the surge multiplier was suppressed, but consumers seem to have adapted. Surprisingly, many have reported choosing not to know the multiplier, especially in travel situations.

Apparently, information about the multiplier is unpleasant and can reduce the enjoyment of the trip for some tourists. Many agree that worrying about travel prices should not overpower the experience; one should be ready to spend more than when at home.

Perceptions of price unfairness observed during the interviews were accompanied by negative emotions, expressed in emphatic reports of annoyance, anger, loss of confidence, and reduced satisfaction. The resulting behaviors range from personal strategies to avoiding the surge price (for example, waiting a little), bypassing the app by dealing directly with known drivers, adopting new apps, or even returning to the traditional taxi. Complaints and negative word of mouth on social media are also common, according to respondents.

But it was interesting to note that even when reporting a sense of unfairness, most participants remained loyal to the application, at home and on trips. This apparently contradictory behavior has an intrinsic rationality. There were many benefits recognized by the interviewees, which indicates that the app still has high perceived value: i.e. offering good value for money.

However, the balance between perceived sacrifices and benefits may become unfavorable if the company loses control of the service and its quality, if prices cease to be competitive, and the image begins to deteriorate.

Figure 1: Perceptions of fairness and use of the Uber app in travel


Source: The authors

The habit of using the app at home and familiarity with it motivates the use of Uber when traveling. Thus, it is possible to state that the more the app is adopted and used by individuals for mobility in their cities, the greater the likelihood that they will adopt it, avoiding little known local apps, even if it means putting up with surge pricing. However, it was possible to observe that Uber's loyal riders use alternative strategies to avoid high and unfair prices.

Many of these strategies bypass the app by establishing direct relationships between tourists and drivers, while others considered using new mobility apps that avoid surge pricing, jeopardizing Uber's future and business profitability.

Finally, the main findings of this research are summarized in Figure 1. As the figure suggests, the use of the Uber app when traveling abroad depends, ultimately, on the characteristics of both the app and destination. As shown throughout the paper, several factors influence the process of forming price fairness perceptions.

On Uber's side, it can be mentioned the overall quality of the service provided, the practice of surge pricing, and the usability of the app; on the side of the destination, factors such as quantity and quality of mobility options, reference price, and consumer perceived risks are some aspects affecting consumer evaluation.

This evaluation, in turn, provides the parameters for perceived fairness and, ultimately, influences the behavior of the tourist in the use of the app when traveling abroad. It is worth mentioning that this is a conceptual proposal, of an empirical and inductive nature, derived from field observations and drawing on the existing literature.

## CONCLUDING REMARKS

The understanding of how consumer perceptions of fairness work in the case of Uber's dynamic pricing is a way of applying price psychology theories in the context of tourism and assisting tourist mobility. The results contribute both to the literature on the topic and to the practice of companies in the sector.

This path allowed to verify that the interpretation and tourist perceptions of prices regarding Uber's dynamic pricing are not static and, therefore, they vary according to the context in which they are presented. Thus, there are tourist destinations and contexts in which dynamic pricing and prices will be more acceptable or perceived as fair than others, be it abroad or at home.

The reports indicated that the tourist seeks to minimize the feeling of uncertainty and unpredictability of prices in the destination. Companies should provide the necessary information for tourists to make informed choices and avoid unpredictability, such as information about high season, low season, events, or any other situation that changes prices.

In addition, even though they are not under the control of the firm, competitors' prices, tourists' overall perception of prices, and the reputation of the company should be monitored.

Finally, given the complexity of the studied phenomenon and the application of the methods only in Uber context, the findings of the present study are limited. As it is a qualitative study, further research could develop quantitative data within Uber's context.

Other suggestions for future research include studying more contexts in which dynamic pricing and perceptions of fairness in tourism prices also apply, such as other mobility apps, hotels, restaurants, or events. Also, research that addresses the theme of tourism mobilities and investigates possible causal relationships between price fairness perceptions and dynamic prices in tourism, testing the conceptual proposal presented here.

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[^1]:    3 Reservation price is a limit on the price of a good or service. On the demand side, it is the highest price a buyer is willing to pay for a good or service. The difference between the consumer's reservation price and the market price is the consumer surplus, a measure of the additional benefit that consumers receive when they buy products or services in a given market (Pindyck \& Rubinfeld, 2002, p. 124)
    4 For McGill et al. (1999), revenue management is the creation of different pricing policies based on control and perishability in the supply inventory.
    5 According to Gallego and Ryzin (1997), yield management is the use of booking policies and information systems data to increase revenues by combining capacity and demand.

[^2]:    6 https://exame.abril.com.br/tecnologia/os-20-aplicativos-para-iphone-mais-baixados-de-2017/
    http://webinformado.com.br/aplicativos-mais-baixados/
    https://www.pcmag.com/feature/359810/the-best-travel-apps-of-2018
    http://www.godsavethepoints.com/2018/01/25/flights-hotels-and-everything-else-the-10-best-travel-apps/

[^3]:    7 https://oglobo.globo.com/rio/aplicativodouberescondedetalhesdetarifadinamica20615131
    https://tecnoblog.net/197691/uberescondertarifadinamica/

