Perceived unfairness of revenue management pricing: developing a measurement scale in the context of hospitality

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Abstract

Purpose – This paper aims to offer a multi-dimensional scale for measuring the concept of perceived unfairness of revenue management pricing (RMP) in the context of hospitality.

Design/methodology/approach – To develop a measurement scale for the perceived unfairness of RMP, the authors conducted a qualitative study using the critical incident technique to identify the key components of our measurement tool. They then collected two samples of quantitative data enabling them to have compelling evidence of the scale's reliability and validity.

Findings – This research identified three dimensions of perceived unfairness of RMP in the context of hospitality: perceived normative deviation, perceived opacity and negative effects. The new scale proposed here is an alternative measurement instrument that could be useful for detecting and correcting some negative aspects of RMP.

Practical implications – This measurement scale will help hotel managers to detect potential feelings of unfairness in relation to the RMP policies. It might also be used within the framework of market analyses and pricing strategy plans. Finally, the results of this research show that transparency, fairness and ethics based pricing could help hotel managers increase their revenue-per-available-room during and post COVID-19 pandemic.

Originality/value – This research develops a complete measurement scale for perceived unfairness of RMP, including cognitive and affective dimensions. The richness of this scale will help hospitality companies effectively identify the indicators that denote perceived unfairness of RMP, making them better equipped to handle customer dissatisfaction.

Keywords Measurement scale, Perceived unfairness, Revenue management, Pricing, Hospitality, Hotel

Paper type Research paper

Introduction

The concept of "Perceived unfairness" has received considerable attention in the existing literature on price perception in general, and in *revenue management pricing* (RMP) in particular. In the hospitality industry, revenue management (RM) is generally defined as a management process regarding pricing strategy, demand modeling and forecasting, inventory and price optimization, distribution channel management, and performance evaluation (Baker *et al.*, 2020; Binesh *et al.*, 2021; Denizci Guillet, 2020; Sainaghi, 2020). RMP is therefore the pricing aspect of RM (Ng *et al.*, 2017; Xu *et al.*, 2019). In service industries, RMP goes well beyond the traditional pricing approach to include inventory and price optimization methods with the goal of maximizing the share of wallet (Ali *et al.*, 2019; Gao *et al.*, 2021; Schlereth *et al.*, 2018). A number of studies (Chung and Petrick, 2015) have been devoted to consumer judgment of RMP. Most of these studies consider perceived fairness and perceived unfairness to represent opposite ends of the same continuum. Nonetheless, studies in psychology and consumer behavior (Finkel, 2001; Katyal *et al.*, 2019; Xia *et al.*, 2004) have demonstrated that these two phenomena are conceptually different. Colquitt and Rodell (2015) suggested that researchers should focus more clearly on the concept of perceived unfairness because the feeling of being treated unfairly negatively impacts the victim's behavior. Following this recommendation, some research in hospitality management (Abrate *et al.*, 2019; Méatchi and Camus, 2020) investigated the concept of perceived unfairness of RMP. However, there are currently few psychometrical and managerial models conceptualizing and measuring this concept. Furthermore, the COVID-19 pandemic has had disastrous consequences on the hospitality industry prompting hoteliers to adopt measures to tackle various challenges caused by this health crisis (Jiang and Wen, 2020). The purpose of this research is to offer a new scale for measuring the multi-dimensionality of perceived unfairness of hotel RMP. This measurement tool could be useful for detecting and correcting some negative aspects of RMP, such as lack of fairness and transparency. RMP based on the principle of fairness, transparency and ethics could help hospitality professionals manage their revenue-per-available-room amid the COVID-19 pandemic and in the long term once this health crisis is over. The first part of the paper provides a summary of the literature review and discusses the limits of the existing measurement models. The second part presents the research methodology and its results. Finally, the last part concludes and discusses the research results.

Overview of the existing literature on price perception

From fuel to medical bills and hotel room bookings, almost all transactions come with prices attached. However, despite their importance in transaction systems, prices are often beset by problems of fairness (Khandeparkar *et al.*, 2020). For example, the price of a hotel room may vary date-wise and customer-wise. This often infuriates those consumers who lose out on better pricing. This example demonstrates the manner in which prices, particularly ones generated by RM techniques may engender feelings of unfairness resulting in negative consequences for businesses (Abrate *et al.*, 2019).

Theoretical foundations of price fairness and unfairness

The existing literature on price perception contains a variety of conceptual attempts to explain the phenomena of perceived fairness and unfairness regarding pricing policies. According to Deutsch (1975), fairness is assessed using three main criteria: equity, equality and needs. Equity implies a result in which the benefits are proportionate to the costs. Equality requires impartial treatment of all stakeholders. Needs imply that all individuals should receive the same advantages, irrespective of their resources. Deutsch (1975) specifies

equity as the most important consideration in the economic context. The principle of *dual entitlement* is also frequently used in price perception models. First proposed by Kahneman *et al.* (1986), the principle of *dual entitlement* focuses on the *community standards* used by individuals to assess the fairness or unfairness of prices. According to this principle, it is acceptable for a company to increase its prices if its costs increase, and it can also keep its prices unchanged when its costs reduce. However, it is said to be unfair to take advantage of market imbalances (e.g. demand which outstrips supply) or anomalies (such as monopoly) to increase prices. Kahneman *et al.* (1986) added that customers negatively respond to price variations that are not justified by an increase in costs. Other authors (Khandeparkar *et al.*, 2020; Lu *et al.*, 2020) have demonstrated through the principle of dual entitlement that violating the principle of fairness, and particularly failing to provide sufficient justification for prices, can engender feelings of unfairness. Kimes (1994), applying the principle of dual entitlement to RMP, suggested that this practice is unfair. One good example is the prices offered by airlines that are dependent on variations in demand and competition rather than on costs. In addition to the theory of *dual entitlement*, Xia *et al.* (2004) conducted a meta-analytic review proposing a conceptual framework of price fairness perceptions. They posit that the perceived fairness of a price contains two dimensions: cognitive and affective. The cognitive dimension implies that ideas of fairness are based on comparison with a pertinent standard value, reference, or benchmark. Meanwhile, the affective dimension is reflected in the positive or negative emotions associated with cognition. These emotions may precede cognition (price judgment) or arise simultaneously. Xia *et al.* (2004) invited fellow researchers to further examine the concept of unfairness, particularly its multi-dimensional nature. Following this recommendation, prior research (Jiang and Erdem, 2018; Katyal *et al.*, 2019) investigated the concept of perceived unfairness of the prices in the RM context. However, those research revealed some shortcomings.

Insufficiencies in the conceptualization and measurement of perceived unfairness of RMP
Despite the important contributions of prior research, the existing literature on price unfairness perception reveals two major shortcomings that need to be highlighted. On the one hand, the existing models are not sufficiently clear on the definition and conceptualization of the concept of perceived unfairness of the hotel RMP. On the other hand, there are currently few valid measurement scales suitable for gauging perceived unfairness in the hospitality pricing context. These limitations are explored in greater detail below.

The perceived unfairness of prices: a concept that remains ambiguous
The concept of perceived unfairness is not clearly defined in the existing studies on price perception. Some authors consider perceived unfairness to be the negative mirror image of perceived fairness, while others suggest that fairness and unfairness are discrete phenomena. Meanwhile, most authors have focused primarily on the cognitive aspects of perceived unfairness (such as price comparison, cost-benefit evaluation, procedures, and information), under-estimating the importance of the affective aspects of the phenomenon (Méatchi and Camus, 2018; Chung and Petrick, 2015). In the specific domain of transactional exchanges, Xia *et al.* (2004) observed that affective considerations are a key adjunct to cognition in the price evaluation process. They suggest that customers may feel uneasy or guilty if discriminatory pricing policies work in their favor. By the same measure, they may also feel angered or undignified if the price differentiation works against them. These emotions may occur prior to or simultaneously with cognitive judgment. Finally, perceived unfairness can provoke very negative consequences on customer's behavior such as

terminating the business relationship, spreading negative information, or engaging in legal actions (Gerlick and Liozu, 2020; Hua *et al.*, 2019). Despite some references on affective consequences, earlier definitions of perceived unfairness have largely been dominated by cognitive and uni-dimensional approaches. According to Xia *et al.* (2004), by focusing exclusively on cognitive variables, these studies have covered only some of the components that combine to generate perceived unfairness in relation to prices. In addition, adoption of a uni-dimensional vision of perceived unfairness only allows the assessment of the impact of this phenomenon in a given context (e.g. "severe unfairness" versus "minor unfairness") and underestimates the multiplicity of the concept. It is therefore preferable to conceptually define perceived unfairness as a multi-dimensional construct. Adopting a multi-dimensional approach enables us to comprehend perceived unfairness both in its entirety and diversity with reference to different consumer profiles (Denizci Guillet and Shi, 2019) and the different contexts of transactional exchanges.

Lack of a valid scale for measuring the perceived unfairness of RMP
As seen, the concept of perceived unfairness currently does not have a clearly defined status in the existing models on price perception in the tourism and hospitality context. Additionally, there are few scales that facilitate the measurement of perceived unfairness of RMP in general, and for RMP in the hospitality context in particular. Existing measurement models (Colquitt and Rodell, 2015; Chung and Petrick, 2015; Devlin *et al.*, 2014) tend to be contextual, and are not easily adaptable to the task of measuring perceived unfairness of hotel RMP. For example, the scale proposed by Colquitt and Rodell (2015) is designed to measure respect for and violation of the principles of fairness in the context of organizational behavior. Adapting this proposed scale to the context of RMP raised problems in terms of the definition of attributes and issues of face and content validity (Rossiter, 2011). Likewise, the scale proposed by Chung and Petrick (2015) was not adaptable because it was constructed in a dichotomous fashion, identifying fair pricing practices by contrasting them with practices judged to be unfair.

Research methodology and results
The limitations presented above led to explaining the importance of developing an alternative measurement scale capable of encompassing the concept of perceived unfairness of RMP in the context of contemporary hospitality. To develop such a measurement scale, we utilized the paradigm developed by Churchill (1979) and the recommendations made by Rossiter (2011). We were also inspired by the objectives of scale development suggested by Pizam *et al.* (2016).

A qualitative study using the critical incident technique and a lexicometrical analysis
The qualitative study allowed us to define the construct domain of perceived unfairness and identify items for the scale development. To define the sample of the qualitative study, we used a *purposive sampling* method (Gebbels *et al.*, 2020. Sarstedt *et al.*, 2018). This sampling procedure is based on researchers taking an informed guess about which individuals should be included (Sarstedt *et al.*, 2018). We chose this sampling method because we wanted to give importance to two criteria: the age of the respondent and his/her familiarity with RMP (Wirtz and Kimes, 2007). Regarding age, we chose to interview people above the age of 21 years. We felt that respondents under the age of 21 years did not have enough consumer experience to provide an informed opinion on RMP. For familiarity with RMP, we selected respondents who had at least one experience with prices based on RM within the hospitality industry. We recruited respondents in the city of Angers, France, with the help of the

Angers Tourism Office that allowed us to contact local visitors visiting the *Terra Botanica* theme park. We spontaneously and randomly contacted the potential respondents who were visiting the theme park and asked them to participate in an academic study on RMP perception. To control the sampling criteria, we asked each potential respondent to tell us his/her age and if he/she had booked and paid for a hotel room within the last two years. Additionally, we ensured that the potential respondents lived in Angers or in the surrounding area to make it easier to conduct in-depth interviews. We used a sample that did not mix local and non-local tourists to avoid the effects of the tourist's place of residence. We planned appointments for interviews with respondents whose profile fulfilled our sampling criteria. The interviews took place either in the respondents' homes or in a neutral place like a public park. Based on the eliminatory criteria (age, familiarity with RMP, and the residence of the participant), we surveyed a sample of 32 individuals, comprising 17 men and 15 women (Appendix 1). On an average, participants had booked a hotel room three times over the last two years.

Qualitative data collection with the critical incident technique
We used the critical incident technique (Serrat, 2017) to collect the qualitative data. The critical incident technique is designed to gather data on human behavior, develop psychological principles and resolve practical problems (Flanagan, 1954). We used this technique to conduct in-depth interviews. During the interviews, respondents were asked to describe one or more "memorable transactional events" in which they had perceived unfairness regarding hotels prices. To avoid influencing the participants we let them express themselves as freely as possible and did not use an interview guide. Each interview stopped when the respondent finished describing the pricing situation she/he considered to be unfair. We asked complementary questions when the respondents' accounts were noticeably unclear to us. On an average, each interview lasted one and a half hour. We collected 70 events and anecdotal evidence (critical incidents) reflecting the unfairness perception of RMP. Here, a critical incident means any negative transactional event that is sufficiently complete to allow inferences and predictions of perceived unfairness of RMP in the hospitality context.

Qualitative data analysis with lexicometry
The accounts collected via critical incident technique were transcribed in full, and the resulting corpus of texts was subjected to a lexicometrical analysis (Lebart *et al.*, 1997; Wiedemann, 2019). Lexicometrical analysis refers to a set of techniques used to perform statistical analysis on textual data, including analysis of specificities, similarities, descending hierarchical classification, and factorial analysis of correspondences. For our research, we opted for the descending hierarchical classification that allows us to identify lexical forms that reflect the different dimensions of the concept of perceived unfairness of RMP. Subsequently, with the help of statistical tests (such as Eigenvalue and Khi2 test) we can easily explore the factors that underpin the concept in question. For conducting the qualitative data analysis, we chose the R software (Desagulier, 2017) and its user interface named *Iramuteq* (Chaves *et al.*, 2017).

Results of the lexicometrical analysis
As stated above, for conducting the qualitative data analysis, we chose the descending hierarchical classification. This lexicometrical method (Scholz, 2019) allowed identification of four categories of discourses (Table 1) which reflected the different dimensions of perceived unfairness of RMP. The statistics showed that 28.8% of the corpus analyzed falls

into Category 1. This first category comprises words such as "feeling," "respect" and "anger," which are affective variables. Categories 2 (26.1%) and 3 (24.7%) contains lexical forms with cognitive connotations. These include terms such as "cost," "expensive" and "time." Finally, Category 4 (22.4%) contains words of a relational nature (such as post, mail, telephone, and terminate). Semantic analysis of the words in each category showed that they are indeed four distinct classes. For example, the word "anger" from Category 1 is affective, while the word "budget" is more cognitive. This demonstrates that Categories 1 and 2 constitute two discrete dimensions. With regards to the cognitive variables, our respondents evoked the concepts of equity of the pricing (Katyal *et al.*, 2019; Weisstein *et al.*, 2013), transparency of the information and communication (Choi and Mattila, 2005; Tanford *et al.*, 2011), and social norms (Garbarino and Maxwell, 2010). As for the affective dimensions, our lexicometry analysis revealed the emergence of new indicators of perceived unfairness in relation to RMP. These correspond to the feelings of lack of respect, oppression, relative deprivation, and manipulation. Our enquiries also enabled us to identify additional emotions reflecting the perceived unfairness surrounding RMP. They included emotions such as stress, anxiety, fear and regret.

Summarily, our qualitative study revealed multiple categories of discourses reflecting the perception of hotel RMP. This result allowed us to postulate that perceived unfairness of RMP is a multi-dimensional concept composed of cognitive and affective dimensions. A quantitative study was therefore necessary to confirm this hypothesis.

Quantitative studies and validation of our measurement scale
Applying Churchill's paradigm (1979) and the recommendations made by Rossiter (2011), we defined the domain of construct, proceeded to define the items, and finally examined the principal components, as well as the reliability and validity of the scale. For the quantitative data analysis, we used *Xlstat* software (Addinsoft, 2019) and *SmartPLS*'one.

Defining the construct domain of perceived unfairness in relation to RMP
Comparing the results of our qualitative study with the existing literature enabled us to identify the key elements of a definition of the concept of perceived unfairness in relation to RMP. We thus propose to define the concept as follows: "perceived unfairness is a cognitive and affective phenomenon that arises following a negative experience involving pricing." This negative experience either temporarily or permanently influences the psychological state of the consumer. It is expressed in cognitive manifestations such as perceived normative deviation (Kitsuse, 1961), perceived lack of equity (Tang *et al.*, 2019), and perceived opacity (Noone, 2016). It may also be manifested in negative feelings and negative emotions such as stress, frustration, disgust, anger, and regret. Summarily, in the context of RMP, perceived unfairness is a cognitive and affective phenomenon arising after an unfavorable experience of price comparison. This definition of perceived unfairness as a

	Category 1 (28.8%)	Khi2	Category 2 (26.1%)	Khi2	Category 3 (24.7%)	Khi2	Category 4 (22.4%)	Khi2
	Feeling	87.68	Time	40.02	Pay	128.66	Post mail	70.19
	Anger	32.39	expensive	30.41	Cost	72.47	Receive	69.89
	Respect	27.73	Reduce	24.49	Product	49.74	Email	68.52
	Emotion	22	Budget	20.03	Quality	46.08	Telephone	45.68

Table 1.
Khi2 Scores for each category of words

multi-dimensional concept is expressed via multiple indicators. We then selected and tested the most pertinent reflexive indicators for measuring this concept.

Determining the items for the scale of perceived unfairness of RMP
Drawing upon the existing research and our own qualitative studies, we generated two scenarios and a pool of indicators reflecting the different dimensions of perceived unfairness regarding RMP. These two survey materials (scenarios and the pool of items) were submitted for review to a panel of experts comprising lecturers and researchers in the fields of marketing (five experts), behavioral economics (one expert), and sociology (one expert). We also consulted a practicing psychologist and two professionals with expertise in RM. Further, we asked five consumers to rate our indicators, taking Rossiter's (2011) recommendations into account. These experts helped us pare back our scale, recommending that certain items be removed and others reformulated. This process left us with 21 items (Appendix 2).

Gathering quantitative data for the principal component analysis
A questionnaire containing two scenarios and 21 items was administered between September to October 2017 to a sample of around 500 consumers. Data was collected online via Google Forms. Of the 500 people surveyed, 386 responded. Of those 386 responses, we discarded 18 incompletely or poorly filled questionnaires. We further discarded the responses of individuals under the age of 21 (25 questionnaires). This left us with a total of 343 questionnaires, which we then subjected to a principal component analysis (PCA). The profiles of our respondents are summarized in Appendix 3. PCA allows us to pare down our measurement indicators and zoom in on the main components of the phenomenon being studied. We used reflexive indicators (Jarvis *et al.*, 2003) to develop the scale because we were interested in manifestations of perceived unfairness rather than antecedents or causes. Before conducting PCA, we checked our data's suitability for factorization. We therefore calculated the Kaiser–Meyer–Olkin index (KMO: 0.84) and Bartlett statistics (Khi2: 1693.57, ddl: 36, $p < 0.01$). We then looked at the quality of communality (loading) for each item of the questionnaire. After multiple tests and deletion of items with a communality less than 0.7, our PCA revealed nine items (Table 2). To examine the internal consistency of the nine items (scale reliability), a Cronbach's alpha was calculated. This coefficient (α: 0.86) showed acceptable levels of reliability of the scale. The nine items of the scale are distributed across three principal components, each with an *eigenvalue* greater than 1 (Kaiser Criterion). The three principal components jointly accounted for 78.52% of the explained variance (Table 3). The factorial structure (Figure 1) shows that the concept has three dimensions. The first

Indicators	Communality	Mean	Standard deviation
Q15. I feel tricked	0,80	5,81	1,65
Q19. I feel insulted	0,78	5,18	1,91
Q16. I feel manipulated	0,70	5,12	2,00
Q03. Perceived unacceptable pricing	0,84	4,11	1,94
Q05. Perceived immoral pricing	0,84	3,99	1,95
Q06. Perceived shocking pricing	0,83	3,94	2,00
Q08. Incomprehensible pricing	0,70	4,22	2,03
Q07. Unclear pricing	0,78	4,84	1,90
Q09. Illogical pricing	0,75	4,08	2,05

Table 2.
Perceived unfairness indicators and communality

(Factor 1) is represented by items Q03, Q05, and Q06. The nature of these three items allows us to define this first dimension as *perceived normative deviation* (Laczniak and Murphy, 2019). The items that make up this dimension reflect the judgments that consumers make on prices based on certain norms of fairness. Whenever a pricing policy transgresses one of these norms, consumers will feel a sense of injustice. The second dimension corresponds to *perceived opacity* (Noone, 2016). This dimension is represented by items Q07, Q08 and Q09. Finally, the third dimension is represented by items Q15, Q16 and Q19. This can be defined as the *affective dimension* (Cohen *et al.*, 2008). This third dimension encompasses emotions and feelings. The statistics derived from the CPA are summarized in Table 4.

Confirmation analysis of the scale: reliability and validity of the scale
Exploratory factor analysis allowed us to identify three dimensions of perceived unfairness in relation to RMP: *perceived normative deviation*, *perceived opacity* and *negative effects*. To confirm this factorial structure, we conducted a second round of data gathering, collecting information from a sample of 325 respondents (Appendix 4). The questionnaire was administered between March and April 2018. The respondents were interviewed at two tourist attractions (the *Château d'Angers* and the *Terra Botanica* theme park in Western France). For the confirmatory analysis (reliability and validity) of the scale, we opted for the partial least squares path modelling (PLS-PM). The choice of PLS-PM also known as the PLS-SEM method (Ali *et al.*, 2018; Henseler *et al.*, 2018; Sarstedt *et al.*, 2020) was justified by the reflexive nature of our constructs and the fact that our measurement model was still in development.

Table 3.
Characteristic values and total explained variation of the principal component

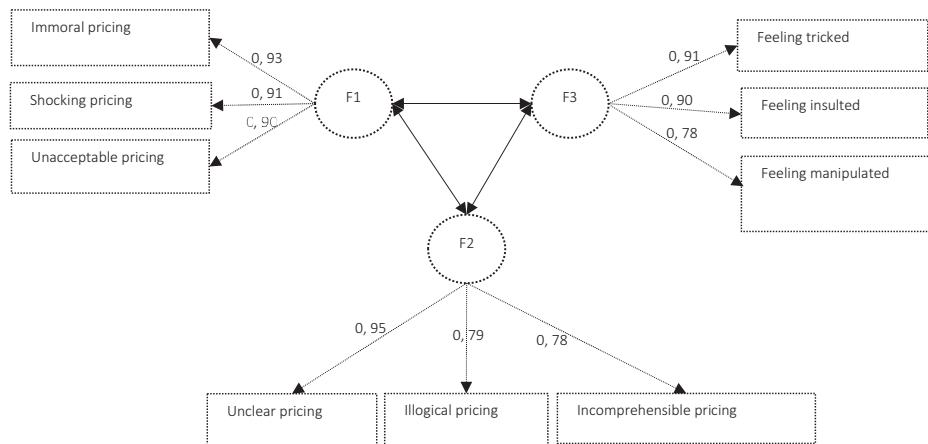| Components	Initial characteristic values			Sums derived from loading square		
	Eigenvalue	% variance	cumulative	Eigenvalue	% variance	cumulative
1	4.37	48.64	48.64	4.37	48.64	48.64
2	1.65	18.40	67.05	1.65	18.40	67.05
3	1.03	11.47	78.52	1.03	11.47	78.52

Figure 1.
Factorial structure with reflexive indicators after Promax rotation

Testing the reliability of the scale
Testing the reliability of a construct involves evaluating the consistency of all the indicators (items) it contains. This internal consistency, otherwise known as homogeneity, is generally assessed using Cronbach's alpha coefficient (α) and a Rho score (P). The Rho (P) in question may be Jöreskoq's or Dillon-Goldstein's (D-G), depending on the methodology adopted (covariance-based techniques or PLS-PM). To measure the reliability of the scale for perceived unfairness of RMP, we opted for the PLS-PM approach. As seen in Table 4, the alpha and Rho score for the different dimensions of perceived unfairness are all above 0.7. This level of alpha is generally considered to be the minimum validity threshold for the internal consistency of indicators (items) in a measurement scale. The reliability of our measurement scale is therefore confirmed.

Measuring the validity of the scale
Testing the validity of a measurement instrument allows us to confirm that we are indeed measuring the right construct. To assess the validity of the scale developed, we looked at both the convergent and the discriminant validity of the constructs.

Convergent validity. Measuring convergent validity allows to check that all the indicators that are supposed to measure the same construct are well correlated. In other words, CV consists of checking that all the indicators for a given construct are sufficiently connected and do indeed measure the same dimension. For testing CV, we used the average variance extracted (AVE) approach. This method consists of comparing the AVE (Fornell and Larcker, 1981) with the "squared correlations" between the constructs of the measurement model. In this model, we can consider CV to be established when the AVE value is greater than or equal to 0.5. An AVE value of ≥ 0.50 demonstrates that the indicators of the construct explain more than half of the extracted variance. The results obtained using the AVE method are presented in Table 5. The statistics in this table show that each construct has an AVE value above the threshold value of 0.5. Since this minimum value is met and exceeded, we can confirm the CV of the three dimensions of our scale.

Discriminant validity. Discriminant validity is conducted to ensure that the constructs used are empirically different from one another. In other words, DV measures the distinctiveness of a construct (Hair *et al.*, 2020). The DV is established when the indicators for a given construct are sufficiently different from the indicators of other constructs in the same model. In management research, two methods were traditionally used to assess the discriminatory validity of the constructs: the criteria of Fornell and Larcker (1981) and the

Latent variables (Dimensions)	Number of indicators	Cronbach's alpha (α)	Rho (p)
Perceived Normative Deviation	3	0.917	0.948
Perceived Opacity	3	0.768	0.866
Negative Affect	3	0.749	0.857

Table 4.
Composite reliability
for perceived
unfairness of RMP

Dimensions	Averages (AVE)
Perceived Normative Deviation	0.858
Perceived Opacity	0.682
Negative Affect	0.662

Table 5.
Convergent validity
of scale (AVE
method)

cross-loading approach. However, some research (Franke and Sarstedt, 2019; Henseler *et al.*, 2015; Voorhees, 2016) showed that neither approach can reliably detect DV issues. To resolve the issues of the traditional methods for DV assessment, Henseler *et al.* (2015) proposed the heterotrait-monotrait (HTMT) method. According to Voorhees *et al.* (2016), the HTMT technique provides consistently better assessments of DV than the traditional method in management research. Ali *et al.* (2018) suggested the application of HTMT criterion as the best method compared with traditional methods, to assess the DV of constructs in the hospitality management studies. Additionally, Hair *et al.* (2020) suggested that, when using partial least squares structural equation modeling (PLS-SEM), the HTMT ratio should be used to assess DV. Considering these conclusions and suggestions, we chose to assess the DV of our constructs using the HTMT criterion. The HTMT ratio is computed as the mean of all the correlations of the indicators measuring different constructs, relative to the geometric mean of the average correlations of the indicators measuring the same construct (Ali *et al.*, 2018). According to Hair *et al.* (2020), researchers can apply cutoff scores such as 0.85 and 0.90 to interpret their HTMT results. Table 6 presents the HTMT matrix of our scale, which shows that all HTMT ratios are lower than 0.85. The DV of the proposed scale is therefore established.

Discussion and conclusions

A review of the existing literature, followed by qualitative and quantitative studies, allowed us to clarify the concept of perceived unfairness. Subsequently, PCA as well as the reliability and validity tests yielded satisfactory results for a measurement model with three dimensions: *perceived normative deviation*, *perceived opacity* and *negative effects*. The *perceived normative deviation* reflects the judgments that consumers make on prices based on certain norms (such as equity, proportionality, reasonability and moral). Whenever a pricing policy transgresses one of these norms, consumers will perceive unfairness. The second dimension (*perceived opacity*) represented by items such as unclear, incomprehensible and illogical evokes the lack of transparency of the information and procedure of hotels' RMP. Finally, the third dimension, the *affective dimension*, is reflected by the indicators such as feeling tricked, manipulated and frustrated. These results confirm that the empirical data of the research, supports the multi-dimensionality of price unfairness perception in the context of contemporary hotel RMP. Our conceptualization of perceived unfairness is an alternative method to previous approaches where fairness and unfairness were usually measured as a continuum of the same constructs. Without questioning or refusing the results of prior studies, our research offers an alternative and integrative way to conceptualize and measure the concept of perceived unfairness of the RMP in the context of hospitality. This integrative model makes it possible to measure the concept of perceived unfairness through its own indicators and not as a mere opposite of perceived fairness. Finally, this study suggests that perceived unfairness of RMP includes cognitive dimensions (perceived normative deviation, perceived opacity) and negative effects such as feeling tricked or manipulated. Therefore, the

	Perceived Normative Deviation	*Perceived Opacity*	*Negative Affect*
Perceived Normative Deviation		0.80	0.53
Perceived Opacity			0.51
Negative Affect			

Table 6.
Discriminant validity (HTMT method)

main finding of this research concerns the clarification and measurement of the concept of perceived unfairness of RMP in the context of contemporary hospitality. The empirical studies helped identify three dimensions of perceived unfairness of RMP: *perceived normative deviation*, *perceived opacity* and *negative effects*. The scale proposed is a new measurement tool that could be useful for detecting and correcting some negative aspects of RMP. This research, therefore, has multiple theoretical and managerial implications. It also has certain limitations.

Theoretical implications

On a theoretical level, this study provides new information on RMP perception and how it impacts hospitality industry. Two theoretical implications are identified and discussed. First, the scale developed here contributes to the hospitality RM literature by providing knowledge on the concept of perceived unfairness compared to prior research that focused on perceived fairness of prices. More specifically, our research helps clarify and measure the multi-dimensional nature of perceived unfairness in the context of hotel RMP. This allows us to accept that perceived unfairness is a distinct theoretical concept in its own right, existing independently of perceived fairness. Second, from an academic perspective, researchers in the hospitality field need to have a valid psychometric scale to measure the concept of unfairness in the RMP context. This research provides such a measurement instrument. There has been little previous research on the conceptualization and multi-dimensional measurement of perceived unfairness in the context of hotel RMP (Chung and Petrick, 2015). Our clarification of perceived unfairness's theoretical status and proposal for a measurement scale could be conducive to a more widespread use of this concept in future research in the field of hospitality management. In other words, perceived unfairness can henceforth be considered a legitimate psychometric concept in academic research on prices perception.

Managerial implications

To manage pricing strategies effectively, contemporary hotel managers should understand how to measure the perception of RMP. Additionally, the consequences of the COVID-19 pandemic on hospitality sector will likely manifest gradually (Denizci Guillet and Chu, 2021) and in long term. Therefore, perceived unfairness of RMP should be more examined during and after the COVOD-19 crisis. Hence, on a managerial level, our research will help hospitality companies effectively identify the cognitive and affective indicators that denote perceived unfairness in the context of RMP. They will then be better equipped to handle the risk of customer dissatisfaction. Prior research shows that perceived price unfairness leads to negative consequences for firms, including lower purchase intentions, complaints, and negative word of mouth (Riquelme *et al.*, 2019). Detecting negative responses to RMP practices requires the deployment of a specific measurement scale. Our study provides for such a measurement scale, focused on the specific context of RMP perception studies. This measurement tool could be useful for hotel managers in detecting and correcting the negative aspect of RMP perceived by consumers. Implementing some items of our scale in satisfaction questionnaires or in market study instruments could be extremely useful in helping a hotel manager identify if their RM policies are positively or negatively perceived by the consumers. Hotel managers, however, would not be required to use all the items suggested. Some items of the scale may be adapted or deleted depending on the objectives and the context of the study. Otherwise, as some prior research has suggested, implementing a customer-centric pricing strategy would enable management to assess customers' price perception and willingness to pay (El Haddad *et al.*, 2015). For instance, hotel managers

should investigate their customers' price perceptions to make appropriate pricing decisions that lead to positive perceptions of RMP. The scale developed here could help make such investigations. It could be included in satisfaction surveys (ex post measurements), helping hotel managers detect potential feelings of unfairness and dissatisfaction in relation to their pricing policies. It might also be used within the framework of market analysis conducted prior to the roll-out of annual or multi-annual budgets or strategic plans. Diagnosing perceived unfairness using a multi-dimensional scale is useful in finding solutions that minimize counter-productive behaviors that risk compromising the performance of RMP strategies. For example, a company could launch a transparent information campaign regarding its pricing policy if a survey using this scale reveals opacity perception. This would help reduce negative cognitive and affective responses. Moreover, using a robust psychometrical scale to investigate the perception of prices will help hotel managers reinforce their pricing transparency and fairness. This research precisely provides a measurement instrument to meet this managerial need. Finally, RMP based on the principle and norms of fairness, transparency and ethics could help hoteliers manage more effectively their pricing during the COVID-19 pandemic and in long term after this health crisis.

Limitations and future research

Our research has certain limitations, which need to be discussed before we can propose avenues for further work. First, we acknowledge that the samples we used are not perfectly representative. Certain socio-professional categories, specifically retirees and farmers, are under-represented in our samples. Our qualitative investigation protocol is also likely to contain traces of bias. Some of the critical incidents referenced occurred a long time ago. In some cases, that means many months or even many years. Respondents are therefore likely to have forgotten valuable details about these past experiences. As such, the emotions and feelings evoked during the interviews most likely do not reflect the original affective tensions experienced when the incidents actually occurred.

Second, some items in our scale will not easily be operationalized by hotel managers in some situations. For example, it could be a risk for a hotel to ask its customers to assess the morality of its RMP strategy. Additionally, the items of scale developed were originally formulated in the French language. Therefore, the original sense and meaning of some items could be slightly different from the translated versions of the same item. For example, the French word "la justice" can be translated in English as "unfairness" or "equity." Therefore, generalizations of this research to a broader context need to be treated with caution.

Third, our decision to focus on cognitive and affective manifestations meant that we neglected other dimensions (for example, the conative dimension), which are likely to be rich sources of information. Further, moderator factors such as education, income and culture, not measured in this study, may influence customers' RMP perceptions.

Despite these limitations, our study paved the way for potentially interesting further research on perceived unfairness regarding prices in general, and hotel RMP in particular. First, we suggest that the scale used to measure perceived unfairness of hotels RMP should be tested again in different contexts and countries to reinforce its external validity. The extension of this instrument to other fields of pricing and sectors of activity (e.g. travel, restaurants and theme parks) would be a good way of confirming its internal and external validity.

Second, future research should expand the measurement model proposed to include other dimensions of relevance including the ethical concerns and legal challenges in RMP (Gerlick and Liozu, 2020). In their recent research, Van der Rest et al. (2020) have indicated the lack of consideration for ethical concerns in RM despite increasing public concerns regarding the

use of algorithmic pricing and consumer data in pricing. Thus, it is extremely legitimate and relevant to question the ethical concerns and legal aspects of RM and pricing in future research.

Third, this research does not measure the consequences of the perceived unfairness of hotel RMP. We recommend that future research explore this issue. This would call for a more comprehensive understanding of perceived unfairness in its cognitive, affective, and conative dimensions.

Fourth, we feel that further research is also required on strategies for reducing unfairness to address the various problems engendered by consumers' negative impressions of RMP. With this goal in mind, we recommend that further studies explore the pricing levers acting on procedural, informational, and interactional justice and their effects on consumers' willingness to pay hotel rooms' prices based on RM, particularly during low demand periods (Denizci Guillet and Chu, 2021).

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Appendix 1

	Frequency	%
Gender		
Women	17	53
Men	15	47
Other	0	0
Total	32	100
Age group		
21 – 25	2	6
26 – 35	10	31
36 – 45	9	25
46 – 55	4	13
56 – 65	5	16
66 +	2	6
Total	32	100
Professions		
Farmers	2	1
Craftsmen, shopkeepers, business owners	3	9
Executives and qualified professionals	8	25
Employees	7	22
Workers	1	3
Intermediate professions	5	16
Retired	3	9
Students and grad students	3	9
No profession/Unemployed/Other	2	6
Total	32	100

Table A1.
Sample used for
qualitative study
($N = 32$)

Appendix 2. Questionnaire used for perceived unfairness of RMP scale development

SCENARIO 1

"Imagine that you are planning a weekend away with a friend in Paris for the next mouth. You looked for hotels on internet and you find a very interesting price on the website of the hotel named Novotel Paris-Center (NPC). The next day, you find that the prices on the same website have changed. You have repeated your searches several times and you have noticed that the prices change with each of your connection. There is no information on website about the pricing policies adopted by the hotel. In order to get the best possible deal, you inform yourself about room rates at multiple websites of online travel agencies (*Booking.com, Expedia, Kayak, etc.*). Finally you decided to book directly with the hotel NPC. For a two-night stay (Friday-Sunday), you are charged 115 € per room per night. The following day you are meeting friends and tell them about your planned trip. One of them tells you that he/she is also going to Paris on the same weekend and has booked the same room category in the same hotel as you have. Your friend tells you he/she has booked the room through *Booking.com* website at the same time as you have, at a rate of 75 € per room per night".

Based on the scenarios above, will you say that:

N°	Affirmations	1. strongly disagree.			4. Neutral			strongly 7. agree
01	The pricing of the hotel I booked is unfair	☐	☐	☐	☐	☐	☐	☐
02	The pricing of the hotel I booked is inequitable	☐	☐	☐	☐	☐	☐	☐
03	The pricing of the hotel I booked is **unacceptable**	☐	☐	☐	☐	☐	☐	☐
04	The pricing of the hotel I booked is unreasonable	☐	☐	☐	☐	☐	☐	☐
05	The pricing of the hotel I booked is **immoral**	☐	☐	☐	☐	☐	☐	☐
06	The pricing of the hotel I booked is a **shocking**	☐	☐	☐	☐	☐	☐	☐
07	The pricing of the hotel I booked is **unclear**	☐	☐	☐	☐	☐	☐	☐
08	The pricing of the hotel I booked is **incomprehensible**	☐	☐	☐	☐	☐	☐	☐
09	The pricing of the hotel I booked is **illogical**	☐	☐	☐	☐	☐	☐	☐
10	I was treated fairly by the hotel	☐	☐	☐	☐	☐	☐	☐
11	I did not get treated right by the hotel	☐	☐	☐	☐	☐	☐	☐
12	The deal I agreed on with the hotel was fair	☐	☐	☐	☐	☐	☐	☐
13	I think the hotel I booked got more out of the deal than I.	☐	☐	☐	☐	☐	☐	☐

Scenario 2

"Imagine that a few days later, after you have booked your room at Novotel Paris-Center, you receive an advertisement from this hotel announcing a price drop of 30 to 40%. You missed that promotion which had occurred before and after your purchasing. The reason you missed the promotion was that the hotel did not inform you about it when they made the purchase".

Based on the scenarios below, will you say that:

N°	Affirmations	1. strongly disagree			Neutral			7. strongly agree
14	I feel angry	☐	☐	☐	☐	☐	☐	☐
15	I feel **tricked**	☐	☐	☐	☐	☐	☐	☐
16	I feel **manipulated**	☐	☐	☐	☐	☐	☐	☐
17	I feel **mad**	☐	☐	☐	☐	☐	☐	☐
18	I feel disappointed	☐	☐	☐	☐	☐	☐	☐
19	I feel **insulted**	☐	☐	☐	☐	☐	☐	☐
20	I feel unfulfilled	☐	☐	☐	☐	☐	☐	☐
21	I am regretful	☐	☐	☐	☐	☐	☐	☐

Appendix 3

	Frequency	(%)
Gender		
Women	213	62.1
Men	127	37
Other	3	0.9
Total	343	100
Age group		
21 – 25	145	42.3
26 – 35	51	14.9
36 – 45	70	20.4
46 – 55	46	13.4
56 – 65	16	4.7
66 +	15	4.4
Total	343	100
Professions		
Farmers	2	0.58
Craftsmen, shopkeepers, business owners	18	5.25
Executives and qualified professionals	79	23.03
Employees	59	17.2
Workers	7	2.04
Intermediate professions	13	3.79
Retired	12	3.5
Students and grad students	83	24.2
No profession/Unemployed/Other	70	20.41
Total	343	100

Table A2.
Sample used in the first round of quantitative data gathering (N = 343)

Appendix 4

	Frequency	(%)
Gender		
Other	4	1.2
Women	188	57.8
Men	133	40.9
Total	325	100
Age group		
21–25	51	15.7
26–35	78	24
36–45	77	23.7
46–55	48	14.8
56–65	52	16
66	19	5.8
Total	325	100
Professions		
Farmers	2	0.6
Craftsmen-shopkeepers-business owners	8	2.5
Executives-professionals	133	40.9
Employees	77	23.7
Workers	5	1.5
Intermediate professions	26	8
Retired	18	5.5
No profession/Unemployed/Other	56	
Total	325	100

Table A3.
Sample of second quantitative study ($N = 325$)

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