

Partitioned pricing: review of the literature and directions for further research

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Abstract Partitioned pricing (PP) has received increased attention in both managerial practice and academic literature. The fragmented nature of existing research, terminological and conceptual inconsistencies, and ambiguous findings regarding performance implications of PP underscore the need for an organization of the PP literature. This article provides four major contributions to the literature. First, it develops a new definition of PP based on a critical evaluation of the current body of literature and an analysis of key characteristics of the concept. Second, this article discusses the primary theoretical perspectives used to explain PP, which provides insights into the theoretical foundation of the concept and impetus for future studies on PP. Third, this article presents a review of the state-of-the-art in research on PP and provides managers with guidelines about when and how to apply this pricing tactic. Finally, this article identifies overarching limitations of prior PP research and outlines avenues for further research.

Keywords Partitioned pricing · Price partitioning · Surcharge · Behavioral pricing · Systematic review

JEL Classification L110 · M00 · M300 · M310

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1 Introduction

Partitioned pricing (PP) has emerged as a pricing tactic that is prevalent in a wide range of industries. Many online retailers list separate prices for shipping, handling, or payment processing rather than including these fees in the price of the goods on order (Xia and Monroe 2004). In addition, several airlines impose separate fees for baggage or fuel, even though customers are required to pay for all components (Tuzovic et al. 2014). In 2012, airlines worldwide charged approximately \$36 billion in surcharges on top of base flight costs, which represents an increase of 11 % compared to 2011 (Tuttle 2012). The fundamental premise of PP is that consumers do not attend to and process information on separate price components in the same way as for equivalent combined prices (Morwitz et al. 1998). Preliminary, we define PP as a pricing tactic that rests on a seller's volitional decision to divide the total price of an offering into two or more mandatory price components to generate favorable buyer response. In situations, in which a seller partitions the total price of an offering, decisions about (1) the nature of components (i.e., surcharges for services or for physical components of the offering) and the number of components (i.e., two or more), (2) the labeling of the components, (3) the allocation of the total price across these components, and (4) the presentation format of the offering need to be made.

By means of PP, firms aim to enhance consumers' perception and evaluation of prices and offerings and stimulate purchasing behavior compared with combined. Morwitz et al. (1998) were among the first to explore the effects of PP on consumers' reactions. Since then, many studies in the fields of business (e.g., Bertini and Wathieu 2008; Chakravarti et al. 2002; Hamilton and Srivastava 2008; Xia and Monroe 2004), economics (e.g., Brown et al. 2010; Carlin 2009), psychology (e.g., Kim 2006; Sheng et al. 2007), and law (e.g., Chetty et al. 2009; Feldman and Ruffle 2015) have contributed to a deeper understanding of how consumers react to PP. Although previous work has deepened and broadened the understanding of the PP concept, extant knowledge suffers from terminological and conceptual inconsistencies. Literature on PP shows alternative definitions of PP and ambiguity regarding its key characteristics and application areas. In addition, previous work reveals mixed results regarding the consequences of PP for consumer behavior. Some studies suggest that PP relates positively to purchase behavior compared with combined pricing (e.g., Chakravarti et al. 2002; Chetty et al. 2009; Hossain and Morgan 2006; Morwitz et al. 1998; Voelckner et al. 2012; Xia and Monroe 2004). Others studies, however, indicate opposite effects (e.g., Bambauer and Gierl 2008; Chandran and Morwitz 2006; Lee and Han 2002). To explain some of these differences, prior research on PP has focused on moderators such as the characteristics of the surcharge (Bertini and Wathieu 2008; Burman and Biswas 2007; Sheng et al. 2007), buyer attributes (Cheema 2008; Kim and Kramer 2006; Schindler et al. 2005), and seller attributes (Carlson and Weathers 2008; Koukova et al. 2012). In summary, the considerable body of previous work on PP points to a highly fragmented field of research that has emerged from alternative theoretical perspectives, empirical settings, and methodological approaches.

Against this background, a systematic review of PP research would help clarify the nature of the concept and would improve the understanding of how PP affects

consumers' price processing and, in turn, purchase behavior. In addition, a consolidation of the diverse findings on PP would help researchers and professionals obtain an overview of the current state of knowledge. Finally, analysis of the existing literature helps identify limitations of prior work and derive promising future research directives.

The objectives of this article are fourfold: First, this article aims to develop a new definition of PP that integrates the key characteristics of the concept and that helps resolve some of the terminological inconsistencies in the current literature. Second, this article aims to systemize and discuss the four primary theoretical perspectives used to explain PP. Since each of the perspectives suggests different mechanisms underlying PP, an overview of these theoretical lenses provides insights into the patterns of causal effects and strengthens the conceptual basis for future studies on PP. Third, this article aims to summarize and structure previous findings on PP and seeks to derive guidelines about when and how to apply PP. Fourth, this article aims to develop an organizing framework of overarching directions for further research on PP. In doing so, this article contributes to a deeper understanding of *what* PP is, *how* and *why* PP influences consumer behavior, and *which* pathways offer avenues for further research on the topic.

2 The concept of PP

2.1 Definition and key characteristics of PP

Table 1 illustrates exemplary definitions of PP. Although these definitions have common themes, they differ in their particular focus and scope. Three major questions arise when seeking to define PP: (1) Do sellers have volitional choice when dividing a price into components? (2) What constitutes price components? (3) Are all price components purely mandatory for buyers? We will address each of these questions below.

2.1.1 Do sellers have the choice when dividing a price into components?

A critical question for the definition of PP is whether or not a seller has the strategic choice to divide a price. We use the example of sales tax to illustrate this question. Sales tax is charged for most products and services and is frequently considered as a price component in PP research (e.g., Chetty et al. 2009; Xia and Monroe 2004). In many European countries, governmental laws and regulations foster firms to include sales tax in the price presented to consumers and allow firms to separate sales tax from prices only when selling to organizational buyers. In contrast, in the U.S. no legal requirements enforce sellers to include taxes in prices. Still, in the U.S. market, it is uncommon to include sales taxes in the prices of most products and services. When market forces foster sellers to partition a price, this situation is technically PP. However, since PP refers to a pricing tactic that aims at achieving corporate goals, PP in a narrow sense rests on the seller's volitional choice and fundamental decision to apply partitioned or combined pricing.

Table 1 Definitions of PP

Source	Definition	Context(s)	Type(s) of surcharges
Bertini and Wathieu (2008)	“Instead of charging a simple, all-inclusive price, firms regularly post sets of mandatory charges attached to various attributes of an offer.”	Airline ticket Groceries Movie ticket Christmas tree	Entertainment and meal service fee Delivery scheduling fee Booking fee Netting fee
Burman and Biswas (2007)	“Partitioned pricing refers to the price of a single product, in which the surcharge represents an additional amount inherent to the purchase situation ..., and consumers cannot opt out of them.”	Airline ticket Consumer electronics	Tax and processing fee Shipping and handling fee
Chakravarti et al. (2002)	“Firms may choose to present the price of a multicomponent product bundle in partitioned (separate price for each mandatory component) or consolidated (single, equivalent price) fashion.”	Refrigerator	Icemaker Service warranty
Cheema (2008)	“... product prices presented in the form of a large base price and a small surcharge.”	Consumer electronics, clothing Mobile phone service	Shipping fee Tax and cost recovery fee
Hamilton and Srivastava (2008)	“... a pricing strategy in which the total price of a product and/or service is partitioned into two or more mandatory components.”	Refrigerator Vehicle service Laptop Food	Icemaker, sound silencer Installation fee Surge protector Side dishes
Koukova et al. (2012)	“... where the total price is divided into two or more mandatory components such as a base price and a surcharge.”	Flash drive Coffeemaker	Shipping fee
Morwitz et al. (1998)	“... the firm could charge a single, all-inclusive price that combines the components ... but instead divides the price into two parts, a strategy we term partitioned pricing ... we call the larger the base price ... and the smaller component the surcharge.”	Jar of pennies Phones	Buyer’s premium Shipping and handling fee
Xia and Monroe (2004)	“... separating the total cost into a base price and one or more surcharges has been labeled price partitioning.”	Computer	Taxes Shipping fee

2.1.2 What constitutes price components?

Prior research into PP has examined price formats in which the price components comprise fees for components that have a more distal connection to the core offering—examples include shipping and handling fees (Chandran and Morwitz

2006; Kim 2006; Morwitz et al. 1998; Schindler et al. 2005), processing fees (Bambauer and Gierl 2008; Burman and Biswas 2007), installation fees (Hamilton and Srivastava 2008), insurance fees (Voelckner et al. 2012), and fees for warranties (Chakravarti et al. 2002)—as well as fees for components that have a proximate connection to the core offering. For example, PP can include price formats in which the price of an offering is divided based on the physical components of the offering, such as a base price for a refrigerator and a fee for a built-in icemaker (Chakravarti et al. 2002), or a base price for a laptop and a fee for an integrated surge protector (Hamilton and Srivastava 2008). The nature of price components depends on a seller's capability to divide an offering into distinct components that can be separately prized.

Within this context, an abundance of research into PP has examined its effects with focus on two price components, of which the larger price component represents the so-called base price and the smaller price component is the so-called surcharge (Chetty et al. 2009; Lee and Han 2002; Morwitz et al. 1998). Some authors, however, have argued that the price of an offering can also be partitioned into more than two components. Xia and Monroe (2004) and Voelckner et al. (2012) examine PP conditions with three price components, that is, the base price and two surcharges. Carlson and Weathers (2008) explore PP scenarios, in which they divide the total price into nine price components. Consumers are confronted with multiple price components in a wide range of industries including banking (Carrns 2013), utilities (Smith 2012), and the hotel sector (Rosenbloom 2012). In such situations, the allocation of the total price across the price components becomes critical.

Previous work reveals that surcharges typically account for 10–20 % of the total price in the PP literature (Chakravarti et al. 2002; Morwitz et al. 1998; Xia and Monroe 2004). Some studies, however, have examined PP approaches, in which surcharges amount to 30–50 % of the total price (Brown et al. 2010; Burman and Biswas 2007; Hamilton and Srivastava 2008) or are even higher than the base price (Carlson and Weathers 2008; Sheng et al. 2007). In fact, in many purchase situations, surcharges can account for the bulk of the total price, such as in the airline industry (Nobel 2013) or in online retail (Lewis et al. 2006). From the consumer's perspective, the question of whether or not all of the price components must be paid arises.

2.1.3 Are all price components purely mandatory for buyers?

Extant definitions stress that, in PP, buyers cannot exclude individual price components and related elements of the offering in case they want to purchase the offering. Thus, once a seller has divided a price of an offering into price components, all of these price components are mandatory components that must be paid by buyers. For example, airlines typically confront travelers with compulsory fuel charges that travelers have to pay together with the price for the flight. However, many airlines also charge fees for optional services such as seat reservations or meal plans. Such non-compulsory fees do not constitute PP since consumers are not required to buy the services. Additional examples of mandatory price components include shipping and handling fees in online retail. Many online

retailers charge shipping and handling fees separately rather than including these fees in the total price of offerings. However, some online retailers, such as Amazon Inc., and some manufacturers with company-own distribution systems, such as Dell Inc., offer free shipping for standard delivery, but charge ancillary fees for premium delivery services (e.g., faster or insured delivery). Noteworthy, these examples are no application areas of PP, because customers can select the add-on service that best fits with their respective preferences and costs for optional services occur only when consumers decide to select these services.

In summary, we define PP as a pricing tactic that builds on a seller's volitional choice and fundamental decision to divide the total price of an offering into at least two mandatory price components in order to stimulate favorable buyer response toward the offering. PP requires sellers to define the nature and the number of components of an offering, to label these components, to allocate the total price of the offering across these components, and to select a price presentation format that reveals the mandatory price components to be paid.

2.2 Theoretical foundations of PP

According to classical price theory, there should be no difference in demand based on if and how a price is partitioned, because the total price to the buyer is identical. However, various streams of research on the behavioral aspects of pricing show that consumers react differently to PP and equivalent combined pricing (e.g., Lee and Han 2002; Morwitz et al. 1998; Xia and Monroe 2004). To explain how PP affects consumers' responses, research has drawn on four primary theoretical perspectives: (1) anchoring and adjustment theory, (2) cost-benefit framework, (3) prospect theory, and (4) attribution theory.

Anchoring and adjustment theory contends that a decision is reached on the basis of on an initial value (the anchor) that is adjusted with additional information to yield the final decision (Tversky and Kahneman 1974). In the context of PP, consumers need to process different components of a price stimulus to estimate the total price level: the base price and one or more additional price components. According to anchoring and adjustment theory, consumers likely underestimate the total price, because they first anchor on the base price, as the largest price component, and then insufficiently adjust upward when processing the additional price components (Morwitz et al. 1998; Yadav 1994). Consequently, the anchoring and adjustment heuristic suggests that PP approaches should result in lower recalled total cost and better price perceptions than equivalent combined pricing formats.

According to the cost-benefit framework, consumers select different decision strategies by trading off between the costs of the effort required to process information and the benefits of accurate processing (Johnson and Payne 1985). On the basis of this framework, Morwitz et al. (1998) propose three cognitive strategies that consumers use when processing partitioned price information. First, consumers may fail to process the price components completely. They may either not notice them or decide not to incorporate them into the total price calculation. Second, consumers may rely on heuristics rather than accurate mental arithmetic to avoid deeper processing and minimize their cognitive effort. When combining the price

information of the base price and the additional price components, heuristics such as the anchoring and adjustment principle will lead to lower recalled total cost than actual aggregated prices. The second strategy thus corresponds to the anchoring and adjustment theory. Third, consumers may calculate the total cost by accurately adding the smaller price components to the base price. In this case, estimated total cost of PP and equivalent combined pricing should be identical, as postulated by the principles of classical price theory. According to the first and the second strategy, PP results in a lower recalled total cost than combined pricing, which should improve price perceptions. This is consistent with the propositions of anchoring and adjustment theory. With the third strategy, however, PP should have no significant effect on consumers' price perceptions.

Another theory used to explain the effects of PP on consumer response is the value function of the prospect theory (Kahneman and Tversky 1979). Prospect theory suggests that decisions are framed with respect to a reference point and that the value of a perceived loss decreases as a negatively accelerated function of the size of the loss (Schindler et al. 2005). As a consequence of the convex nature of the value function for losses, the pain of multiple losses will subjectively be greater than a single loss of objectively equal total value (Thaler 1985). In contrast to the aforementioned theories, prospect theory helps clarify the negative effects of PP on consumers' price perceptions. In purchase situations, prices typically represent sacrifices or losses. Partitioning the price of an offering into several price components confronts consumers with multiple losses, which increases the sacrifice effect of price (Voelckner 2008) and which leads to perceptions of higher total cost than an equivalent single price (Bertini and Wathieu 2008). According to prospect theory, PP will generally decrease the attractiveness of an offering, leading to negative effects on purchase behavior.

Finally, attribution theory (Weiner 1986) offers explanations for boundary conditions that determine consumers' evaluations of PP. Attribution theory views individuals as information processors whose behaviors are influenced by causal inferences and explanations of why a particular event or outcome has occurred (Weiner 2000). Attributions are what individuals assume to be the causes of an event they observe or an outcome that occurs (Weiner 1986). In the context of PP, consumers may evaluate price components differently, depending on the underlying reasons for their presence (Bambauer-Sachse and Mangold 2010; Koukova et al. 2012; Lee and Han 2002). In situations, in which PP involves a base price and an additional price component, negative consumer reactions can occur when consumers attribute the additional price component (e.g., a handling fee) to the seller's profit maximization ambitions (Xia and Monroe 2004). However, if consumers perceive the additional price component as caused by factors external to the seller, their evaluation of PP should be more favorable (Bambauer-Sachse and Mangold 2010). Thus, according to attribution theory, consumers' evaluations of a PP depend on causal ascriptions about the responsibility of the occurrence of price components. This, in turn, may induce positive or negative effects on purchase behavior.

The theoretical perspectives outlined above present different framings of PP and provide valuable insights into the features of PP and its effects on consumers'

responses. The predictions of prospect theory, which suggest that consumers prefer to integrate losses, do not necessarily conflict with the positive effects of PP on price perceptions as postulated by anchoring and adjustment theory and the cost–benefit framework (Morwitz et al. 1998). For example, there is evidence that some consumers perceive paying for certain surcharges as less painful than paying for base prices (Schindler et al. 2005). Consumers may not consider some price components as contributing to the profit of the seller since sellers pass the earnings from these price components through to other parties (e.g., a shipping fee that a seller collects and forwards to a logistics service provider). In addition, consumers may not process all price components as losses in a PP context. For instance, consumers may perceive paying for certain price components as a legitimate exchange for value and, thus, process them on the gain side of their value function (Chakravarti et al. 2002). Future research could examine these considerations to further align and integrate the theoretical perspectives (Table 2).

In summary, the sometimes mixed findings from previous work are attributable to the alternative theoretical lenses taken, which suggest different mechanisms underlying PP. To better understand the links between relevant factors and the resulting implications for PP, we next present a review of the current PP literature that summarizes existing knowledge about PP and its various effects on consumers' responses.

3 Review of the literature on PP

3.1 Method

We reviewed previous work on PP using a multiple-step approach. First, we defined a list of keywords and search terms that relate to PP including such expresses as: price partitioning, partitioned price*, price frame*, surcharge*, and all-inclusive price*. Next, we screened relevant databases including Web of Science, ABI Inform, EBSCO/EPNET, and Science Direct to identify relevant publications on PP. We focused on peer-reviewed English-language journals (e.g., Podsakoff et al. 2005) and reviewed publications in the marketing discipline as well as the more general fields of business research, economics, psychology, and law. The review period ranged from 1998 to 2015. In 1998, Morwitz et al. published the first article on PP. In addition, we performed an issue by issue search for articles in business, economics, psychology, and law journals with a five-year impact factor greater than 3 according to Thomson Reuters' SSCI. We assessed all publications for their PP relevance. Articles that covered at least one characteristic of PP were marked as relevant and entered into our data basis. For relevant publications, we also screened reference lists.

Table 3 summarizes the results of the literature review process. In total, we identified 50 articles. Of these, 29 articles stem from marketing, 5 articles from business research, 8 articles from economics, 4 articles from psychology, and 4 articles from law. The vast majority of the publications (i.e., 45 articles) contain at least one empirical study. 26 of the empirical articles examine and compare effects

Table 2 Theoretical perspectives on PP

Theoretical basis	Source(s)	Proposition in PP context	Impact of PP on consumer response
Anchoring and adjustment	Tversky and Kahneman (1974), Yadav (1994)	Consumers first anchor on the base price when estimating the total price level. They then adjust insufficiently upward to incorporate the surcharges.	<i>Positive</i> Total price level is perceived as lower with PP than combined pricing.
Cost–benefit framework	Johnson and Payne (1985), Morwitz et al. (1998)	Consumers use three distinct decision strategies when processing PP information: (a) ignore the surcharges, (b) insufficiently incorporate surcharges, or (c) accurately process surcharges.	<i>Positive</i> When surcharges are ignored or incorporated insufficiently, PP results in lower recalled costs than combined pricing. <i>Neutral</i> When surcharges are processed accurately, total recalled costs are identical for PP and combined pricing.
Value function of prospect theory	Kahneman and Tversky (1979), Thaler (1985)	Consumers code decision outcomes as gains or losses against a reference point. Their value function is convex for losses. PP results in the perception of multiple single losses (price components), whereas combined pricing results in one combined loss.	<i>Negative</i> Multiple single losses with PP (base price and surcharges) are perceived as more negative and lead to higher perceived total costs than one single perceived loss with combined pricing.
Attribution theory	Weiner (1986)	Consumers strive to understand the reason for the existence of a surcharge. PP offers will be perceived differently depending on which causes consumers attribute to the occurrence of a surcharge and the behavior of the seller imposing it.	<i>Positive/negative</i> Evaluation of PP offerings can be more or less favorable than combined pricing offerings depending on perceptions of the underlying reason for the appearance of the surcharges.

of at least one partitioned versus one combined price format. The “[Appendix](#)” shows detailed information on each of these publications.

3.2 State-of-the-art on PP research

Based on the analysis of prior PP research, we developed an organizing framework, shown in Fig. 1, to summarize and discuss existing knowledge about the effects of PP. In Fig. 1, the vertical path reflects a causal chain starting from price format (i.e., partitioned versus combined pricing) through perceptions and evaluations of prices and offerings to purchase-related behaviors and attitudinal and behavioral responses beyond those directly related to purchase. In addition, our framework includes boundary conditions that moderate how PP functions in a particular purchasing context. The following subsections present a synthesis of the PP literature, which is organized in terms of the linkages as shown in our framework. We will discuss

Table 3 Previous PP research

Source	Research approach	Effects of PP		
		Perception and evaluation	Purchase-related behavior	Purchase-unrelated behavior
Albinsson et al. (2010)	Experiment	✓	✓	
Ancarani et al. (2009)	Secondary data			
Bambauer and Gierl (2008)	Experiment	✓	✓	
Bambauer-Sachse and Mangold (2010)	Experiment	✓		
Bertini and Wathieu (2008)	Experiment	✓	✓	
Blaithorne and Roberts (2015)	Experiment	✓	✓	
Brown et al. (2010)	Field experiment		✓	
Burman and Biswas (2007)	Experiment	✓	✓	
Carlín (2009)	Analytical model			
Carlson and Weathers (2008)	Experiment	✓	✓	✓
Chakravarti et al. (2002)	Experiment	✓	✓	
Chandran and Morwitz (2006)	Experiment		✓	
Chatterjee (2010)	Experiment		✓	
Chatterjee and McGinnis (2010)	Experiment		✓	
Cheema (2008)	Secondary data, experiment		✓	
Chetty et al. (2009)	Field experiment		✓	
Chioveanu and Zhou (2013)	Analytical model			
Clark and Ward (2008)	Secondary data		✓	
Colantuoni and Rojas (2015)	Secondary data		✓	
Ellison and Wolitzky (2012)	Analytical model			
Estelami (2003)	Experiment	✓		
Feldman and Ruffle (2015)	Experiment		✓	
Frischmann et al. (2012)	Secondary data		✓	
Gumus et al. (2013)	Secondary data		✓	

Table 3 continued

Source	Research approach	Effects of PP		
		Perception and evaluation	Purchase-related behavior	Purchase-unrelated behavior
Hamilton and Srivastava (2008)	Experiment	✓	✓	✓
Hamilton et al. (2010)	Framework		✓	
Hayashi et al. (2013)	Experiment		✓	
Hossain and Morgan (2006)	Field experiment		✓	
Kachersky and Kim (2011)	Experiment	✓	✓	✓
Kim (2006)	Experiment	✓	✓	
Kim and Kachersky (2006)	Conceptual article	✓		
Kim and Kramer (2006)	Experiment	✓	✓	
Koukova et al. (2012)	Experiment	✓		
Lee and Han (2002)	Experiment	✓		✓
Lee et al. (2014)	Experiment	✓	✓	
Lewis (2006)	Secondary data		✓	
Lewis et al. (2006)	Secondary data		✓	
Lynn and Wang (2013)	Experiment	✓		
Morwitz et al. (1998)	Experiment	✓	✓	
Muthitachareon and Perry (2013)	Secondary data		✓	
Ott and Andrus (2000)	Survey		✓	
Reppel et al. (2015)	Experiment		✓	
Schindler et al. (2005)	Experiment		✓	
Sheng et al. (2007)	Experiment		✓	✓
Smith and Brynjolfsson (2001)	Secondary data	✓	✓	
Srivastava and Chakravarti (2011)	Experiment		✓	
Tuzovic et al. (2014)	Survey		✓	✓
Voelckner et al. (2012)	Experiment		✓	

Table 3 continued

Source	Research approach	Effects of PP								
		Perception and evaluation		Purchase-related behavior		Purchase-unrelated behavior				
		✓	✓	✓	✓	✓	✓			
Wang and Lynn (2015)	Experiment	✓								
Xia and Monroe (2004)	Experiment	✓								
Source	Research approach	Type	Magnitude	Number	Price arithmetic	Salience	Total price provision	Buyer characteristics	Seller characteristics	Situational characteristics
Characteristics of price components										
Albinsson et al. (2010)	Experiment	✓						✓		
Ancarani et al. (2009)	Secondary data	✓								
Bambauer and Gierl (2008)	Experiment	✓			✓					
Bambauer-Sachse and Mangold (2010)	Experiment								✓	
Bertini and Wathieu (2008)	Experiment	✓								
Blanthorne and Roberts (2015)	Experiment				✓					
Brown et al. (2010)	Field experiment	✓				✓				
Burman and Biswas (2007)	Experiment	✓						✓		
Carlin (2009)	Analytical model									
Carlson and Weathers (2008)	Experiment			✓			✓			✓
Chakravarti et al. (2002)	Experiment	✓							✓	
Chandran and Morwitz (2006)	Experiment									

Table 3 continued

Source	Research approach	Moderators of the effects of PP						
		Characteristics of price components						
Type	Magnitude	Number	Price arithmetic	Saliency	Total price provision	Buyer characteristics	Seller characteristics	Situational characteristics
Chatterjee (2010)	Experiment	✓						
Chatterjee and McGinnis (2010)	Experiment					✓	✓	
Cheema (2008)	Secondary data, experiment	✓						
Chetty et al. (2009)	Field experiment							✓
Chioveanu and Zhou (2013)	Analytical model							
Clark and Ward (2008)	Secondary data					✓		
Collantuoni and Rojas (2015)	Secondary data							
Ellison and Wolitzky (2012)	Analytical model							✓
Estelami (2003)	Experiment				✓			
Feldman and Ruffle (2015)	Experiment					✓		
Frischmann et al. (2012)	Secondary data	✓						
Gumus et al. (2013)	Secondary data							
Hamilton and Srivastava (2008)	Experiment	✓						
Hamilton et al. (2010)	Framework	✓						✓
Hayashi et al. (2013)	Experiment							
Hossain and Morgan (2006)	Field experiment	✓						
Kachersky and Kim (2011)	Experiment							✓
Kim (2006)	Experiment				✓			
Kim and Kachersky (2006)	Conceptual article	✓			✓			✓

Table 3 continued

Source	Research approach	Moderators of the effects of PP												
		Characteristics of price components												
		Type	Magnitude	Number	Price arithmetic	Saliency	Total price provision	Buyer characteristics	Seller characteristics	Situational characteristics				
Kim and Kramer (2006)	Experiment				✓					✓				
Koukova et al. (2012)	Experiment											✓		
Lee and Han (2002)	Experiment													✓
Lee et al. (2014)	Experiment										✓			
Lewis (2006)	Secondary data													
Lewis et al. (2006)	Secondary data													
Lynn and Wang (2013)	Experiment													
Morwitz et al. (1998)	Experiment				✓						✓			
Muhtitacharoen and Perry (2013)	Secondary data							✓						
Ott and Andrus (2000)	Survey													
Reppetti et al. (2015)	Experiment													
Schindler et al. (2005)	Experiment													
Sheng et al. (2007)	Experiment		✓								✓			✓
Smith and Brynjolfsson (2001)	Secondary data	✓												
Srivastava and Chakravarti (2011)	Experiment	✓												
Tuzovic et al. (2014)	Survey	✓												
Voelckner et al. (2012)	Experiment			✓										
Wang and Lynn (2015)	Experiment		✓								✓			
Xia and Monroe (2004)	Experiment	✓	✓											

overarching avenues for further research (within and beyond the scope of prior research) in the final section of this article.

3.2.1 *Effects of PP on price perceptions and evaluations of offerings*

3.2.1.1 *Effects on perceptions of total cost* In comparison to combined pricing, PP can lead to lower recalled total cost (e.g., Lee and Han 2002; Morwitz et al. 1998). Morwitz et al. (1998) compared reactions of students to partitioned prices (i.e., \$69.95 for a product, plus \$12.95 for shipping and handling) and combined prices (i.e., \$82.90 all-inclusive) for phones sold via mail order. On average, participants reported 6.7 % lower recalled total cost in the PP condition. Consumers either failed to process the surcharge completely or insufficiently incorporated the surcharge when processing price information. When analyzing participants' recall strategies in the PP conditions, Morwitz et al. (1998) showed that only 22 % of the participants recalled the total cost of the base price and the surcharge within a 5 % error margin of the actual amount. In contrast, 23 % of the participants ignored the surcharge, and 55 % did not fully account for the surcharge. Lee and Han (2002) examined differences between recalled and real total cost using ads for computer and audio equipment. In the PP scenario, a 10 % delivery and installation fee was added to the base price. Participants exposed to the PP conditions recalled a 7.6 % lower total cost than the actual amount, whereas the difference was only 2.6 % in the combined-pricing condition. Blanthorne and Roberts (2015) found similar results in a lab experiment in which a 6 % sales tax was added (or combined) to the base price of a refrigerator. In a study with phones similar to that by Morwitz et al. (1998), Kim (2006) compared recalled total cost for a combined condition with four PP conditions (absolute vs. percentage surcharge, salient vs. non-salient surcharge) and found that PP led to significantly lower recalled total cost in three of the four conditions (i.e., unless the shipping surcharge was presented with an absolute format and was visually salient).

Overall, considerable evidence shows that partitioning a price into a base price and a surcharge can lower customers' perceptions of total cost. Noteworthy, previous studies have examined PP situations with single and relatively small surcharges in the range of 10–20 % of the total price and only for one type of surcharges, that is, delivery-related fees. Thus, more research is needed to corroborate previous findings and examine if and how perceptions of total cost change in PP conditions with varying types, numbers, magnitudes, and presentation formats of surcharges.

3.2.1.2 *Effects on evaluation of offerings* With regard to the effect of PP on consumers' offer evaluations, previous work indicates mixed results. For example, Bambauer and Gierl (2008) analyzed the effects of PP on product and service evaluations in an experiment with five different product and service categories (i.e., phones, sauna, concert tickets, hotel accommodation, and car services). In the PP scenarios, participants reported a more favorable evaluation of the total price level than in the combined-pricing scenarios but also higher complexity of the price

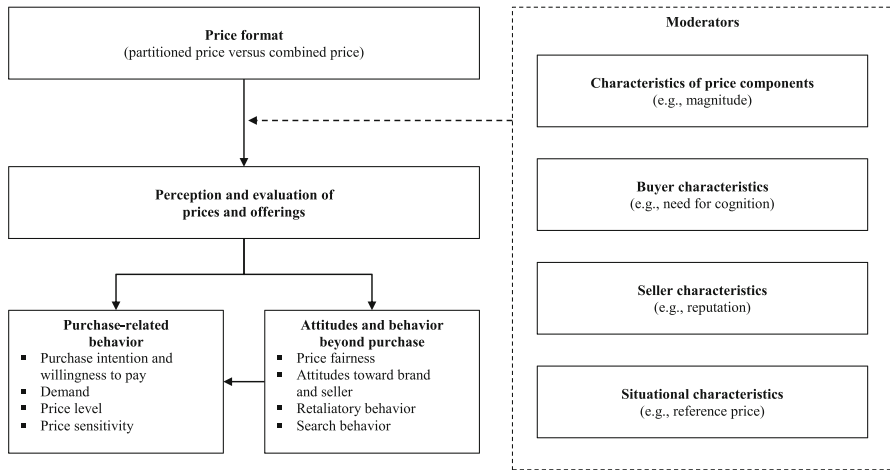


Fig. 1 Organizing framework of research on PP

structure and a higher manipulative intent of the seller. Overall, PP led to less favorable product and service evaluations, because the negative effects of PP through perceived complexity and manipulative intent outweighed the positive effect through the evaluation of the price level. In some cases, PP can also positively affect offer evaluations (Lynn and Wang 2013; Wang and Lynn 2015). In Lynn and Wang's (2013) experiment set in the catering industry context, participants had lower perceptions of restaurant expensiveness and higher expectations of service quality when faced with menus containing a partitioned 15 % service fee presented next to the food and beverage prices than when faced with menus with service-included pricing (and higher base prices). In a related experimental study (Wang and Lynn 2015), participants evaluated menus with partitioned service gratuities more favorably than with equivalent service-included prices when the service component was 12 %, below the standard 15 % U.S. tipping rate. However, when the charge was set at 18 % (i.e., above the standard rate), participants evaluated menus with PP less favorably than service-included menus.

Overall, empirical evidence for the effect of PP on consumers' evaluations of offerings is scarce. The few and mixed results indicate that the effect of PP on offer evaluation is mediated by such factors as price transparency and consumers' perceptions of fairness. Apparently, perceptions of price transparency influence fairness perceptions and, in turn, evaluations of offerings (Bambauer and Gierl 2008; Homburg et al. 2014). However, it is unclear how PP relates to price transparency perceptions. Two alternative explanations seem plausible: First, PP has a negative impact on price transparency, because consumers may infer that sellers apply PP to shroud an offer's total cost (Brown et al. 2010; Lee and Han 2002). Second, PP has a positive impact on price transparency, because PP allows consumers to comprehend the cost-benefit breakdown of a product in greater detail (Bertini and Wathieu 2008). Thus, more research is needed to examine the causal

chain from PP through price transparency and price fairness to offer evaluations in order to obtain insights into the causal order of effects.

3.2.2 *Effects of PP on purchase-related behavior*

3.2.2.1 *Impact on purchase intentions and willingness to pay* Existing studies indicate that PP can have opposite (i.e., positive and negative) effects on consumers' purchase intentions. Chakravarti et al. (2002) experimentally showed that choice intentions for refrigerators and relative choice versus a fixed comparison option were higher with PP than with combined pricing. In a similar experiment, Xia and Monroe (2004) found that PP increased purchase intentions for computers and, though the effects were statistically non-significant, also led to slightly greater price satisfaction and higher perceived value. Finally, experimental studies by Kim (2006) found that PP increased purchase intentions for phones in three out of four conditions.

PP can, in some cases, also negatively affect purchase intentions (e.g., Bertini and Wathieu 2008; Cheema 2008). Bertini and Wathieu (2008) experimentally showed that PP increased purchase probability and relative offer preference of airline tickets and groceries when the partitioned component was perceived as offering a good deal. However, when the partitioned component was perceived as offering an unattractive deal, an equivalent combined price led to better results. Reppeti et al. (2015) asked participants to choose between two scenarios in which a mandatory \$25 resort fee was either imposed separately or included in the room rate of a hotel package. 67 % of the participants chose the package with combined prices. The authors, however, recognize that the fee was rather high (18 % of base price) and that some consumers would consider such fees as unacceptable. Cheema (2008) manipulated the price format for phone services and found that the likelihood of signing up was lower in the PP condition. This effect was stronger when participants were informed that the seller did not have a good reputation. Albinsson et al. (2010) examined reactions to PP in the context of online purchase of MP3 players using reasonable and unreasonable shipping fees. The experiment's results revealed that participants who construed stimuli in a concrete and contextualized manner had lower purchase intentions and value perceptions with partitioned than with combined prices, regardless of the reasonableness of the surcharge. Conversely, participants who construed stimuli in a global and abstract manner had lower purchase intentions and value perceptions with PP only in the case of unreasonable surcharges.

Regarding the effects of PP on consumers' willingness to pay, previous work indicates overall beneficial effects (e.g., Morwitz et al. 1998; Voelckner et al. 2012). In an auction experiment, Morwitz et al. (1998) asked students to bid for a jar of pennies. In the combined pricing condition, the bid indicated the total price, whereas in the PP condition, participants were told that the winner must pay a buyer's premium of 15 % in addition to the bid. Morwitz et al. (1998) found that the ratio of total expected costs to perceived value was significantly higher in the PP condition (88.5 %) than in the combined-pricing condition (78.7 %). Voelckner et al. (2012) examined how PP affects the dual role of price as an indicator of quality (i.e., the

informational effect of price) and as a measure of sacrifice (i.e., the sacrifice effect of price) in the context of wine purchases. Using a choice-based conjoint approach, these authors found that PP affects the two distinct roles of price in opposite ways. The informational effect of price on product choice increased, while the sacrifice effect became more negative. The positive impact of PP on the informational effect overcompensated for its negative impact on the sacrifice effect, leading to an overall increase in willingness to pay with PP. Finally, Hayashi et al. (2013) extended PP to the labor supply context. They asked participants about their willingness to work in their function as a seller (of labor) rather than as a buyer. Compared with an all-inclusive wage, participants were less willing to work when their wage was framed as both a low-base wage plus a bonus (positive surcharge) and a high-base wage minus a tax (negative surcharge).

Overall, the results from previous studies suggest that PP can lead to higher purchase intentions and willingness to pay compared with combined pricing. These effects, however, are moderated by such factors as surcharge type, surcharge reasonableness, seller reputation, and consumers' construal levels. We discuss these conditions in more detail in Sect. 3.2.4.

3.2.2.2 Impact on consumer demand PP can also impact demand in actual purchase decisions (e.g., Blanthorne and Roberts 2015; Chetty et al. 2009) and, in some cases, increase consumption quantities (Feldman and Ruffle 2015).

Ott and Andrus (2000) surveyed U.S. consumers on the importance of vehicle personal property taxes (VPPTs) in the context of vehicle purchasing decisions. VPPTs represent a surcharge that is usually collected at the time of the sale and subsequently on an annual basis as a percentage of the vehicle's value. The authors found that VPPTs have negligible effects on vehicle purchases. However, vehicle owners in states with high VPPTs were slightly more sensitive to these taxes than those in states with low VPPT. Chetty et al. (2009) compared demand under tax-inclusive and tax-exclusive pricing conditions in a field experiment in a grocery store. Using scanner data, they found that purchases of treated personal care products decreased by 7.6 % when a 7.4 % sales tax was included in the posted shelf prices rather than partitioned and added to the bill at checkout. In a similar study, Colantuoni and Rojas (2015) used scanner data to analyze the impact of a supplementary 5.5 % sales tax on soft drinks in Maine from 1991 to 2001 on sales volume. They found that the partitioned sales tax, which was imposed at checkout, did not alter consumption at either the aggregate or the brand level. Finally, Feldman and Ruffle (2015) conducted a laboratory shopping experiment with consumer durables whose prices either included or excluded a 16 % sales tax. Participants were informed about the tax treatment up front and could go back and forth between shopping screens and checkout, where total price including tax was shown. Nevertheless, participants in the tax-exclusive condition bought 31 % more goods and spent 29 % more than those facing tax-inclusive prices.

Overall, previous findings suggest that PP can increase consumer demand compared with combined pricing. Noteworthy, previous studies on the effect of PP on demand have almost exclusively focused on taxes when examining PP. As

outlined previously, taxes do not fall into the domain of PP as defined here. Thus, the findings reported in this section build upon the particular conceptualization of PP. Future research should validate these findings for PP approaches with other types of surcharges.

3.2.2.3 Impact on price level In addition to its impact on consumer demand, PP can also influence the total price *charged* for offerings by sellers (Frischmann et al. 2012; Gumus et al. 2013) and the total price *paid* for offerings by buyers (e.g., Clark and Ward 2008; Hossain and Morgan 2006).

Gumus et al. (2013) analyzed price data from online retailers and found that sellers that impose fees for shipping and handling charge lower product prices but higher total prices than sellers that combine prices and offer free shipping and handling. On average, total prices were 3.4 % (digital cameras) and 4.5 % (printers) higher for sellers using PP. In a similar study, Frischmann et al. (2012) examined retailers' shipping fee strategy using data from an online price comparison site for computer equipment, consumer goods, and software. They found a U-shaped relationship between shipping fees and total price. Specifically, the total price started at a high level at which shipping costs were zero (combined pricing), declined to a minimum level with low to moderate shipping fees, and rose again with increasing fees. The authors argue that these results can be explained by sellers' exploitation of two behavioral biases. Some sellers may exploit the zero-risk bias by offering combined prices with free shipping to attract consumers who wrongly assume that these offers are less expensive than offers with moderate shipping fees. Other retailers may use PP with high shipping fees to target consumers who are likely to have biased perceptions of PP and underrate total prices. However, Ancarani et al. (2009) discovered that some firms also apply surcharges to offer lower total prices. Using transaction data of different service providers they showed that higher fees that deter consumers from abusing service policies can lead to lower total prices for hotel, airline, retailing, and restaurant services. The authors argue that by charging fees, such as non-refundable shipping or restocking fees, firms limit the abuse of customer-friendly service policies, such as opportunistic product returns. Therefore, surcharges can help firms control service costs. As a result, some firms offer lower prices, which benefit consumers who do not abuse service policies.

PP can also increase the total price paid by consumers (Clark and Ward 2008; Hossain and Morgan 2006). In a field experiment with 80 online auctions for CDs and games on eBay, Hossain and Morgan (2006) found that auctions with lower opening prices and higher shipping charges attracted more bidders and led to higher total prices than the reverse. A similar study by Clark and Ward (2008) analyzed 218 online auctions for Pokémon cards on eBay and found no effect of shipping charges in the range of \$0.55–\$4.20 on the amount of winning bids. Thus, higher surcharges led to higher total prices paid by consumers.

Overall, considerable evidence indicates that PP can lead to higher total transaction prices and price levels than combined pricing. Previous research, however, has largely examined PP from the perspective of the consumer and, as a

result, little is known about the antecedents of PP implementation. A fruitful area for further research involves the study of drivers of PP approaches. Specifically, it would be interesting to know what factors (e.g., industry characteristics, firm characteristics, product or service characteristics), and in what order, encourage firms to use PP (or combined pricing).

3.2.2.4 Impact on price sensitivity Consumers' price sensitivity differs between the base price of a PP offering and the surcharge(s) (e.g., Chandran and Morwitz 2006; Lewis 2006; Smith and Brynjolfsson 2001). For example, Smith and Brynjolfsson (2001) analyzed click-through rates for books at a recommendation website. They found that consumers were almost twice as sensitive to variation in shipping fees as to equivalent variation in the price of the books. Lewis (2006) also found that consumers are more responsive to shipping fees than product prices using transaction data from an online grocer. More specifically, an increase in shipping fees by \$1 reduced order volume by 6.2 %, which was more than twice as much as a volume decrease of 2.7 % due to a \$1 increase in product prices. Using the same data set, Lewis et al. (2006) further found that offering free shipping promotions affected order rates to a greater extent than offering equivalent monetary discounts on the product prices. Chandran and Morwitz (2006) discovered higher sensitivity to shipping fees than base prices in a laboratory study on consumer reactions to different types of price promotions. In their study, participants had higher purchase intentions for used books for \$23.00 with free shipping and handling than for partitioned offers, in which shipping and handling cost \$2.99 and consumers received a base price discount of an equivalent economic value. Similar effects were found in other studies on shipping fees, involving online purchases of computer equipment (Chatterjee 2010) and digital cameras (Chatterjee and McGinnis 2010).

Overall, the results of greater shipping fee sensitivity contradict the finding that consumers tend to underweight surcharges when processing partitioned price information (Lee and Han 2002; Morwitz et al. 1998). However, a possible explanation is that the heightened attention to shipping fees in online shopping enhanced the salience of these fees to the point at which consumers overweigh shipping fees in the purchase decision process (Lewis 2006). Further research should thus examine base price versus surcharge sensitivity for other types of price components and other contexts than online purchases. In addition, more research is needed to examine how the base price-surcharge ratio influences consumers' surcharge sensitivity.

3.2.3 Effects of PP on attitudes and behavior beyond purchase

3.2.3.1 Impact on fairness perceptions Price fairness is a key factor in predicting consumers' purchase behavior (Xia and Monroe 2004). Several studies have examined the conditions under which consumers perceive a partitioned price as fair or unfair and how these perceptions influence purchase behavior. For example, Sheng et al. (2007) proposed that the absolute and the relative magnitude of surcharges influence consumers' price fairness perceptions, which in turn affect

their purchase intentions. In the course of three experimental studies and using electronic goods and shipping fees as stimuli, they found that perceived fairness decreased as the surcharge magnitude increased and that fairness perceptions fully mediated the effect of surcharge magnitude on purchase intentions. In addition, they demonstrated that participants perceived surcharges that were less than the base prices as fairer than surcharges that were greater than the base prices. In a similar experiment, Kachersky and Kim (2011) found that participants chose PP offerings of digital cameras less often than an equivalent combined offer when they perceived the shipping surcharge as unfair. These authors further showed that perceptions of total price fairness mediated the influence of surcharge fairness on choice probability. Carlson and Weathers (2008) experimentally showed that the number of partitioned price components affected fairness perceptions of car repair services. This effect, however, was moderated by whether the total price was provided and the trustworthiness of the seller. When the total price was not provided, partitioning into a larger number of price components negatively affected perceived fairness for less trustworthy, but not for more trustworthy, sellers. In contrast, when the total price was provided, a larger number of price components increased fairness perceptions, regardless of the trustworthiness of the seller.

Overall, previous findings suggest that consumers perceive partitioned prices as fairer when (1) the price is partitioned in few rather than many price components, (2) surcharges account for the minority rather than the majority of the total price, and (3) the seller has a good rather than a bad reputation. In addition, consumers are sensitive to the seller's motives when evaluating price fairness (Xia and Monroe 2004). Similar effects may occur when consumers seek to understand why sellers impose a particular surcharge. In this respect, more research is needed to investigate consumers' attributions with the various types of surcharges used in today's markets to better explain the generation of price fairness perceptions. Future studies could, for example, analyze how perceptions of a surcharge along the different causal dimensions of locus of causality (Who is responsible for the surcharge?), controllability (Did the responsible actor have control over the cause that led to the surcharge?), and stability (Is the cause likely to recur?) affect fairness perceptions of PP offerings.

3.2.3.2 Impact on consumers' attitudes toward brands and firms PP can lead to an underestimation of total cost, which, when noticed by consumers, can induce negative attitudinal effects. In Lee and Han's (2002) experiment, participants first indicated their attitudes toward brands of computer and hi-fi system equipment and, one week later, recalled total cost of these brands' offerings with partitioned or combined prices. Participants in the PP conditions underestimated the actual \$839 total price by a greater amount (-\$109; 13.0 %) than did participants in the combined pricing conditions (-\$7.60; 0.9 %). The authors then exposed participants to information about the actual total price and again measured brand attitude. They found that brand attitudes decreased with partitioned, but not with combined pricing. Furthermore, the negative effect of PP on brand attitude was mitigated when participants attributed the wrongly recalled price to themselves and the effect

was larger when participants attributed the recall error to the seller. These results suggest that PP negatively influences consumers' purchase behavior when consumers realize that they underestimated total cost and believe that this error resulted from the seller's attempt to discourage accurate price processing. However, Lee and Han (2002) did not consider possible beneficial effects of PP on attitude. For example, consumers who fully process PP information may appreciate greater price transparency which in turn may stimulate positive attitudes toward the seller (Homburg et al. 2014). In addition, Lee and Han's (2002) study did not examine behavioral outcomes. Thus, more research is needed to explore the underlying mechanisms of how PP leads to negative or positive attitudinal effects toward brands and/or sellers and the conditions under which these effects influence actual or future purchases.

3.2.3.3 Impact on retaliatory behavior If consumers perceive fees as unacceptable, PP can lead to negative consequences for the seller beyond those directly related to purchases. Tuzovic et al. (2014) surveyed airline passengers to examine the relationship between surcharge acceptability and consumers' behavioral outcomes. Using structural equation modeling, they found a direct negative effect of surcharge acceptability on perceived betrayal and fee-related anger. In addition, the findings from this study indicate that surcharge acceptability indirectly affected different forms of retaliatory behavior via emotional reactions. Perceived betrayal and anger both had a positive effect on public complaining, negative word of mouth, and avoidance. These results illustrate why firms should carefully assess the acceptability of fees in the particular situation imposed.

3.2.3.4 Impact on search behavior Findings on the impact of PP on consumer search are scarce. Xia and Monroe (2004) examined the effect of PP on consumers' intention to search for further information. They found that PP reduced future search intentions compared with combined pricing, but the results were non-significant in both experiments. However, Lee and Han's (2002) finding that PP induces negative attitudinal effects when consumers realize that they underestimated the total cost of offers suggests that consumers may also attend more carefully to PP and search more actively for information to avoid further price calculation errors. More research is needed to clarify the impact of PP on consumers' search behaviors—in particular in purchase situations, in which consumers need to compare multiple offerings with different price formats. Future studies should examine how consumer search is affected when sellers use different PP approaches, such as percentage versus absolute presentation formats or a different number of price components. Variation in PP approaches leads to higher cognitive efforts for consumers as they need to process different price formats and calculate and compare each total price. In such situations, consumers may try to find ways to reduce cognitive efforts and limit their search costs. For example, consumers may decide to search across fewer offerings or they may focus on offerings with similar formats (Xia and Monroe 2004). In addition, consumers may shift their focus on offerings with transparent and simple prices (Homburg et al. 2014). Third, consumers may decide to not process all price information but rather focus, for example, on the base price of an

offer (Morwitz et al. 1998). Finally, consumers may concentrate on other, easier to compare offer attributes than price (Bertini and Wathieu 2008).

3.2.4 Moderators of the effects of PP

Considering that previous research has found mixed results regarding the performance implications of PP, it is important to incorporate boundary conditions of PP approaches. These factors moderate how PP influences perceptions and evaluations of prices and offerings, which in turn can determine if PP positively or negatively affects purchase behavior in a specific situation.

3.2.4.1 Characteristics of price components *Type of price components* Several studies have examined how different types of price components moderate the effects of PP (e.g., Bertini and Wathieu 2008; Chakravarti et al. 2002; Hamilton and Srivastava 2008). Chakravarti et al. (2002) found that PP changed the attention paid to the related product features of partitioned components. In their experiment, participants evaluated refrigerators more positive and had higher choice proportions when a consumption-related accessory (icemaker) rather than a performance-related feature (warranty) was partitioned. In a similar study, Bertini and Wathieu (2008) propose that PP increases the amount of attention paid to the attributes tagged with distinct price information. The results of four experiments showed that characteristics of the surcharged components, such as their perceived value, relative importance, and ease of evaluation, influenced the extent to which PP increased or decreased demand. In line with this perspective, Hamilton and Srivastava (2008) examined how the perceived consumption benefits of the surcharged components moderate responses to PP in different product categories (i.e., white goods, car repair services, computer equipment, and food). They suggest that consumers are more sensitive to the price of the partitioned component that provides relatively low, rather than high, perceived benefits. These authors show that participants systematically preferred partitions of the same total price, in which they would have paid a lower price for the low-benefit component and a higher price for the high-benefit component. Tuzovic et al. (2014) demonstrated similar results examining the surcharge acceptability in the airline industry. Surcharges for services that offered low benefits and for which participants did not recognize extra value being created in return for the fee led to stronger negative effects on consumer emotion and retaliatory behavior. Finally, Srivastava and Chakravarti (2011) showed that PP offerings of used cars, in which the partitioned component was aligned with a specific goal of consumers, such as being adequately compensated for an old car being traded in for a new car, led to higher choice proportions than PP offerings, in which the component did not satisfy consumers' goals.

Overall, the quintessence of these findings is that PP draws attention to the surcharged components, which in turn induces consumers to evaluate the characteristics and benefits of the particular price component. If consumers believe that price components are consistent with their goals or provide them with greater

benefit, PP positively affects offer evaluation and subsequent purchase behavior, and vice versa.

Magnitude of price components The magnitude of price components, both absolute and relative to a base price, can affect the extent to which consumers cognitively process price information. For example, Xia and Monroe (2004) compared the effects of PP with shipping fees and taxes that accounted for either 6 or 12 % of the product price. They found that larger surcharges, despite equal total prices, led to significantly lower perceived value and lower acceptance of the fee. Similar results were found in other experimental studies (Albinsson et al. 2010; Bambauer and Gierl 2008). Sheng et al. (2007) varied the magnitude of a shipping and handling fee to be 10 % (\$5), 30 % (\$15), or 50 % (\$25) of the base price of a CD Walkman for \$49.95. Participants had higher purchase intentions for PP than for combined pricing when the fee was a small part of the base price (10 %) but lower purchase intentions when the fee was a larger part (50 %). In contrast, purchase intentions did not significantly differ between price formats for medium surcharges (30 %). In addition, Sheng et al. (2007) showed that perceived fairness decreased as the magnitude of fees increased. In a second study, they kept the shipping and handling fee constant (\$9) and varied the base price of a digital watch to be either \$7.90 or \$49.90. They found that the relative size of the base price altered the favorability of PP. More specifically, purchase intentions were lower when the surcharge was greater than the base price.

Chakravarti et al. (2002) found that refrigerators were evaluated worse and chosen less often when the focal product price was unfavorable (i.e., higher) relative to the price of a comparison option. Their findings illustrate that marketers can influence the relative price attractiveness of focal products by shifting parts of the total price to other components. In this context, Burman and Biswas (2007) experimentally examined airline ticket purchases with surcharges for taxes and processing that accounted for either 16 or 32 % of the ticket price. When a surcharge was reasonable (16 %), participants with a high need for cognition had higher perceptions of offer value and higher willingness to purchase in the partitioned than the combined pricing condition, but these effects reversed when the surcharge was unreasonable (32 %).

Finally, Brown et al. (2010) conducted field experiments on online auction sites in Taiwan and Ireland and manipulated the shipping charge level. They showed that higher shipping fees increased the total price paid by winning bidders by 5 % in Taiwan and 7 % in Ireland when shipping charges were omitted from the title of the product listing. In contrast with the findings on the relative size of surcharges, these results suggest that when surcharges are hidden, raising the relative size of the surcharge can increase demand. Note, however, that the particular range of the relative size of shipping fees was rather small in both samples, reaching from 1 to 5 % in Taiwan and 29 to 38 % in Ireland. Finally, the relative magnitude of a surcharge also influenced the favorability of the corresponding base product price relative to reference products.

Overall, the findings suggest that when a surcharge is small relative to the base price, consumers often do not fully incorporate the price component in their price processing. This effect, in turn, leads to lower perceived total prices and a positive

impact on purchase behavior. The definition of what constitutes a small surcharge is context-dependent but, in line with previous research, usually ranges between 5 and 10 % of the base price. In contrast, when a surcharge is a substantial proportion of the total price, consumers are more likely to process it in more detail and evaluate its acceptability in the particular purchasing context. In this case, the positive effects of PP on cognitive and behavioral factors are attenuated or can even become negative.

Number of price components Research suggests that the extensiveness of how the total price is partitioned can affect responses to PP, even when the total price is held constant (e.g., Carlson and Weathers 2008; Xia and Monroe 2004). Xia and Monroe (2004) compared reactions to PP conditions with one larger surcharge for either shipping or taxes and two smaller surcharges for shipping and taxes. All PP conditions resulted in higher purchase intentions than the combined pricing condition. However, they found an inverted U-shaped effect for level of partition. More specifically, using two surcharges instead of one attenuated the positive effect on purchase intention as well as the effects on perceived value and perceived store trustworthiness. In addition, Carlson and Weathers (2008) found that the effects of partitioning into a larger number of price components depend on whether the total price is presented. In their first experimental study, in which the total price was not provided, participants recalled higher total cost for car repair services and overestimated actual total cost when partitioned across nine, rather than two, components. The authors argue that consumers are likely to use a numerosity heuristic when processing multiple price components, according to which a larger number of components represents a larger total amount. However, in their second experimental study, in which the total price was provided, partitioning into a larger number of price components led to lower recalled total cost. Finally, Voelckner et al. (2012) compared the price coefficients in PP conditions with one versus two surcharges. They found that both the informational and sacrifice effects of price remained stable across conditions.

Overall, the diverging findings suggest that whether partitioning the price with more than one surcharge will positively or negatively affect response to PP depends on the respective product category and the type of fees involved. To clarify this topic, we suggest further research should focus on the interactions between number of price components and factors of the purchasing contexts (e.g., product category).

Arithmetic of price components. Studies have also examined how the arithmetic operation associated with a surcharge affects cognitive (e.g., Estelami 2003; Morwitz et al. 1998) and behavioral responses (e.g., Kim 2006; Xia and Monroe 2004) to PP. For example, Morwitz et al. (1998) found that significantly more participants ignored a percentage surcharge (35.6 %) than an absolute surcharge (12.2 %) when calculating an offer's total cost. Estelami (2003) experimentally examined information processing of different multi-dimensional prices; many of his stimuli represent examples of PP. He found that percentage surcharges led to greater evaluation effort and resulted in lower decision accuracy than dollar amount surcharges. Within this context, Kim and Kachersky (2006) note that consumers make small extra efforts to accurately process surcharges that use simple arithmetic, such as absolute amounts. However, when faced with difficult-to-compute price

components, such as percentage surcharges, consumers are demotivated to calculate total prices and instead use decision heuristics to form their price judgment. Bambauer and Gierl (2008) found that percentage surcharges led to more positive evaluations of the total price level than absolute surcharges. However, percentage surcharges also increase perceived complexity of the price structure and manipulative intent of the seller. Finally, Wang and Lynn (2015) found that participants rated percentage service gratuities of restaurant menus more favorably than dollar service gratuities for gratuity levels below the standard 15 % tipping rate. However, deal perceptions did not differ between the two gratuity types when the service components accounted for more than 15 % of the menu price.

Regarding behavioral responses, research suggests that purchase intentions are higher for PP offerings with percentage surcharges than for those with absolute dollar amount surcharges (Kim 2006; Xia and Monroe 2004). However, Kim (2006) found that price arithmetic did not affect purchase intentions in the case of visually salient surcharges.

Overall, these findings suggest that surcharges that require more complex arithmetic tasks, such as percentage surcharges, can lead to lower perceived total cost and, thus, have more positive effects on purchase behavior than surcharges with absolute amounts involving simpler arithmetic tasks.

Salience of small price components (surcharges) The visual salience of surcharges can affect information processing and, as a result, behavioral responses to PP. For example, Kim (2006) examined visual salience based on the font size of the surcharge. He found that PP led to lower recalled total cost and higher purchase intentions when the surcharge was less visually salient (i.e., when the font size of the surcharge was small) than when it was illustrated in the same (larger) size of the base price. Similarly, Kim and Kachersky (2006) note that less salient fees lead to less accurate price recall and animate consumers to ignore or underweight costs in decision making.

More salient surcharges can also lead to higher demand (Brown et al. 2010; Muthitacharoen and Perry 2013). In Brown et al.'s (2010) experiment, the total price paid by winning bidders was higher when shipping charges were disclosed in a large font in the title of the product listing, than when they were less visually salient and only appeared in small font below the product description. The authors conclude that increasing the salience of smaller surcharges can yield higher seller revenues, especially in markets with a high proportion of suspicious buyers who are unaware of the exact charges but assume they are high. Muthitacharoen and Perry (2013) found similar results using secondary data from online auction sites of MP3 players. More specifically, when shipping charge information was explicitly stated next to the bidding price, auction final prices were 9.6 % higher than when surcharge information was hidden in the product description.

Overall, these findings suggest that the way surcharges are presented is a vital factor that should be considered when designing PP tactics. Marketers should be aware that decreasing the salience of surcharges can impede consumers' information processing, which in turn can induce positive effects on price perceptions because consumers are more likely to ignore or insufficiently process less salient

fees. However, less salient fees might also induce negative effects because they lessen information transparency or might evoke feelings of being manipulated.

Provision of total price Total prices explicitly provided in PP offerings should minimize the effects of heuristic processing of partitioned price information (Hamilton and Srivastava 2008). However, in Feldman and Ruffle's (2015) shopping experiment, participants in the PP condition could view total prices, including taxes at checkout, and could return products for free. Still, they spent 29 % more than those facing combined prices. Xia and Monroe (2004) also found that PP increased purchase intentions both when the total price was provided and when it was not. They also found that providing or not providing the total price affects the impact of the presentation format. When the total price was not provided, a percentage presentation led to higher purchase intentions than a surcharge with an absolute amount. This effect disappeared when the total price was presented. These findings suggest that consumers respond positively to PP even when the total price is explicitly provided. Carlson and Weathers (2008) found that providing or not providing the total price also affects the impact of using a larger number of price components. More specifically, providing the total price decreases the negative effects of using a larger number of price components. Carlson and Weathers speculated that if the total price is provided, consumers would be unlikely to believe that the seller was trying to create uncertainty about the real total cost. The positive effect of price transparency may also receive greater weight in overall price judgments.

Overall, research indicates that PP can improve price perceptions even when the total price is provided. However, it is unclear whether the provision of the total price stimulates (e.g., by increasing price transparency perceptions, which can enhance consumers' fairness perceptions and in turn stimulate purchase intentions) or hinders (e.g., by diminishing effects of lower perceived total cost) the impact of PP on purchase behavior. Further research should focus on the mediating role of intervening variables and investigate the causal chains from PP through price transparency to purchase intention.

3.2.4.2 Buyer characteristics Need for cognition (NFC) NFC influences the extent to which consumers encode and process information (Cacioppo and Petty 1982). Through its impact on people's desire to think accurately and deeply, NFC can play a critical role in determining responses to PP. For example, Kim and Kramer (2006) showed that low-NFC participants recalled lower total prices of phone and digital camera offerings and had a higher purchase likelihood for percentage surcharges than for absolute surcharges. However, for high-NFC participants, surcharge presentation format had no effect on price recall and purchase likelihood. Burman and Biswas (2007) found that NFC also interacts with the reasonableness of a surcharge to determine the effectiveness of PP. Across three studies, participants with a high NFC had higher perceptions of offer value of airline tickets and a higher willingness to purchase partitioned than combined prices when surcharges were reasonable. When the PP offer included unreasonable surcharges, these effects reversed. In contrast, price format did not significantly affect participants with low NFC in either surcharge condition. Finally, Cheema (2008) showed that both the

magnitude of a surcharge and the reputation of the seller affected high-NFC consumers, indicating a greater attention to surcharge information. Specifically, lower surcharges increased their purchase likelihood of phone services for low- but not high-reputation sellers. Low-NFC consumers, however, were only affected by seller reputation, not by the size of the surcharge.

Overall, these findings suggest that consumers with a high level of NFC tend to process surcharge information with greater elaboration. In contrast, consumers with a low level of NFC tend to rely on heuristics to process surcharge information. In addition, these consumers tend to use source cues, such as the seller's reputation, to make purchase decisions.

Construal level The processing of price information in a PP context can also depend on consumers' inherent construal level (Albinsson et al. 2010). Consumers, who have an inherent tendency to construe stimuli at a concrete and contextualized level, process surcharges in more detail, regardless of the relative size of the surcharge. In contrast, consumers, who have an inherent tendency to construe stimuli at a global and abstract level, only become aware of surcharges when they are relatively large and unreasonable. Albinsson et al. (2010) found support for this rationale in two experimental studies using MP3 player purchases as stimuli.

Regulatory focus Based on arguments forwarded by regulatory focus theory (Higgins 1997), the effectiveness of PP can also depend on how consumers try to achieve their goals and, consequently, on their differences in information processing (Lee et al. 2014). Promotion-focused consumers tend to engage in global processing and rely on the primary features of a stimulus when making judgments. In a PP context, promotion-focused consumers will therefore focus on the base price and ignore or insufficiently process surcharge information. In contrast, prevention-focused consumers engage in local processing and will also evaluate minor information of a stimulus. Thus, when processing price information, they will attend to more details and be less likely to underestimate surcharges. Lee et al. (2014) test these hypotheses in four experimental studies using different product categories (flowers, furniture, and airline tickets) and surcharges (handling, shipping, and taxes). Across all studies, they found that promotion-focused participants perceived PP as more attractive than combined pricing and had higher purchase intentions. In contrast, prevention-focused participants' reactions to price format did not significantly differ.

Experience Experienced buyers can overcome heuristic biases when processing price information and should therefore come to more accurate decisions (Ashenfelter 1989). However, in a PP context, Cheema (2008) and Clark and Ward (2008) found no significant effect of buyers' experience level on winning bidders' sensitivity to shipping and handling surcharges in online auctions. Similarly, Feldman and Ruffle (2015) found limited learning effects in their study on tax surcharges. Their shopping experiment comprised 10 rounds of choice, including feedback in between each round. The positive effect of PP on demand lasted throughout the experiment and only slightly weakened in the final rounds. These findings suggest that the effects of PP on price perceptions and purchase behavior are independent of consumers' level of experience.

Attitude toward offering Consumers' attitude toward a brand relative to other brands in a purchase situation can influence how carefully they attend to surcharges and thus moderate the impact of PP on price perceptions. Morwitz et al. (1998) found an inverted U-shaped relationship between brand affect and recalled total cost. They suggest that consumers with low brand affect are less motivated to accurately process price and surcharge information, because they are unlikely to purchase the brand. Likewise, because they are likely to purchase the product consumers with high brand affect pay less attention to fees, resulting in lower perceived total cost. However, consumers whose affect for a brand is similar to other brands tend to be uncertain about which brand to purchase and therefore process fees in more detail to reduce uncertainty. Thus, recalled total costs are most accurate for consumers with moderate brand affect.

Attitude toward PP Preference for partitioned or combined pricing can also depend on consumers' general disposition toward a price format. For example, whether or not consumers trust a seller's motive to impose a surcharge can moderate reactions to PP. Schindler et al. (2005) developed a "shipping-fee skepticism" construct and distinguished between shipping-fee skeptics, who tend to view shipping fees as an unfair source of profit for sellers, and non-shipping-fee skeptics, who tend to interpret shipping fees as a means that helps sellers cover their costs. In an experimental study, they found that shipping-fee skeptics liked offerings of lamps less when shipping fees were made salient through PP when an external reference price was available. Conversely, non-shipping-fee skeptics preferred offers with PP, because this allowed them to focus their processing on the separateness of the shipping fees, which non-skeptics view as a fair transfer of the seller's costs.

Reactions to PP can also depend on whether consumers believe that a pricing tactic is meant to persuade them. Kachersky and Kim (2011) argue that PP can be persuasive because it seduces consumers to focus on the base price and ignore or insufficiently account for surcharges. In contrast, combined pricing can be persuasive because it assures consumers of a greater deal value by not specifying surcharges and concealing their associated costs (Estelami 2003). In their first study, Kachersky and Kim (2011) asked students to report their perceptions of the persuasive intent of a partitioned (using a shipping fee) versus a combined (using all-inclusive shipping) price format. Of the participants, 47 % viewed PP as having greater persuasive intent, while only 13 % viewed combined pricing as having greater persuasive intent. In accordance with these results, Bambauer-Sachse and Mangold (2010) discovered that participants perceived a higher manipulative intent of the seller in the PP condition. In their second study, Kachersky and Kim (2011) showed that participants preferred offers with the price format they perceived as having less persuasive intent. Participants who believed that PP had more persuasive intent chose combined pricing offerings, and vice versa. Kachersky and Kim (2011) further found that the effect of persuasion knowledge was stronger when consumers were unfamiliar with the offer category.

3.2.4.3 Seller characteristics Reputation of the seller The reputation of a seller can moderate both cognitive (Cheema 2008; Carlson and Weathers 2008) and behavioral (Cheema 2008) responses to PP. Cheema (2008) used data from an online auction site and found that buyers adjust their bids to account for higher shipping and handling charges when buying from low-reputation sellers but not when buying from high-reputation sellers. He found similar results in an experiment in which low surcharges led to higher willingness to pay for low-reputation sellers but surcharge magnitude did not affect willingness to pay for high-reputation sellers. He further found that participants took longer to decide and paid greater attention to surcharges when buying from low-reputation sellers. Similarly, Carlson and Weathers (2008) found that partitioning into a larger than smaller number of price components when the total price was not provided negatively affects fairness perceptions and purchase intentions for less trustworthy, but not trustworthy, sellers.

Responsibility for surcharge The effectiveness of a partitioned versus a combined pricing approach can also depend on who consumers perceive as being responsible for particular price components. Bambauer-Sachse and Mangold (2010) demonstrated that PP increased perceived price attractiveness of airline tickets and hotel rooms, but only if the marketer was perceived to be unaccountable for a surcharge. If the marketer was perceived to be responsible, the positive effect of PP dissolved, and participants had a stronger sense of being manipulated and perceived higher complexity of the price structure. These results imply that marketers can influence the effectiveness of PP approaches by imposing fees on components for which they are deemed irresponsible. For example, a firm may be perceived as being accountable for a handling fee, whereas in the case of taxes, the government, not the seller, might be perceived as causing the surcharge. A buyer might also perceive himself or herself as being responsible for a fee. For example, a shipping surcharge for online purchases labeled as *fees for shipping* (instead of the commonly used term *shipping and handling charges*), could intensify buyers' perceptions that they themselves, not the firm or a third-party, cause the fee (e.g., because ordering online instead of buying the product at a store). In such situations, consumers may perceive a surcharge as a means to passing along costs rather than as a source of profit for the seller (Schindler et al. 2005), which should positively influence response to PP. We suggest further research to explore whom (buyer, seller, or a third-party) consumers perceive as responsible for different types of surcharges as well as the impact of different ways of phrasing these surcharges, all of which may moderate the effects of PP on consumer behavior.

Justification for surcharge In addition to surcharge responsibility, marketers can also influence the effectiveness of PP approaches by providing justifications for surcharges. Koukova et al. (2012) experimentally examined how consumers respond to different shipping fee structures in the context of online purchases of computer equipment and coffeemakers. They distinguished between unconditioned flat-rate shipping, a form of PP with a fixed shipping fee, and threshold-based free shipping, a form of combined pricing when order value is above the threshold, and found that perceptions of shipping fees as a profit generator for the seller were lower (higher) under threshold-based free shipping than under unconditioned shipping surcharges for order values above (below) the threshold. However, the effect diminished when

justification for the fees was provided that linked the shipping fee to the seller's actual cost of delivery. The authors argue that when sellers provide a reasonable explanation for a surcharge, consumers may view the fee as a fair propagation of the seller's actual cost of doing business rather than as a way to generate profit. Applied to other forms of PP (e.g., a payment fee passed on to a credit card provider) this finding suggests that marketers can attenuate negative reactions to PP by communicating the reasons of a surcharge. In this context, further research should examine the interplay of the perceived responsibility for a surcharge and the justification for the respective fee provided by the seller.

3.2.4.4 Situational characteristics Reference prices Reference prices can serve as perceptual cues that influence how consumers process partitioned prices and form judgments about the acceptability of a surcharge. In this context, Schindler et al. (2005) showed that the effect of consumer skepticism of surcharges on preference for a price format differs contingent on the availability of an external reference price. When an external reference price for the product was available, skeptics preferred offers with combined pricing, whereas non-skeptics preferred PP. However, without an external reference price, the authors found no significant preference for either price format for both skeptics and non-skeptics.

Sales channel PP can have a more negative effect on brand attitude than combined pricing (Lee and Han 2002). However, Lee and Han (2002) found this effect only in the context of direct selling. In contrast, when a retailer sold the product, PP led to a more negative effect on attitudes toward the retailer but did not negatively affect attitudes toward the product's brand. The authors argue that in the case of retail selling, consumers hold the retailer, not the brand manufacturer, responsible for the pricing method. Thus, possible negative effects of PP, such as sense of being discouraged from accurate price processing, will be associated with the retailer. These findings suggest that manufacturers, which market products directly, should be particularly careful when applying PP, because PP can affect consumers' attitudes toward both the seller and the product brand.

Competitive environment and market structure Some studies in the field of behavioral economics have examined how firms use PP approaches under various levels of competition. Using an all-or-nothing two-stage search model (Carlin 2009), a sequential search model (Ellison and Wolitzky 2012) and duopoly and oligopoly pricing models (Chioveanu and Zhou 2013), they postulate a positive link between intensity of competition and firms' application and intensity of PP approaches. Carlin (2009) and Ellison and Wolitzky (2012) discussed PP as one price obfuscation tactic that firms apply to add complexity to their pricing structure. They build on the information search framework to show that price complexity makes further search more costly, prevents an increasing number of consumers from becoming knowledgeable about market prices, and thus increases firm profits. Carlin (2009) further found that as more firms compete in the industry, they tend to add more complexity to their pricing structure (e.g., by using PP more often or in more sophisticated ways) rather than make prices more comprehensible. In a similar study, Chioveanu and Zhou (2013) showed that PP and other forms of price framing

can create consumer confusion and inhibit consumers' abilities to compare prices. They propose that consumers may fail to compare and process prices correctly, because of the complexity of a price frame or because of the difficulty of comparing different frames across firms. As a result, firms vary on both prices and frames and obtain positive profits in the equilibrium. Furthermore, increased competition makes firms use complex price frames more often, leading to increased consumer confusion and lower consumer surplus.

In the preceding sections, we summarized and discussed the extant knowledge on the various effects of PP on consumers' responses. The diverse and sometimes mixed findings on the effectiveness of a partitioned versus a combined pricing approach illustrate the importance of incorporating boundary conditions and contingencies of the specific situation. For example, previous research indicates that consumers react more favorable to PP approaches when surcharges represent a relatively small amount compared with the base price, when consumers believe surcharges provide them with greater benefit or are consistent with their goals, when surcharges have a well-justified purpose, when consumers are not skeptical about the type of surcharge or the firm's motive to impose it, or when the firm has a comparatively good reputation. Before deciding upon whether or not to apply PP tactics, managers should carefully identify and evaluate these as well as additional factors such as those summarized in Fig. 1 for the individual application in question. In the final section, we present a framework that addresses overarching limitations of prior PP research and provide directions for future research on the topic.

4 Directions for further research on PP

The findings of our literature review show that previous work has made considerable contributions to the understanding of how consumers perceive and react to PP in comparison to equivalent combined pricing. Still, many important questions emerging both within and beyond the scope of existing research on PP remain unanswered or warrant further investigation. In this context, for example, the literature review in this article may provide the springboard for a meta-analysis on specific PP effects. Such an inquiry could help better understand patterns among previous study results or highlight links between PP effects that may not yet be apparent and thus complement the present work.

In our discussion of the current literature on PP, we focus on the development of an integrative framework that helps address overarching limitations of prior PP research (see Table 4).

While there is a rich body of empirical research on PP, it tends to be rather fragmented, leading to mixed results and, sometimes, ambiguous findings. In addition, the vast majority of empirical evidence refers to one group of market actors, that is, consumers, thereby neglecting the impact of PP as a pricing tactic on other market actors, such as competitors. We attempt to address these limitations by developing a framework that provides guidance for further research on PP. We focus on three major types of effects that future studies should take into account

Table 4 Challenges and opportunities for further research on PP

Types of effects	Market actors	
	Consumers	Competitors
Interaction versus main effects	Identify PP approaches with (un)favorable effects on consumer response	Identify PP approaches to create competitive advantage
Nonlinear versus linear effects	Understand the nature of PP effects on consumer response	Understand the nature of PP effects on competitor response
Delayed versus immediate effects	Identify short-term and long-term effects of PP on consumer response	Identify short-term and long-term effects of PP on competitor response

when examining PP: (1) interaction versus main effects, (2) nonlinear versus linear effects, and (3) delayed versus immediate effects.

4.1 Interaction versus main effects

Since Morwitz et al.'s (1998) pioneering article on PP, several studies have deepened and broadened the understanding of the various effects of the phenomenon on consumer response. However, further research is still needed to fully understand how PP influences consumers' and competitors' responses. PP approaches can substantially differ based on how firms divide the total price of an offering into price components. Type, magnitude, number, arithmetic, salience, and presentation format of price components present several dimensions along which firms can develop alternative PP approaches. Existing research has most commonly focused on a limited set (i.e., one or two) of these PP dimensions when examining the effects of PP. Thus, more research into PP modalities is needed to obtain additional insights into the interplay between PP dimensions and the implications for consumers' responses. For example, one might speculate that the effects of surcharge magnitude and number of surcharges differ as a function of the types of price components involved and consumers' attributions for these surcharges. More specifically, if consumers perceive the seller as responsible for price components or attribute surcharges to the firm's profit maximization ambitions (e.g., service fees), a larger magnitude might enhance perception of price unfairness and negatively impact purchase behavior. But consumers might also perceive certain price components as caused by factors external to the seller (i.e., the consumer or a third party involved) and as a means to passing along costs. In such cases, a larger amount or number or price components might not affect fairness perceptions but could induce consumers to focus on the lower base price level, which should positively influence response to PP. Attribution theory could provide a useful theoretical framework for an examination of these considerations.

In addition, the different dimensions of dividing and presenting PP information might interact with characteristics of the buyer and seller involved. For example, the effect of the number of price components could differ depending on the perceived motive of the seller to apply PP. Consumers might infer positive motives as a result

of buyers' general attitude toward PP or seller characteristics, such as a good reputation or a credible justification to impose surcharges. In such cases, a greater number of components could increase price transparency perceptions as it discloses more information about the cost-benefit breakdown of a product. This, in turn, could enhance fairness perceptions and stimulate demand. However, consumers might also infer negative motives to apply PP, such as the intention to shroud an offering's total cost. In such cases, the effect of partitioning into a larger number of price components on perceived fairness via perceived transparency could turn negative and, as a consequence, decrease purchase intentions.

Finally, characteristics of the purchase situation might interact with PP approaches. Here, promising areas include the examination of how the effectiveness of PP differs depending on the availability and the presentation format of competitors' offerings. Prior research has found that price complexity of an offering relative to the complexity of other options negatively affects product choice, as consumers may infer higher prices from more complex prices (Carlson and Weathers 2008; Homburg et al. 2014). For PP, this implies that further research could examine how the effect of PP on product choice differs depending on the pricing approaches of other available offerings. A consumer might choose a simpler, all-inclusive price over a series of PP offerings with one surcharge. However, the same consumer might prefer a PP offering with one surcharge over an all-inclusive offering if other available options involve more complex PP approaches.

Overall, these three examples illustrate that a contingency theoretical perspective on PP that incorporates interaction effects of different dimensions along which sellers apply PP as well as characteristics of the buyer, seller, and purchase situation would allow new insights into boundary conditions of PP approaches.

4.2 Nonlinear versus linear effects

A further overarching avenue for PP research refers to the analysis of nonlinear versus linear effects. Prior research has mainly focused on linear relationships, implying that the size of the effect is proportional to the size of the cause. Exceptions include Morwitz et al. (1998), Frischmann et al. (2012), and Xia and Monroe (2004). Further research is undoubtedly still needed to understand the functional relationships between PP and consumers' responses. Fruitful areas for further research include examination of the effects of the number of price components, the surcharge-base price ratio and the presentation format on price perceptions. Little is known about the form of the relationship between the number of price components and perceived price transparency. One might argue that perceived price transparency increases up to a certain number of price components and decreases thereafter, because consumers tend to use heuristics rather than systematic processing once the number of price components exceeds the capacity to readily evaluate each of the components. In addition, and with focus on the ratio of base price and surcharge, one might speculate that the effect of a surcharge on price perception decreases progressively as the surcharge-base price ratio decreases.

Furthermore, regarding the presentation format and arithmetic of price components, it is possible that the positive effect of PP on perceived price starts at a minimum for simple surcharges (e.g., absolute amount, integral number), where consumers can calculate total cost correctly with little cognitive effort. The effect could then increase for medium complex surcharges (e.g., absolute number with digits, integral percentage figures), where consumers use heuristics (Morwitz et al. 1998), but decrease for overly complex surcharges (e.g., percentage figures with digits, hidden in the small print), where consumers get suspicious and pay greater attention to surcharge information. These three exemplary topics underscore the potential of further research on nonlinear effects of PP to provide more fine-grained and nuanced insights.

4.3 Delayed versus immediate effects

An examination of delayed versus immediate effects is an important issue for pricing research (e.g., Schulz et al. 2015) and represents a third major direction for further research on PP. Previous PP research has predominantly focused on immediate effects. Exceptions include Lee and Han (2002), who examined the effect of PP on brand attitude by contrasting brand attitude measures before and 1 week after they exposed participants to PP information. The vast majority of empirical research, however, includes experimental ‘single-shot’ studies. It is not yet clear whether the effects demonstrated in these studies would still occur after several purchase episodes. Examination of delayed effects of PP is particularly relevant for constructs that develop over time. Such constructs mainly fall beyond the scope of existing research and include, among others, trust and attitude toward the seller, repurchase intentions, satisfaction, customer loyalty, and word-of-mouth behavior. It would be worthwhile investigating how different approaches of PP or shifts between partitioned and combined pricing approaches over time affect consumers’ trust or attitude toward the seller. Situational characteristics, such as competitors’ use of PP, and buyer characteristics, such as pricing tactic persuasion knowledge (Hardesty et al. 2007) or skepticism toward surcharges (Schindler et al. 2005), might moderate these relationships. In addition, one might argue that if consumers realize that they underestimated total cost of PP offerings this negatively affects post-purchase satisfaction, loyalty, or repurchase intentions. Such investigations would help managers weigh short- versus long-term effects of PP and decide when and how to use PP. After all, the risk of losing a dissatisfied customer for future purchases might outweigh the benefits of enhanced price perception in a single purchase encounter.

Another promising research field relates to the influence of PP on the construction of reference prices. Exemplary questions are: Do consumers use the base price or the total costs of an offering to form reference prices? If consumers use the base price for generating the reference price in a product category, how do

frequent changes in price arithmetic over time and/or across sellers impact consumers' price comparisons and offer evaluations? Furthermore, as the effect of PP on underestimating total cost is stronger when consumers need to recall price information from memory (Kim 2006): How do consumers recall PP information when price components are spatiotemporally separated? How does this approach affect the construction of reference prices? Future studies could tackle these questions to contribute to the understanding of delayed effects of PP on consumer response. Learning theory may provide the theoretical basis for these investigations. Finally, research could examine the two distinct roles (i.e., informational and sacrifice effect) of price (e.g., Voelckner 2008) in the context of immediate versus delayed effects. Confronting consumers with multiple price components (i.e., sacrifices) has an immediate influence on a price's sacrifice effect in a purchase situation (Voelckner et al. 2012). However, one could argue that PP has an immediate effect on the informational effect of price (e.g., by allowing a more precise evaluation of an offering's quality) as well as a delayed effect that develops over time (e.g., by affecting the construction of reference prices).

4.4 Effects of PP on competitors

In addition to the effects of PP on consumer response, future research should examine how PP affects competitors' reactions. Pricing surcharges separately can make prices appear more competitive and can position products more favorably than rival offerings. In addition, PP can act as a communication tool to express that certain price components of an offering do not contribute to the profit of the firm and are handed on to other parties involved (e.g., shipping fees to logistics service providers). Thus, PP can help firms prevent being blamed for particular components as it helps shift attributions of responsibility for these surcharges to a third-party. In addition, PP can signalize to customers—and competitors—that a seller is embedded in a network of service providers (e.g., logistics services, financial services providers, maintenance service providers). Finally, PP can make prices seem more transparent as it allows a more detailed understanding of the cost-benefit breakdown of an offering. This information may be of particular value for competing firms in a market since it allows them to make inferences about the value propositions of competitors.

The effects of PP on competitors might depend on situational characteristics, such as market structure and industry norms. For example, in markets with no or little product differentiation it is easier for consumers to compare offerings, and firms might therefore be forced to mimic each other. In such markets, the extent to which firms use PP or switch between pricing approaches might be constricted or, when applied, provoke stronger competitor reactions. However, when firms compete with highly differentiated products, such as in monopolistic competition, price levels and pricing techniques will vary more widely and norms concerning

which surcharges are priced separately or not might not be as prevalent. In such markets, the effect of firms' use of different PP approaches on competitors might be limited. Future research might test our intuition on these issues to better explain the patterns of PP use in different markets. Finally, the three types of effects, as outlined for consumer response, also provide fruitful opportunities for further research on the effects of PP on competitor response.

5 Conclusion

PP has emerged as a widespread approach in different industries and has received increased attention in the academic literature. The purpose of this article was to advance the extant knowledge on PP by providing a definition of PP that integrates key characteristics of the concept, by discussing its theoretical foundations, and by summarizing and systemizing existing findings on PP to develop an organizing framework and directions for further research on PP. Based on a review of almost two decades of PP research from various academic disciplines, we proposed a definition of PP that builds upon key characteristics of the concept and the seeks to help resolve some of the ambiguities identified in prior research. In addition, we developed a framework that shows the effects of PP on cognitive, attitudinal, and behavioral reactions with regard to prices and offerings, and that illustrates the moderation effects of PP modalities and buyer, seller, and situational characteristics. While previous work has deepened and broadened the understanding of the PP concept, many important questions still exist and provide avenues for future studies. Hence, we outlined overarching directions for further research and encourage more research on PP that focuses on interaction versus main effects, nonlinear versus linear effects, and delayed versus immediate effects, and that examines the effects of PP on competitors. In summary, our article aims to provide impetus for future work on PP to fully understand this pricing tactic and its implications for the reactions of market actors.

Appendix

See Table 5.

Table 5 Empirical findings on performance implications of PP versus combined pricing

Source	Methodology	Sample size	Context(s)	Surcharge(s)	Outcome variable	Results for price formats		Implication
						Partitioned pricing	Combined pricing	
Albinsson et al. (2010)	Lab experiment with between-subjects design	n ₁ = 88 n ₂ = 79	MP3 player	Shipping and handling fee	Purchase intention	4.19 ^a Low CL	5.14 ^a Low CL	Reasonable surcharge Contra PP, but only for low construal level (CL) individuals**
						4.33 ^a High CL	4.0 ^a High CL	Unreasonable surcharge Contra PP, for both low and high construal level (CL) individuals**
Bambauer and Gierl (2008)	Lab experiment with between-subjects design	n = 175	(1) Mobile phone contract (2) Sauna entrance (3) Ticket sales (4) Accommodation (5) Car service	(1) Fee for minimum call units (2) Water park ticket (3) Advance sale charge (4) Visitor tax (5) Car oil	Overall product evaluation	3.54 ^a Low, absolute	4.11 ^a	Contra PP**
						3.54 ^a High, absolute		
						3.65 ^a Low, percentage		
						3.53 ^a High, percentage		
						4.41 ^a Low, absolute	3.47 ^a	Pro PP, except for high absolute surcharge**
					Evaluation of total price level	3.59 ^a High, absolute		
						4.67 ^a Low, percentage		
						4.38 ^a High, percentage		

Table 5 continued

Source	Methodology	Sample size	Context(s)	Surcharge(s)	Outcome variable	Results for price formats		Implication
						Partitioned pricing	Combined pricing	
Bambauer-Sachse and Mangold (2010)	Lab experiment with between-subjects design	n = 160	(1) Hotel	(1) Parking lot, visitor tax	Price attractiveness	3.51 ^a Low, absolute	2.97 ^a	Contra PP, except for high absolute surcharge**
			(2) Airline ticket	(2) Fuel charge, airport tax	Perceived complexity of price structure	2.99 ^a High, absolute		
					Belief about marketer's manipulative intent	3.77 ^a Low, percentage		
						5.11 ^a High, percentage		
						3.05 ^a Low, absolute	3.03 ^a	Contra PP, except for low absolute surcharge*
						3.39 ^a High, absolute		
						3.60 ^a Low, percentage		
						4.50 ^a High, percentage		
						4.90 ^a Not responsible	4.49 ^a Not responsible	Pro PP, if marketer is perceived to be not responsible for surcharge**
						4.87 ^a Responsible	4.89 ^a Responsible	

Table 5 continued

Source	Methodology	Sample size	Context(s)	Surcharge(s)	Outcome variable	Results for price formats		Implication
						Partitioned pricing	Combined pricing	
Bertini and Wathieu (2008)	Online experiment with between-subjects design	n ₁ = 210	Airline ticket	Entertainment and meal service fee	Relative preference of offer	6.04 ^d	5.16 ^d	Pro PP, if perceived value of surcharge is positive**
						Positive	Positive	
						4.20 ^d	5.33 ^d	
						Negative	Negative	
					Relative attractiveness of offer	5.79 ^a	5.29 ^a	Contra PP, if perceived value of surcharge is negative**
						Positive	Positive	
						4.91 ^a	5.37 ^a	
						Negative	Negative	
		n ₂ = 85	Groceries	Delivery scheduling	Purchase probability	4.63 ^a	4.05 ^a	Pro PP, if perceived value of surcharge is positive**
						Positive	Positive	
						4.05 ^a	4.16 ^a	
						Negative	Negative	
Blanthorne and Roberts (2015)	Lab experiment with between-subjects design	n = 208	Refrigerator	Sales tax	Recalled total price	\$741.25	\$717.34	Pro PP
Burman and Biswas (2007)	Lab experiment with between-subjects design	n ₁ = 81	Airline ticket	Tax and processing fee	Perceived offer value	4.41 ^a	3.55 ^a	Reasonable surcharge Pro PP, for individuals with high need for cognition (NFC)***
						High	High	
						NFC	NFC	
						3.57 ^a	3.64 ^a	
						NFC	NFC	
						4.30 ^a	2.835 ^a	
						NFC	High	
						3.19 ^a	NFC	
						NFC	3.28 ^a	Low NFC

Table 5 continued

Source	Methodology	Sample size	Context(s)	Surcharge(s)	Outcome variable	Results for price formats		Implication
						Partitioned pricing	Combined pricing	
Chakravarti et al. (2002)	Lab experiment with between-subjects design	$n_1 = 444$ $n_2 = 512$	Refrigerator	Iceemaker, service warranty	Choice likelihood	3.29 ^a High NFC	4.17 ^a High NFC	Unreasonable surcharge
						3.53 ^a Low NFC	3.31 ^a Low NFC	
						3.00 ^a High NFC	4.47 ^a High NFC	Pro PP***, effect stronger if consumption-related accessories (CRA) versus performance related features (PRF) are partitioned
						3.27 ^a Low NFC	2.93 ^a Low NFC	
					Choice	61.5 ^c Overall partitioned	43.4 ^c	
					Choice	66.2 ^c CRA partitioned	56.7 ^c PRF partitioned	
					Choice	66.4 % Overall	39.2 %	
					Choice likelihood	71.7 % CRA partitioned		
					Choice likelihood	61.1 % PRF partitioned		
					Choice likelihood	61.6 ^c Overall	46.7 ^c	Pro PP***, effect stronger if base price is favorable (i.e., lower relative to a comparison offer)
					Choice likelihood	64.9 ^c Favorable base price		
					Choice likelihood	58.2 ^c Unfavorable base price		

Table 5 continued

Source	Methodology	Sample size	Context(s)	Surcharge(s)	Outcome variable	Results for price formats		Implication
						Partitioned pricing	Combined pricing	
					Choice	66.1 % Overall	43.6 ^c	
						72.7 % Favorable base price		
						59.3 % Unfavorable base price		
Chandran and Morwitz (2006)	Lab experiment with between-subjects design	n = 71	Used book	Shipping fee	Purchase intention	4.34 ^a	5.41 ^a	Contra PP**
Chatterjee (2010)	Lab experiment with between-subjects design	n = 331	Computer equipment	Shipping fee	Purchase intention	3.9 ^a Low fee 2.0 ^a High fee	4.8 ^a Low fee 4.2 ^a High fee	Contra PP**, for both low and high shipping fee
Chatterjee and McGinnis (2010)	Lab experiment with between-subjects design	n = 324	Digital camera	Shipping fee	Perceived fairness	3.4 ^a	5.9 ^a	Contra PP**
Cheema (2008)	Lab experiment with between-subjects design	n = 140	Cell phone service	Surcharges, tax, cost recovery fee	Likelihood of signing up	3.29 ^a Low-reputation	4.46 ^a Low-reputation 5.26 ^a High-reputation	Contra PP, if buying from low-reputation sellers***

Table 5 continued

Source	Methodology	Sample size	Context(s)	Surcharge(s)	Outcome variable	Results for price formats		Implication
						Partitioned pricing	Combined pricing	
Chetty et al. (2009)	Field experiment in grocery store	n = 750	Personal care products	Sales tax	Demand per category	29 units per week	26.8 units per week	Pro PP***
Feldman and Ruffle (2015)	Lab experiment with between-subjects design	n = 150	Junk food, school supplies, hygiene products	Sales tax	Quantity of goods purchased per shopping round Final expenditure per shopping round	10.77 Tax-exclusive	8.21 Tax-inclusive	Pro PP***
Hayashi et al. (2013)	Lab experiment with between-subjects design	n = 150	Labor supply	Income tax	Work rate	.547 Low wage plus bonus .867 High wage minus flat tax .800 High wage minus progressive tax	NIS22.65 Tax-exclusive NIS17.50 Tax-inclusive .827 All-inclusive wage	Pro PP*** Contra PP, if low base wage plus bonus (i.e., positive price component)***

Table 5 continued

Source	Methodology	Sample size	Context(s)	Surcharge(s)	Outcome variable	Results for price formats		Implication
						Partitioned pricing	Combined pricing	
Kachersky and Kim (2011)	Lab experiment with between-subjects design	n = 167	MP3 player	Shipping fee	Share of participants choosing combined offer	57 % CP belief, familiar	43 % CP bf, fam 44 % PP bf, fam 55 % CP bf, unfam 28 % PP bf, unfam.	Contra PP, if product unfamiliar and PP believed as having greater persuasive intent than combined pricing (CP)**
						56 % PP belief, familiar		
						45 % CP belief, unfamiliar		
						72 % PP belief, unfamiliar		
					Share of participants choosing combined offer	33 % CP belief, fair	69 % CP belief, fair	Contra PP, if surcharge believed as unfair**, contra (pro) PP, if surcharge believed as fair
						63 % PP belief, fair	37 % PP belief, fair	and PP (CP) believed as having greater persuasive intent**
						69 % CP belief, unfair	31 % CP belief, unfair	
						63 % PP belief, unfair	37 % PP belief, unfair	

Table 5 continued

Source	Methodology	Sample size	Context(s)	Surcharge(s)	Outcome variable	Results for price formats		Implication
						Partitioned pricing	Combined pricing	
Kim (2006)	Lab experiment with between-subjects design	n = 133	Phone	Shipping fee	Recalled total cost	\$80.04 Absolute, salient \$72.90 Absolute, non-salient \$72.63 Percentage, salient \$71.35 pct, non-salient	\$81.72	Pro PP, except if surcharge is salient and with absolute amount***
Lee and Han (2002)	Lab experiment with mixed-model design	n = 141	Computer, hifi system	Delivery and installation	Difference between recalled and real total price	4.56 ^b Absolute, salient 6.15 ^b Absolute, non-salient 6.12 ^b Percentage, salient 6.23 ^b pct, non-salient	5.38 ^b	Pro PP, except if surcharge is salient and with absolute amount**
						7.58 %	2.75 %	Pro PP***

Table 5 continued

Source	Methodology	Sample size	Context(s)	Surcharge(s)	Outcome variable	Results for price formats		Implication			
						Partitioned pricing	Combined pricing				
Lee et al. (2014)	Lab experiment with between-subjects design	n ₁ = 101	Furniture	Handling and delivery fee	Attitude toward brand	4.05 ^a Overall	4.40 ^a Overall	Contra PP, effect stronger for external attribution of wrongly recalled total price***			
						3.76 ^a External attribution	4.38 ^a Ext. att				
						4.22 ^a Internal attribution	4.31 ^a Int. att.				
						3.81 ^a	4.17 ^a				
						5.55 ^a Promotion focus	3.96 ^a Pro. focus		Pro PP, if individuals are promotion-focused**		
						4.72 ^a Prevention focus	4.94 ^a Pre. focus				
									4.44 ^a Promotion focus	3.43 ^a Pro. focus	
									4.57 ^a Prevention focus	4.30 ^a Pre. focus	
									5.31 ^a Promotion focus	4.29 ^a Pro. focus	
									4.50 ^a Prevention focus	4.30 ^a Pre. focus	
		5.23 ^a Promotion focus	4.39 ^a Pro. focus								
		4.50 ^a Prevention focus	4.07 ^a Pre. focus								
		n ₂ = 126	Airline ticket	Tax and other surcharges	Attractiveness of offer						

Table 5 continued

Source	Methodology	Sample size	Context(s)	Surcharge(s)	Outcome variable	Results for price formats		Implication
						Partitioned pricing	Combined pricing	
Lynn and Wang (2013)	Online experiment with between-subjects design	n = 329	Restaurant menu	Service fee	Perceived expensiveness	3.55 ^a	4.10 ^a	Pro PP**
Morwitz et al. (1998)	Lab experiment with between-subjects design	n ₁ = 199	Jar of pennies	Buyer's premium	Expected service quality	4.55 ^a	4.01 ^a	Pro PP**
		n ₂ = 233	Phone	Shipping and hand-ling fee	Ratio of total price bid to perceived value	88.5 %	78.7 %	Pro PP**
					Recalled total cost	\$78.27 Overall \$75.43 Percentage	\$83.90	Pro PP, effect stronger for surcharge with percentage format**
Reppetti et al. (2015)	Lab experiment with within-subjects design	n = 353	Hotel stay	Resort fee	Choice	\$80.36 Absolute 33 %	67 %	Contra PP
Schindler et al. (2005)	Lab experiment with between-subjects design	n = 189	Lamp	Shipping fee	Liking of the offer	1.36 ^c Skeptics 2.68 ^c Non-skeptics	1.97 ^c Skeptics 2.01 ^c Non-skeptics	If external reference price is available: Pro PP for non-skeptics** ^c ; contra PP for skeptics** ^c

Table 5 continued

Source	Methodology	Sample size	Context(s)	Surcharge(s)	Outcome variable	Results for price formats		Implication
						Partitioned pricing	Combined pricing	
Sheng et al. (2007)	Lab experiment with mixed-model design	n ₁ = 82	CD Walkman	Shipping and handling fee	Purchase intention	3.80 ^a 10 % Surcharge	3.43 ^a 10 % s	Pro PP, if surcharge 10 % of base price***
						3.32 ^a 30 % Surcharge	3.05 ^a 30 % s	Contra PP, if surcharge 50 % of base price**
						2.32 ^a 50 % Surcharge	2.49 ^a 50 % s.	
		n ₂ = 104	Digital watch	Express shipping and handling fee	Purchase intention	3.02 ^a Surcharge < BP	2.93 ^a s. < BP	Contra PP, if surcharge greater than base price (BP)****
						2.48 ^a Surcharge > BP	3.20 ^a s. > BP	
		n ₃ = 77	Laptop	Shipping and handling fee	Purchase intention	4.81 ^a fair surcharge	4.37 ^a Fair	Pro PP, if fair surcharge**
						3.95 ^a unfair surcharge	4.51 ^a Unfair surcharge**	Contra PP, if unfair surcharge**
Voelckner et al. (2012)	Online experiment with between-subjects design	n = 358	Wine	Shipping, transportation insurance	Effect of price	-.062 ^f Total effect	-.101 ^f Total	Pro PP for total and informational effect**
						.207 ^f Informational effect	.111 ^f Informational	Contra PP for sacrifice effect**
						-.269 ^f Sacrifice effect	Sacrifice	

Table 5 continued

Source	Methodology	Sample size	Context(s)	Surcharge(s)	Outcome variable	Results for price formats		Implication
						Partitioned pricing	Combined pricing	
Wang and Lynn (2015)	Online experiment with between-subjects design	n ₁ = 149	Restaurant menu	Service fee	Deal evaluation	4.57 ^a Percentage 12 %	3.92 ^a Built-in 12 % service fee	Pro PP, if low (12 %) percentage surcharge***
		n ₂ = 170		4.24 ^a Dollar 12 %	4.05 ^a Percentage 18 %	4.47 ^a Built-in 18 % service fee	Contra PP, if high (18 %) percentage surcharge**	
Xia and Monroe (2004)	Lab experiment with between-subjects design	n ₁ = 156	Computer	Shipping fee, sales tax	Purchase intention	4.6 ^a Overall	3.5 ^a	Pro PP, effect stronger for surcharge with percentage format***
				Price satisfaction	4.1 ^a Absolute	4.3 ^a	Pro PP**	
				Perceived value	4.3 ^a Overall	3.9 ^a	Pro PP, if surcharge with small magnitude**	
						4.0 ^a Large magnitude		
						4.5 ^a Small magnitude		

Table 5 continued

Source	Methodology	Sample size	Context(s)	Surcharge(s)	Outcome variable	Results for price formats		Implication
						Partitioned pricing	Combined pricing	
n ₂ = 140					Search intentions	5.4 ^a	6.0 ^a	Pro PP**
					Purchase intention	4.4 ^a One surcharge 3.8 ^a Two surcharges	3.5 ^a	Pro PP, effect stronger for one surcharge**
n ₃ = 236				Shipping fee	Store trustworthiness	5.3 ^a	4.4 ^a	Pro PP**

, *, and *** represent statistical significance at the 10, 5, and 1 % levels, respectively

^a Seven-point scale, ^b nine-point scale, ^c five-point scale, ^d eight-point scale, ^e 0–100 points scale, ^f mean coefficient

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