Journal of Business Research 65 (2012) 106–116

Contents lists available at ScienceDirect

Journal of Business Research

Consumer responses to price discrimination: Discriminating bases, inequality status, and information disclosure timing influences☆

Chi-Cheng Wu [a], Yi-Fen Liu [b,*], Ying-Ju Chen [c], Chih-Jen Wang [d]

[a] National Sun Yat-Sen University, Department of Business Management, 70 Lianhai Road, Kaohsiung 804, Taiwan
[b] Tainan University of Technology, Department of Business Administration, 529 Jhongjheng Road, Yongkang Dist., Tainan City 710, Taiwan
[c] University of California at Berkeley, Department of Industrial Engineering & Operations Research, 4121 Etcheverry Hall, Berkeley, CA 94720–1777, United States
[d] Cheng Shiu University, Department of Business administration, 840 Chengcing Rd., Niaosong Dist., Kaohsiung City 83347, Taiwan

ARTICLE INFO

Article history:
Received 1 June 2010
Received in revised form 1 December 2010
Accepted 1 February 2011
Available online 7 April 2011

Keywords:
Information disclosure
Justice
Price discrimination
Transaction utility

ABSTRACT

This study broadly explores consumers' perceived unfairness, negative emotions, internal reference price, and store choice under five common methods of price discrimination using two experimental studies. Study 1 investigates the interaction between discriminating bases and inequality status. Results reveal that discriminating bases only influence perceived unfairness for advantaged consumers, but affect all four responses for disadvantaged consumers. For disadvantaged consumers, direct discrimination that complies with social norms evokes the weakest unfavorable responses, whereas direct discrimination against social norms triggers the highest perception of unfairness and negative emotions but has similar effects on internal reference price and store choice to indirect discrimination. Study 2 examines the effect of information disclosure timing by comparing pre- and post-purchase disclosure policies. Results show that post-purchase disclosure of discrimination information elicits higher negative emotions for indirect discrimination involving coupon and purchase quantity, but is rather inconsequential for direct discrimination or indirect discrimination through membership.

1. Introduction

Price discrimination is the strategy of varying prices over time, across consumers, or across circumstances, and has been a common practice in both services and physical goods industries for a long time (Elmaghraby and Keskinocak, 2003). With the advances in internet technology, price discrimination has become increasingly popular and flexible (Haws and Bearden, 2006). The central idea of price discrimination is to maximize the seller's profit by exploiting consumer heterogeneity in willingness to pay. However, price discrimination may produce unfavorable customer responses that may significantly diminish the seller's profit (Anderson and Simester, 2008). Therefore, this study explores consumers' adverse responses to price discrimination. Scholars broadly distinguish between posted price discrimination (i.e., firms set prices and consumers choose to "take-it-or-leave-it") and participative price discrimination (such as auctions and pay-what-you-want, in which buyers determine prices) (Elmaghraby and Keskinocak, 2003; Kim et al., 2009). This study focuses on posted price discrimination (price discrimination hereafter), as participative price discrimination is more acceptable to consumers due to their control over prices (Haws and Bearden, 2006; Kim et al., 2009).

Although economics, marketing, and operations researchers have extensively discussed price discrimination (e.g., Armstrong, 2006; Elmaghraby and Keskinocak, 2003; Farias and Van Roy, 2010), they typically model consumer responses as a hypothetic input variable in prescribing normative pricing. Only recently have behavioral researchers examined the potential effects of price discrimination on consumers (e.g., Darke and Dahl, 2003; Heyman and Mellers, 2008; Xia et al., 2004). However, most of these studies merely investigate consumer perception of price (un)fairness and neglect other important reactions (see Garbarino and Maxwell, 2010 and Grewal et al., 2004 for a few exceptions). Information about a firm's ability to offer a lower price certainly alters consumers' internal reference price. In addition to cognition, emotions play a critical role in decision making, especially in the face of unfavorable pricing treatment (Campbell, 2007). The prices available to a consumer and the prices made available to others both affect the consumer's store choice (Feinberg et al., 2002). This reason is why disadvantaged and advantaged consumers may have different preferences for stores that apply different pricing policies.

☆ The authors gratefully acknowledge the financial support provided by the National Science Council (NSC 96-2416-H-110-011-MY2) and the College of Management, National Sun Yat-Sen University, Taiwan (CMNSYSU-SRS-2009-01). The authors also thank I-Ling Ling, National Chiayi University, Chun-Ming Yang, Ming Chung University, Stacy Deng, and Tianhu Deng for their comments on an earlier draft of this paper.
* Corresponding author. Tel.: +886 6 2532106x5232; fax: +886 6 2421522.
E-mail addresses: chicheng@mail.nsysu.edu.tw (C.-C. Wu), tj0002@mail.tut.edu.tw (Y.-F. Liu), chen@ieor.berkeley.edu (Y.-J. Chen), jiren@csu.edu.tw (C.-J. Wang).

0148-2963/$ – see front matter © 2011 Elsevier Inc. All rights reserved.
doi:10.1016/j.jbusres.2011.02.005

Prior research largely focuses on purchase-frequency-based and purchase-time-based price discrimination and pays relatively little attention to other common discriminating bases. Anecdotal evidence shows that despite shared premises and goals, different forms of price discrimination may yield radically different consumer responses. For example, Coca-Cola once made vending machines automatically raise the prices in hot weather. When Coca-Cola first introduced this policy in 1999, many marketing experts believed that this strategy was a smart move resembling the peak-hour pricing concept widely adopted in mass transportation and energy markets. However, this policy turned out to be a disaster, with unexpected unfavorable market responses. In contrast, peak/off-peak pricing in mass transportation systems such as Long Island Rail Road in New York and Metro Rail in Washington DC have significantly increased revenue for decades.

Another factor possibly affecting consumer responses is the timing to disclose the price discrimination information. Supermarkets such as Safeway and Whole Foods Market typically provide discounts to their members on various items. Some supermarkets mark membership prices right on the retail shelves, whereas others charge discounted prices only when consumers show their member cards to the cashiers. Similarly, airline companies adopt sophisticated dynamic pricing schemes that change ticket prices hourly. In this case, consumers only know whether or not they overpaid for their tickets if they chat with other passengers after the fact. Thus, information disclosure timing crucially affects consumer acceptance of the pricing policies and constitutes an important strategic decision for sellers (Heyman and Mellers, 2008).

In the face of the aforementioned issues, this study provides a unified framework to explain how different discriminating bases, inequality status, and information disclosure timing affect consumers' unfairness perceptions, negative emotions, internal reference price, and store choice in advantaged and disadvantaged consumers. This study first develops a series of hypotheses based on social justice theory and transaction utility theory. The central argument of this study is that a consumer confronted with price discrimination evaluates both prices: the one offered to the consumer and the one offered to others. A consumer cares not only about distributive justice in terms of equality rule, need rule, and transaction utility, but also about procedural justice regarding whether having the freedom to choose to be advantaged or disadvantaged. This study then tests these hypotheses through two experimental studies. Study 1 explores the roles of discriminating bases and inequality status. Results show, for advantaged consumers, discriminating bases only influence the perception of unfairness. For disadvantaged consumers, however, discriminating bases affect all four responses in different ways. Study 2 examines the effects of information disclosure timing. Results show that compared with pre-purchase disclosure, the post-purchase disclosure of discrimination information elicits higher negative emotions for certain types of discriminating bases.

2. Theoretical foundation

2.1. Discriminating bases

From a managerial perspective, Png and Lehman (2007) classify price discrimination into three categories: complete discrimination, direct segmentation, and indirect segmentation. In complete discrimination, consumers purchase up to the point where their marginal benefit equals the marginal cost of the item. In direct segmentation, the seller charges different prices based on consumers' physical or social attributes. In indirect segmentation, the seller identifies consumers using some instruments that can be manipulated.

Advances in Internet technology have simplified the implementation of complete price discrimination. Online retailers can trace the behavior of almost every consumer (Garbarino and Lee, 2003). However, fully capturing the actual willingness to pay of every consumer remains idealistic, and is virtually impossible in the conventional brick-and-mortar context. Thus, in the contemporary practice of price discrimination, sellers must rely on observable consumer attributes. For example, some direct discrimination policies are based on consumer attributes complying with widely accepted social norms (e.g., age and disability). Other discrimination policies are based on attributes that go against socially accepted norms (e.g., residence and occupation).

Some types of indirect price discrimination offer lower prices to consumers who spend time searching or waiting for price reductions (e.g., coupons, time- or quantity-limited special sales), while others discriminate consumers by whether they have paid a fixed fee in advance (e.g., membership discount) or have accumulated a specific amount of spending (e.g., quantity discount) to show their loyalty to the seller. Based on the above observations, this study scrutinizes five common forms of price discrimination: direct discrimination complying with social norms, direct discrimination against social norms, time-effort indirect discrimination, money-effort indirect discrimination through membership, and money-effort indirect discrimination by quantity discount.

2.2. Price discrimination, justice, and transaction utility

The perception of price fairness is essentially a process of social comparison (Bolton et al., 2003; Darke and Dahl, 2003). Social comparison research proposes that observable similarities between two comparison entities induce people to selectively access information that supports those similarities (Mussweiler, 2003). Without explicit explanations, consumers generally think they are similar to other consumers buying the same item, and thus should pay equal prices. As a result, consumers likely regard interpersonal price disparity as unfair (Haws and Bearden, 2006; Xia et al., 2004).

However, interpersonal price disparity may seem less unfair when the pricing policy in question is a norm in the industry or society (Heyman and Mellers, 2008; Garbarino and Maxwell, 2010; Grewal et al., 2004) or when consumers can choose to be advantaged or disadvantaged (Kannan and Kopalle, 2001). Studies on price increase suggest that consumers consider price increases to be less unfair when they infer that the firm has a positive motive (Campbell, 2007). This scenario implies that interpersonal price disparity becomes more acceptable if consumers believe that the firm has a benevolent motive. The authors of this article suggest social justice theory and transaction utility theory (TUT) provide theoretical roots for the above phenomena.

Social justice literature asserts that people confronted with conflict situations are not only concerned with distributive justice, but also procedural justice (Folger, 1977; Greenberg, 1987). Outcomes, rather than procedures, generally have a greater effect on overall justice judgments (Lerner and Whitehead, 1980; Rutte and Messick, 1995). Related research proposes several principles of distributive justice. Equity and need rules are particularly important in the context of price discrimination. The equity rule states that people judge an outcome of themselves as fair if the ratios of their own output/input equal that of others (Adams, 1965), while the need principle asserts that outcomes should be distributed among parties according to their needs.

Meanwhile, people judge whether the outcome results from a fair procedure according to some criteria, such as the rules used for making the outcome are transparent and consistent, they have some control over the outcome-making, they have chances to voice their opinions, the outcome-maker provides reasonable explanations for the outcome, and/or the outcome-maker treats them