

# The competitive impact of service process improvement: Examining customers' waiting experiences in retail markets

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## Abstract

In this paper, we investigate the impact of a service process improvement in front-end retail operations on the waiting experiences of shared customers, that is, those customers who patronize a retailer as well as its competitors. Our findings from two studies—a field study and a controlled laboratory experiment—suggest that while customers' waiting time perceptions are *independent* across competing firms, their waiting time satisfaction is *interdependent*. As a result, the impact of a retailer's service improvement initiative that reduces waiting times is not merely local to the retailer but propagates to its competitors through its shared customers. Specifically, such an improvement not only raises shared customers' satisfaction with the focal retailer, it also *concurrently* lowers their satisfaction with the retailer's competitors. By implication, current approaches that assess the impact of a service process improvement by just measuring the difference in customer satisfaction before and after the improvement may be underestimating the true impact of such improvements.

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**Keywords:** Queues; Waiting time; Service improvement; Retail competition; Satisfaction

## Introduction

The duration of the waiting time at checkout is one of the key service attributes on which retailers compete with one another (Casey 2004). Customers often rate waiting as the single biggest complaint about retail encounters (Litwak 2003), and consider it as an important factor when deciding where to shop (Doyle 2003).<sup>1</sup> In an effort to better manage their customer's wait, retailers, including supermarkets, home-improvement stores, and pharmacies are focusing on convenience, and investing significant resources in-process improvements and technology, such as redesigned service lines, self-checkouts, pagers, self-scanners, remote-ordering terminals, and other "queue busting" devices (Higgins 2004; New-Fielding 2002; Wilbert 2003).

These investments are based on the assumption that a better management of the waiting process will improve customer

perceptions of service quality (Berry, Seiders, & Grewal 2002; Bitner, Booms, & Tetreault 1990; Brady & Cronin 2001), increase satisfaction levels, and strengthen the competitive position of the retailer (Zeithaml, Berry & Parasuraman 1990). However, we need to answer several questions before we can assess the overall competitive impact of such process improvements and make informed go-no-go decisions (Rust, Zahorik, & Keiningham 1995). First, is the impact of a process improvement local to the retailer or does it also propagate to affect customers' service experiences at its competitors? Second, does an improvement by one retailer change customer perceptions of the waiting time at its competitors? And third, is the impact on waiting time perception the same as that on waiting time satisfaction?

Current research on the efficacy of quality improvement initiatives provides only partial answers to these questions. It focuses largely on whether or not the adoption of the initiative results in changes in the satisfaction or quality ratings of the firm's own customers (Bolton & Drew 1991; Simester, Hauser, Wernerfelt, & Rust 2000). It does not explore whether the initiative also influences customers' experiences with the firm's competitors. Related research on the impact of multiple reference points does examine how competitive

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<sup>1</sup> Waiting time, with an importance rating of 83 on a 100-point scale, was 12th among 44 product and service attributes that consumers look for in supermarkets, in the 70th annual report of the grocery industry (Doyle 2003).

expectations or foregone alternatives influence customers' post-purchase evaluations (Boulding, Kalra, Staelin, & Zeithaml 1993; Inman, Dyer, & Jia 1997). However, it does not explore the impact of process changes on customers' service experiences.

In this paper, we combine the foci on the longitudinal aspects of post-purchase evaluation and on multiple expectations to examine the customer-based impact of a service process improvement. We report results from two related studies—a field study and a controlled experiment—designed to evaluate the impact of competition on waiting time perception and satisfaction. We conclude with a discussion of our findings and their managerial implications.

### Literature and hypotheses

The adverse impact of waiting on customers' retail experiences is well known (Doyle 2003). While efforts to manage these waits initially focused on increasing throughput rates and optimizing labor deployment, retailers are increasingly adopting a more customer-centric view of service-lines and are using technology and process design to improve customers' overall waiting experiences (Fitzsimmons & Fitzsimmons 2004).

Two somewhat related issues are relevant for a customer-centric approach towards the design of service lines. The first is the relationship between customers' subjective perceptions of time and clock time, because it is the former that determines waiting time dissatisfaction (Hornik 1984). The literature on the psychophysics of time finds that while time perceptions are linearly related to clock time, they are influenced by several non-temporal factors including the level of enjoyment, spatial themes such as queue length, or individual characteristics such as gender (Antonides, Verhoef, & van Aalst 2002; Cottle 1976; Hill & Juster 1980).

The second is the relationship between waiting time perception and the overall waiting experience (Taylor 1994). Previous research on this issue suggests that if customers cannot observe the queue ahead, then they accumulate stress that increases from the beginning of the wait until the end (Osuna 1985). The dissatisfaction arising from this stress can however be mitigated by frequently updating customers about the remaining waiting time (Hui & Zhou 1996). On the other hand, if customers can observe the queue, then satisfaction generally increases from the beginning of the wait until the end (Kumar, Kalwani, & Dada 1997). This increase results from the customer's ability to observe the service times for others who are ahead and a reduction in the uncertainty surrounding her likely waiting time.

#### *The impact of competition on the waiting experience*

We are interested in examining how a customer's waiting time expectation at a focal retail firm and its referent competitor *jointly* affects her waiting time satisfaction in a retail

environment where she can observe the queue. We, therefore, develop our hypothesis based on an extension of the Kumar et al. (1997) utility-theoretic model of waiting time satisfaction that accommodates the impact of competition by incorporating the differential roles of *will* and *should* expectations. A *will* expectation is a prediction about the level of performance that one is likely to receive, whereas a *should* expectation is a normative expectation, based in part on superior competitive offerings, about what the performance ought to be (Boulding et al. 1993). While the Kumar et al. (1997) model extension is proposed for capturing the competitive impact of time guarantees, we re-interpret it by assuming that, much like a waiting time guarantee, a superior waiting time at a retail firm sets *should* expectations for the customers' wait at its competitors.

For clarity in developing our hypotheses, we assume the disconfirmation between the actual duration of a customer's wait at the focal retail firm and her a-priori expectation to be zero. Now, if we hold the customer's expected waiting time at the referent competitor fixed, then longer expected waiting time at the focal firm should have an adverse impact on the customer's *will* expectations and lower her satisfaction. Conversely, shorter expected waiting time at the focal firm should increase her satisfaction. Therefore we hypothesize that:

**H<sub>1</sub>.** For a given expected waiting time at the competitor, waiting time satisfaction will be higher for customers who expect the duration of the wait at the focal retailer to be shorter than for customers who expect the duration of the wait at the focal retailer to be longer.

For developing the next hypothesis, consider a base case where the customer's expected waiting times at the focal retailer ( $T_f$ ) is equal to that at its referent competitor ( $T_c$ ). If the duration of these waits is reasonable, then the customers' *will* expectation at the focal retailer will be the same as her *should* expectation set on the basis of the expected waiting time at the competitor. Next, consider a case where  $T_c < T_f$ . Now, the *should* expectation at the focal retailer will be shorter than that in the base case. Consequently, the customers' satisfaction with her wait at the focal retailer will be lower than that in the base case.

Contrast this with the case where  $T_c > T_f$ . Boulding et al. (1993) find that *should* expectations are generally superior to *will* expectations. Therefore, for this case, the expected duration at the focal service provider will itself serve as the *should* expectation, because it is superior to the expected wait at the competitor. This is analogous to the base case, where the *will* and *should* expectations were equal. Consequently, the waiting time satisfaction at the focal firm will be the same as that in the base case. Therefore, we hypothesize that:

**H<sub>2</sub>.** Waiting time satisfaction will be lower for customers who expect the wait at the focal retailer to be longer than that at a competing retailer, than for customers who expect the

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