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# Waiting: integrating social and psychological perspectives in operations management

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## Abstract

Waiting time is an important issue in service operations management because of its impact on customer satisfaction and operations capabilities. This paper examines waiting time from a social and psychological perspective. It provides a conceptual framework which identifies social and psychological factors that affect perceptions of waiting. The conceptual framework enables service managers to rethink operational issues, such as layout design, process choices, and service delivery from customers' perceptions of waiting. Assimilation–contrast theory suggests that perceived waiting time be linked to expected waiting time and its gap leads to customers' overall evaluation of service. A customer's willingness to accept delay is related to the causes for delay as explained by attribution theory. Approaching waiting time from a stress management theory, this paper provides service managers with various stress-reduction mechanisms such as giving customers advance notice of expected waiting time, speeding up pre-process waiting time, and acknowledging customers' rights to quick service. These practical suggestions can aid service managers in reducing perceived waiting time, enhancing customers' waiting experience, and improving queue management. © 2000 Elsevier Science Ltd. All rights reserved.

*Keywords:* Perception of waiting; Queue management; Customer satisfaction; Assimilation–contrast theory; Attribution theory; Stress management

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## 1. Introduction

Waiting is an inescapable part of modern life. More than 70% of all service customers are concerned about waiting time [21]. Waiting not only causes inconvenience and reduces productivity, it also adds frustration and stress to people's daily lives. Sometimes, the sheer length of the waiting line discourages customers from

pursuing valuable services. At other times, waiting causes people to miss or delay important projects.

In today's competitive business environment, service quality and customer satisfaction are becoming increasingly important. Several studies documented that waiting contributes to customer dissatisfaction because individuals who found the waiting time unacceptable perceived the service as being of lower quality [3,15]. Researchers also found that waiting affects the mood of customers and their propensity to spend on repurchase in the future [14,21,40]. In addition, customer dissatisfaction hurts repeat business and generates

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negative word-of-mouth advertising, which in turn jeopardizes the company's long-term profitability and market sustainability. Researchers found that only very satisfied customers are likely to become loyal customers [17]. Thus, reducing waiting time is an important operations issue that carries strategic importance.

Waiting times can occur in both manufacturing and service operations. Waiting for popular toys to arrive in the stores before Christmas is an example of waiting for products. However, waiting and service delays are more common in service industries for the following reasons: (1) services are often produced, delivered, and consumed during an encounter between the customer and the service provider; (2) customer interaction with service providers involves great uncertainty which leads to service time that is highly variable; (3) services are intangible and cannot be inventoried; and (4) customer demand for services is highly variable and unknown.

Traditionally, waiting is analyzed from the perspective of operations research. Mathematical models are developed to determine the length of the waiting line and waiting time in order to best design facilities with respect to the appropriate number of lines and servers. However, the application of the results from mathematical models to real service operational settings is restricted because it does not take human factors into consideration. Calculating waiting time and waiting length solves only part of the problem. There are perceptions of waiting time, intrusion occurring during waiting, customers' interpretations of why they wait so long, and waiting environment that are not easily incorporated into modeling, but are of paramount importance in determining customers' satisfaction regarding waiting. Carmon et al. [2], for example, found that consideration of psychological costs could result in prescriptions that are inconsistent with the common wisdom of queuing theories derived according to the conventional approach. Therefore, this paper takes a significant departure from the traditional modeling approach by developing a new approach that shifts in the way we think of operations management. Particularly, this approach explores the behavioral and psychological aspects of waiting. Since waiting involves people, time, and environment, it is a social and psychological phenomenon. Understanding the psychological experience of waiting is vital to reducing the negative impact of waiting on customer satisfaction and perceived quality [12]. The purpose of this paper, therefore, is to examine the *perception of waiting* from social and psychological perspectives. It is a broad-brush review that intends to help service managers understand the complexity of waiting and its impact, which should influence the design and management of a service system.

This paper contributes to the literature of waiting

and service operations management in the following ways. First, this paper directly links waiting to psychology theories and concepts and develops ways to reduce customer dissatisfaction regarding waiting. In doing so, this research offers a unique way to look at the waiting issue other than the traditional modeling approach. Second, the paper also attempts to offer practical solutions anchored on a theoretical basis that can be used by service managers to influence a customer's perception of waiting. In that sense, it is useful and helpful for operations managers to have a better understanding of the issue in order to implement ways to improve the waiting situation. Third, the paper brings together bodies of existing literature and examines the psychological experience of waiting from an integrated perspective. The existing literature is filled with normative thinking, research findings, individual observations, anecdotal stories, and personal experience. Uniting these elements along with the conceptual framework better our understanding of this important research topic. Finally, managerial implications of each issue/factor identified in the paper are outlined and discussed.

The paper is organized as follows. The next section provides background information by way of reviewing the relevant literature in this area. Section 3 presents a conceptual framework to examine the waiting issue, traces the waiting issue to psychology theories and concepts, and offers potential solutions. The paper then discusses managerial implications. The paper ends with a conclusion.

## 2. Relevant literature

Recently, a number of researchers have studied the behavioral aspects of the waiting issue [4,5,7,8,12,23,25,28,30,31,38]. Several important issues emerge from the existing literature — perceptions of waiting, linking perceived waiting time to customer satisfaction, social justice, and goal attainment (field theory).

Maister is among the first in the field of operations management to depart from analytical modeling and approach waiting issues from a behavioral aspect [27]. He urged managers to pay attention to not only the actual wait times but also how these waiting times are perceived by customers. Katz et al. measured and tested customer perceptions of waiting under different conditions in a bank setting [23]. The study found that consumers tend to overestimate the amount of waiting time by an average of 1 min, but consumers perceive waits of 5 min or less as reasonable. Additionally, the study revealed that distractions (newsboard installation) do not significantly affect perceived waiting time and customer satisfaction, despite making the waiting

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