

A Comparative Study of Restaurant Customers' Waiting Time in a Quasi-experimental Setting

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유사실험설계에 의한 레스토랑 고객의 대기시간 비교연구

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Abstract

In recognition of the significance of waiting time in restaurant management, a quasi-experimental design was employed to measure the gap between actual and perceived waiting time in a real restaurant setting. In particular, this study focused on a comparison of Americans and Koreans to explore gender and culture differences in customer waiting behaviors. The results indicated that compared to American women, Korean women are more tolerant of waiting, and reported perceived waiting time as much longer than actual waiting time. However, there are no gender differences in both cultures. It is anticipated that managers will be able to adjust their operational strategies based on these results.

Key words: actual waiting time, perceived waiting time, culture difference, gender difference

I. Introduction

It has been proposed that waiting time in a restaurant is a significant factor affecting perceived service quality since most customers have perceived waiting time as a negative experience (Bienlen F · Demoulin N 2007). This effect is even more substantial because customers frequently overestimate waiting time due to the increased value of time in the demands of contemporary life (Durrande-Moreau A 1999). For this reason, numerous studies have investigated the effects of waiting time on customer satisfaction in restaurant

experiences (i.e., Noone BM et al. 2009; Lee W · Lambert CU 2000; Pruyn A · Smidts A 1998). These studies on the increasingly important issue of waiting time has been mainly divided into three areas: (1) the types of waiting time (Hwang J · Lambert CU 2005; Dubé-Rioux L et al. 1988; Hornik J 1984), (2) the study of methods of reducing waiting time (e.g., McDonnell J 2007; Cameron MA et al. 2003; Sasser WE et al. 1978), and (3) waiting time as a factor affecting perceived service quality (Lee W · Lambert CU 2000; Houston MB 1998; Pruyn A · Smidts A 1998).

In spite of these academic efforts toward wait-

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ing time, in reality, reducing actual waiting time requires a large investment in restaurant layout and in recruiting more employees to assist customers. Due to the difficulties of reducing actual waiting time, many scholars have focused on reducing perceived waiting time, which can improve the evaluation of service quality without operational investment (i.e., Cameron MA et al. 2003; Hui MK et al. 1997; Jones P · Peppiatt E 1996). However, previous studies have measured waiting time (i.e., actual and perceived waiting time) under a different experimental setting, or have employed a self-administrated survey depending on participants' memory to measure the two waiting times (e.g., Seawright KK · Sampson SE 2007; Katz KL et al. 1991).

Meanwhile, the globalization of the food service industry has progressed dramatically for restaurant chains. Yum!, which is one of the largest restaurant companies in the world with nearly 38,000 restaurants in over 110 countries, estimates that 70% of its profits will come from outside the U.S. within 10 years; additionally, 56% of McDonald's restaurants, the world's largest hamburger chain, are located outside the U.S. (Gibson R 2008). However, not all examples of international expansion have met with success. Papa John's Pizza, the third largest delivery pizza restaurant chain in the U.S., failed in its first overseas business in Mexico in 1998 (Gibson R 2008).

These examples indicate that understanding cultural differences in consumer behavior is a critical issue in international marketing (Kim DY et al. 2010; Mooij M 2005). In particular, it has been found that cultural differences lead to differences in consumer decision-making styles (Fan JX · Xiao JJ 1998) and valuation of choice (Iyengar SS · Lepper MR 2000), which are essential factors that

managers often consider in order to offer advanced service in the environment of the competitive restaurant industry. As another common segmentation variable in marketing, gender has been used in examining consumer behaviors such as services and products choice (e.g., Putrevu S 2001), and decision making (e.g., Kim DY et al. 2006). For this reason, this study posits that there are gender differences in customer waiting behaviors. Based on the recognition, this study examined the effect of cultural and gender differences in perceived waiting time with an experimental design because understanding culture and gender differences is fundamental to market segmentation. Research on culture and gender differences with respect to waiting time is assumed to improve customer satisfaction, which can allow managers to offer customized service.

II. Literature Review

1. Culture and gender differences in customer behavior

Among the five dimensions of national culture proposed by Hofstede GH (2001), it has been noted that individualism versus collectivism is the most important cultural dimension affecting customer behavior (Triandis HC 1990). Previous studies have found that compared to individualistic cultures including Northern European and Caucasian North American, people in collectivistic cultures including Asian, Mediterranean, and Latin American are more likely to interact at closer distances and tend to have higher levels of contact with their group (Remland MS et al. 1995). While individualists easily express their inner thoughts and feelings, individuals' opinion in a collectivist culture may not be encouraged due to the privilege

granted to the opinions of others in such cultures (Kim HS · Sherman DK 2007).

More specifically, in a multicultural consumer behavior study comparing Americans and Koreans, when Koreans show involuntary behavior on gift-giving occasion, they tend to buy prominent brands for people with whom they are not closely acquainted. In contrast, Americans have voluntary motivations in gift-giving behavior, their attitude toward the behavior was positive, and they tend to buy quality gifts instead of brand-name items (Park SY 1998).

This study assumes that similar cultural differences in consumer behavior may be seen in waiting areas in a restaurant setting because waiting behaviors have been dealt as psychological concept (Maister, 1985; Sampson · Seawright, 2007), and the concept is about one of representative customer behaviors affected by culture differences. For this reason, this study examines the customer waiting behaviors according to culture differences. Thus, the first research question is as follow:

Question 1: Does perceived waiting time vary depending on customers' culture?

In addition, from point of view of gender differences, the landmark gender difference research in cognition and social behavior by Maccoby EE · Jacklin CN (1974) found males tend to be more assertive, and aggressive, and less anxious than females though a gender difference in self-esteem was not found. Similarly, gender differences were found in decision making and the decision difficulty as well as appearance-related attitudes, and doing so showed different reaction to marketing stimuli (Beyon MJ et al. 2010). In addition, researchers who support the sociocultural model have proposed that men tend to be more aggressive

because social and cultural factors directly generate gender differences in personality (Feingold A 1994; Eagly AH · Wood W 1991).

With the assumption that gender differences in personality influence consumer behavior, a great deal of research on gender difference in consumer behavior has been conducted. Kim DY et al. (2006) found that women have positive attitudes towards web-site functionalities and scope of contents, and are also more involved in both online and print information searching behaviors. The gender differences in customer behavior were also seen in a restaurant ordering behavior; males ordered more calories than females at all of the restaurants examined (Yamamoto JA et al. 2005). According to a suggestion by Darley WK · Smith RE (1995), the use of gender for market segmentation provides increased profit due to the easy of access and identification. In the context, this study examines gender differences in measuring perceived waiting, and the second research question is as follow:

Question 2: Does perceived waiting time vary depending on customers' gender?

2. Perceived waiting time

While the actual waiting time measured by the clock is objective, perceived waiting time is subjective, and varies based on people's perception about judgment of the wait. For this reason, customer's satisfaction in any waiting situation is influenced not by actual waiting time but by perceived waiting time (Pruyn A · Smidts A 1998). Because of this, many studies have focused on how customers react to waiting time (Hui MK · Tse DK 1996; Dubé-Rioux L et al. 1989), on methods of reducing perceived waiting time when actual waiting times cannot be shortened due to

cost considerations (McDonnell J 2007; Yalch RF · Spangenberg ER 2000), and on the relationship between the perception of waiting time and service quality (Sarkar A et al. 2011; Lee W · Lambert CU 2000). However, few studies have examined the gap between actual and perceived waiting time in a real restaurant setting. Thus, the data from this study will offer operational marketing strategies.

3. The Proposed Research Framework

Based upon a recognition of the importance of measuring the gap between actual and perceived waiting time, this study will examine culture differences between two groups in perceived waiting time, identify gender differences in perceived waiting time, and examine attributes (party size, the friendliness among members, the degree of hunger, whether members had a later appointment, time of occupancy, and so on) which may influence waiting time.

III. Research Methodology

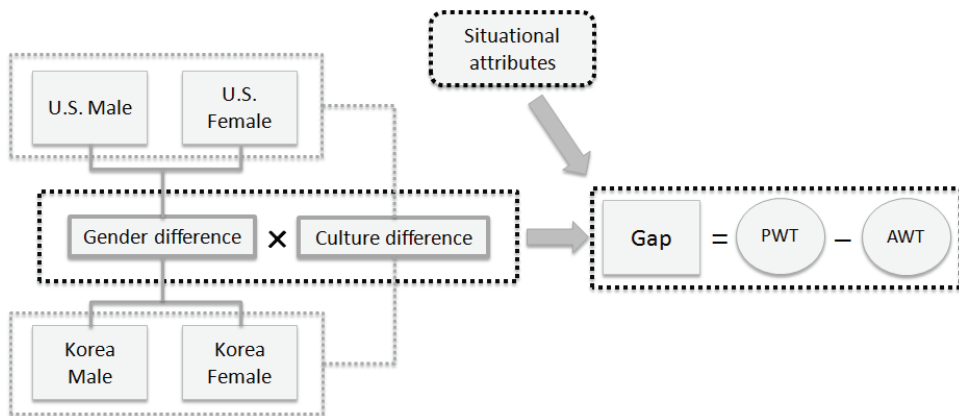
1. Sample and Data Collection

An experimental design was employed in order

to measure the gap between actual and perceived waiting time within the context of the comparison of Koreans and Americans. A total of 20 respondents were voluntarily recruited from a university in the Midwestern area of the U.S. to serve as experimental subjects using convenience sampling. This experiment was conducted during lunch time at a university cafeteria in November 2nd, 2011.

2. Experimental setting

Five graduate students participated in a pre-test for manipulation check. In particular, the operation of devices (i.e., buzzers and a receiver) and the physical environment of restaurant were mainly tested to realize an appropriate experimental environment. Furthermore, after checking operational issues, the participants filled out questions regarding confounding variables that may affect experiments (e.g., any types of distraction, the number of waiting seats and so on). Based on the results of the pre-test, a quasi-experiment was offered, and consequently, an efficient data collection was facilitated.



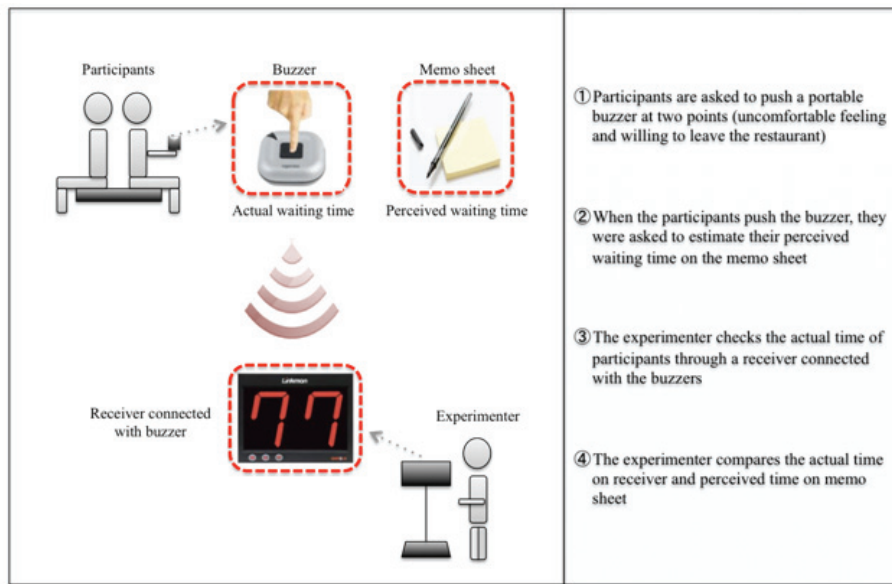
<Fig. 1> The framework of measuring gap between AWT and PWT

3. Conditions of experiment

The two main estimated points were (1) when the participants perceived uncomfortable feelings due to the length of the wait (i.e., critical point when customers feel negative emotion arising from the wait) and (2) when they are willing to leave the restaurant due to the length of the wait (i.e., critical point when customers intend to quit waiting owing to the length of wait). At these two points, they were asked to push a portable buzzer, and at the same times, they also were asked to write their perceived waiting time on the memo sheet. Actual waiting time was checked via a receiver connected with the buzzers, and perceived waiting time was estimated through memo sheets. Finally, the experimenter compared these two types of waiting times. Furthermore, after each experiment, the participants filled out a questionnaire including customer waiting behavior in the restaurant and demographic information

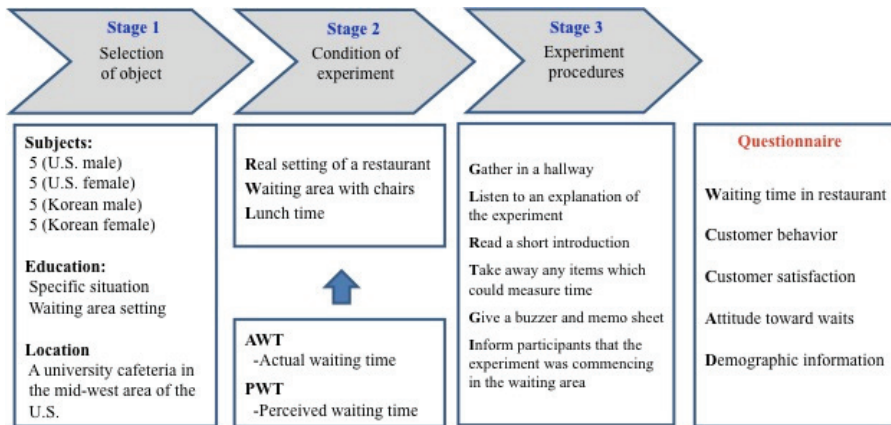
4. Procedure

The participants were asked to gather in a hallway before entering the cafeteria and an experimenter explained the procedure of the experiment. Though participants received a short introduction, they were not informed regarding specific research objectives. After checking full understanding of the procedure, the participants moved to the cafeteria to start the experiment. In the experiment, watches and cell phones were taken away from participants in order to prevent them from checking actual waiting time. For the comparison between actual and perceived waiting time, buzzers were distributed for measuring actual waiting time, and memo sheets were distributed for measuring perceived waiting time. Finally, the experimenter informed participants that the experiment was commencing in the waiting area.



Receiver: Linkman LM-D102U, Buzzer: QFD - LM - T900

<Fig. 2> Illustration of the process for measuring waiting time



<Fig. 3> Flowchart of experimental process of this study

5. Research Instrument

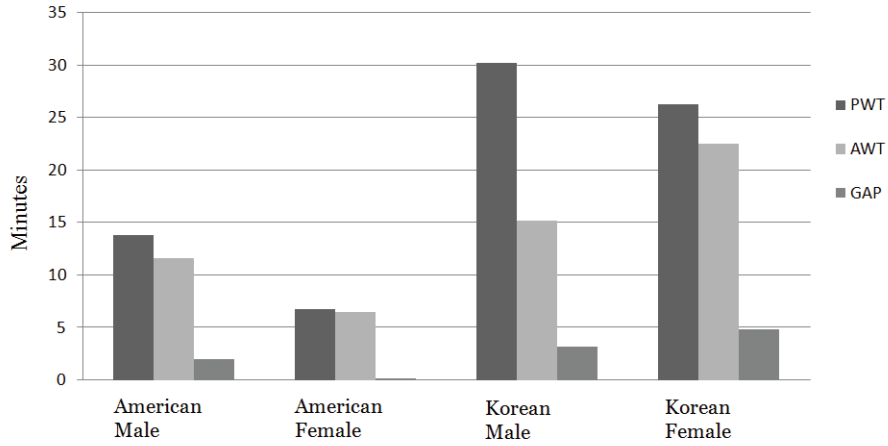
The questionnaire used in this study was developed based on a review of related studies exploring perceived waiting time and customer responses to waiting time. Before conducting primary investigation, the quality and procedures of the experiment were verified by questions about realism of the experiment and interference from others. For the further investigation, questions about customers' perceived wait attributes (e.g., value of waiting time and perceived fairness of waiting time) were adapted from Maister's study (1985). The participants were also asked to rate each item on a scale from 1 "strongly agree" to 5 "strongly disagree." In addition, the research instrument includes customers' demographic information and customer dining behaviors.

IV. Results

<Fig. 4> and <Fig. 5> describe the gap between perceived and actual waiting time with a comparison of Americans and Koreans. The findings in this study are that there are significant differences in the gap between perceived and actual waiting

time between Korean women and American women. Specifically, the sections labeled GAP record the mean actual waiting time subtracted from the mean perceived waiting time at the point of uncomfortable feeling and willingness to leave. Thus, this study identified culture differences in consumer waiting behavior in a restaurant setting. Therefore, the results indicated American women are less tolerant of waiting than Korean women based on the differences in actual waiting time, while American women perceived the gap between actual waiting time and perceived waiting time as shorter than those of Korean women, which means that American women relatively perceived their waiting time in an accurate manner.

Using an independent T-test, significant mean differences were found in culture difference in the gap between perceived and actual waiting time at the point of the customer's experiencing uncomfortable feelings as a result of the wait (T: -2.455, $p < 0.05$) and at the point of the customer's willingness to leave the restaurant as a result of the wait (T: -3.355, $p < 0.01$), while gender differences were not found at either point of time. Thus, the results indicated that compared to Americans,



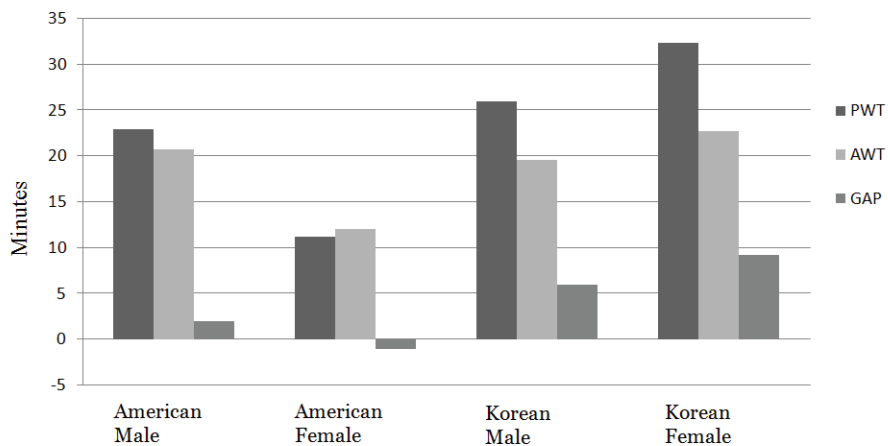
PWT: perceived waiting time, AWT: actual waiting time. GAP = PWT - AWT

<Fig. 4> PWT, AWT, and Gap scores at the point of uncomfortable feeling

Koreans perceived the time spent in the waiting area to be longer than actual waiting time, though Koreans are more tolerant of waiting than Americans.

The two-way ANOVA tested culture and gender difference in the gap between actual waiting time and perceived waiting time both at the point of the

customer's experiencing uncomfortable feelings and at the point of the customer's willingness to leave. The results indicated significant main effects for culture difference at the point of the customer's experiencing uncomfortable feelings ($F = 5.70, p < 0.05$), and main effects for culture difference at the point of willingness to leave ($F =$



PWT: perceived waiting time, AWT: actual waiting time. GAP = PWT - AWT

<Fig. 5> PWT, AWT, and Gap scores at the point of willingness to leave

<Table 1> Culture differences in the gap between AWT and PWT at the point of uncomfortable feeling and willingness to leave

| | | | | Minutes |
|-----------------------|----------|----|-------|----------|
| | Group | N | Mean | T-value |
| Uncomfortable feeling | American | 10 | 1.073 | -2.455* |
| | Korean | 10 | 4.015 | |
| Willingness to leave | American | 10 | .519 | -3.355** |
| | Korean | 10 | 7.618 | |

* $p < .05$, ** $p < .01$, PWT: Perceived waiting time AWT: Actual waiting time.

<Table 2> Culture and gender differences in the gap between AWT and PWT at the point of uncomfortable feeling and willingness to leave

| Points | Effects | Sum of squares | df | Mean squares | F-value |
|-----------------------|------------------|----------------|-------|--------------|---------|
| Uncomfortable feeling | Culture | 43.28 | 1, 17 | 43.28 | 5.70* |
| | Gender | 0.09 | 1, 17 | 0.09 | 0.01 |
| | Culture x Gender | 58.30 | 3, 16 | 19.43 | 2.72 |
| Willingness to leave | Culture | 251.98 | 1, 17 | 251.98 | 10.64** |
| | Gender | 0.08 | 1, 17 | 0.08 | 0.004 |
| | Culture x Gender | 303.10 | 3, 16 | 101.03 | 4.60* |

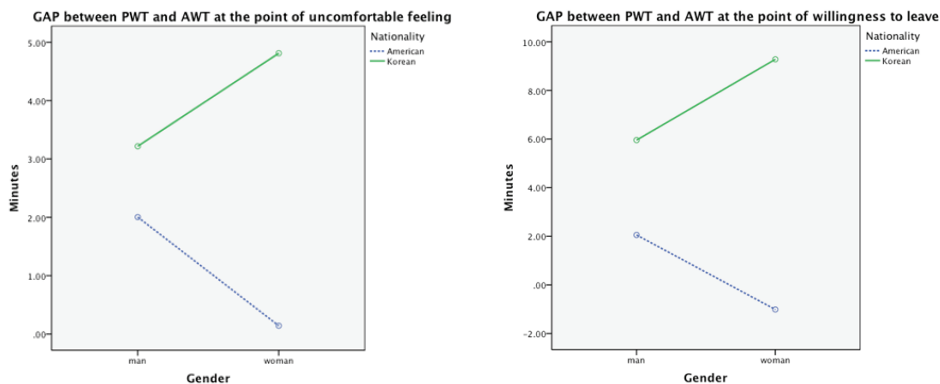
* $p < .05$, ** $p < 0.01$

10.64, $p < 0.01$). However, the results indicated that there are no main effects for gender difference at the point of uncomfortable feeling, and the point of willingness to leave, and there are no interaction between gender difference and culture difference at the point of uncomfortable feeling, however, there are interaction between gender and culture

difference at the point of willingness to leave ($F = 4.60$, $p < 0.05$).

V. Implications and limitations

This study focuses on measuring gender and culture differences in the gap between actual and



<Fig. 6> Culture and gender difference in the gap between PWT and AWT at the point of uncomfortable feelings and at the point of willingness to leave

perceived waiting time. The findings show culture differences in customer waiting behavior, such that Korean customers perceived waiting time to be much longer than actual waiting time compared to American customers. In addition, based on the result of interaction effect at the point of willingness to leave, the possible interpretation is that Korean female customers are the most sensitive to the perception of waiting time compared to other groups, even though Korean females are more tolerant of waiting time.

From the managerial implication perspective, understanding customer waiting behavior may be a vital point in the operational management because the waiting experience before seating table may be related to the formation of restaurants' impression affecting customers' overall satisfaction and revisit intention. In the vein, by paying attention to gender and culture differences in customer waiting behavior, managers will be able to offer customized service based on culture differences during long waits in waiting areas, especially when they extend their business to other countries. Consequently, based on the results of this study, managers will be able to apply this important operational marketing strategy to improve customer satisfaction and revisit intention regarding waiting time in restaurants.

In addition, regarding measurement issue, this study investigated both actual waiting time and perceived waiting time at the same time. Compared to previous studies examining both waiting times under different experimental settings (e.g., Sampson · Seawright 2007), it can be a strong benefit to explore customers' perception of waiting time with a standardized critical point (i.e., actual waiting time).

This study was not able to identify the relation-

ship among waiting attributes which may influence waiting time and the gap between perceived waiting time and actual waiting time due to the small sample size. For this reason, a future study will employ several different conditions for the same participant in order to examine waiting attributes (e.g., waiting fairness, mood, party size, relationship with the party group) affecting perceived waiting time. In addition to waiting attributes, distracters (e.g., TV, music, mirror, and menu) that can distract customers from perceived waiting time are also important issues in waiting time studies because if the effects of distracters on perceived waiting time could be identified, restaurateurs would be able to save budgets for reducing actual waiting time.

In order to remedy shortcomings regarding sample size, this study examined follow-up test, which is Mann-Whitney U test (i.e., one of nonparametric tests). The results also supported the culture differences between Korean and American at the point of uncomfortable feeling ($p < 0.05$) and at the point of willingness to leave ($p < 0.01$). Similarly, the results also did not support the gender differences between male and female at the point of uncomfortable feeling and at the point of willingness to leave. Since the results of nonparametric tests support the results of primary tests in this study, it appears that the results of this study is quit reliable, though the sample size is small.

Another limitation is that though this study conducted a manipulation check for more efficient data collection, technical problems may include the fact that the receiver cannot present several numbers at exactly the same time. In order to solve this potential problem, future research could employ advanced receivers which can measure exact time or psychophysiological equipment to measure

customers' physiological reactions, such as changes in heartbeat or facial electromyography.

한글 초록

레스토랑 경영에서 대기시간의 중요성에 대한 인식과 함께, 물리적 시간과 인지적 시간의 차이를 측정하기 위한 유사설계 실험연구가 실제 레스토랑 환경에서 실행되었다. 특히, 본 연구는 미국고객과 한국고객의 성별 과 문화적 차이에 따른 대기시간 행동 비교를 집중적으로 탐색하였다. 그 결과, 한국 여성고객들에 비하여 미국 여성고객이 대기시간에 대하여 더 빨리 불편하게 반응하였다. 또한, 한국 여성고객들이 다른 고객들에 비해 실제 경험한 물리적 시간보다 더 많이 기다린 것으로 인지하였다. 하지만, 성별에 따른 인지적, 물리적 대기시간의 차이는 양 집단 모두에서 발견되지 않았다. 본 연구의 결과를 바탕으로 레스토랑 운영자들이 레스토랑 운영전략을 수정할 수 있을 것으로 기대된다.

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