The Influence of Employee Attractiveness on Service Recovery Paradox: Facial Recognition and Eye Tracker Analyses

Erdoğan Koc
Bahçeşehir University
Faculty of Economics, Administrative and Social Sciences
Yeni Mahalle Şehit Astsubay Mustafa Soner Varlık Caddesi No:77, 10200 Bandırma/Balıkesir, Turkey
Phone: +90 266 717 01 17 erdogankoc@yahoo.com

Hakan Boz
Usak University
İzmir Yolu 8. Km. Atatürk Bulvarı Merkez/Uşak Merkez, 64000 Uşak Merkez, Turkey
Phone: +90 276 221 21 21
onlyhakanboz@hotmail.com

Burcin Boz
Bilecik Seyh Edebali University
Adapazarı Bilecik Yolu Bilecik Şeyh Edebali Üniversitesi Rektörlüğü, 11230 Gülümbe/Bilecik Merkez/Bilecik, Turkey
Phone: +90 228 214 11 11
burcinsonmez86@gmail.com

Abstract
This study aims to explore the influence of employee attractiveness on service recovery paradox by using Eye Tracker and Facial Recognition Software. Based on two service recovery scenarios an experiment was carried out with the participation of 20 subjects in Turkey. In the experiment participants’ pre- and post-satisfaction levels before the service failure and after the service recovery attempt have been measured. The participants were also asked to respond to Likert type questions to explain how they felt about the service encounter they were exposed to in the scenarios. The analysis of data showed that although attractiveness reduced the negative of the responses, increased interest in the attractive service employee. However, the results showed that in both scenarios (with attractive and less attractive service employee photos) the service recovery paradox did not occur.

Keywords: Service Failure; Service Recovery Paradox; Artificial Intelligence; Hospitality; Facial Recognition; Eye Tracker.

1. Introduction
A service failure can be defined as any type of error, mistake, deficiency or problem that occurs during the provision of a service, causing a delay or hindrance in the satisfaction of customer needs (Koc, 2017; Koc, 2019a). Due to the intense and frequent interactions taking place tourism and hospitality services are highly prone to service failures (Koc, 2013). Coupled with the general service characteristics of inseparability and heterogeneity nature, service failures in tourism and hospitality are almost inevitable.

Although service failures are almost inevitable, unsuccessful service failure recovery attempts result in negative emotions and negative behavioural outcomes and threaten the survival and growth of tourism and hospitality businesses (Ha and Jang, 2009; Wen and Chi, 2013 Koc, 2017). The negative emotions and the behavioural intentions after a service failure may range from customer dissatisfaction (Kelley et al., 1993; Koc, 2017) to negative word-of-mouth (Mattila, 2001), customer
Service recovery is a process which comprises of all the actions designed and implemented to resolve problems and change customers’ negative attitudes to prevent negative word-of-mouth communications and to avoid the switching of customers (Miller et al., 2000; Baker, 2017). First coined by McCollough and Bharadwaj (1992) refers to service recovery situations in which a customer’s post-failure satisfaction exceeds pre-failure satisfaction after a service failure has been recovered.

The service recovery paradox relates to a secondary satisfaction after a service failure in which customers compare their expectations for recovery to their perceptions of the service recovery performance. Service recoveries ensure that feeling of justice is reinstated. In a recovery situation, and for a service recovery paradox to take place, customers usually look for three types of justice. These are distributional justice, procedural justice and interactional justice (Sparks and McColl-Kennedy, 2001). Distributional justice is about the compensation of the losses incurred by the customer as a result of a service failure (Patterson et al., 2006; Koc, 2019b). Distributional justice may be reinstated by refunding, or part of, the bill, or providing free products or services.

Procedural justice is to do with the perceived fairness of a process (Sparks and McColl-Kennedy, 2001), i.e. whether the procedures or the criteria used in the recovery were perceived as being fair. The procedural justice may be established by the use of appropriate policies and procedures, the convenience of the process and the timeliness of the service recovery attempt (Tax et al., 1998, Smith et al., 1999; Baker, 2017). According to Blodgett et al. (1997) the speed of the recovery action taken is one of the major determinants of procedural justice.

Interactional justice relates to the interaction quality between the service employee and the customer and, depends on friendliness shown by service staff during the recovery process (Tax et al, 1998; Smith et al., 1999) or the interaction quality between a service employee and management (Baker, 2017).

Several research findings show that after an efficient and effective recovery of a service failure, i.e. when the feeling of justice has been reinstated, customers' repurchase intentions, the likelihood of making positive word-of-mouth communications, and their image of the brand may increase significantly (Baker, 2017). Based on the above background this study explores the influence of the attractiveness of service employees on service failure paradox by attempting to reinstate distributional justice (Sparks and McColl-Kennedy, 2001).

2. Employee Attractiveness

Attractiveness forms a bias causing favour in higher physical attractiveness and disfavour in lower physical attractiveness (Berscheid and Walster, 1972; Frevert and Walker, 2014). In fact, attractiveness is a heuristic device, a type of conditioning, people use in responding to external stimuli (Villi and Koc, 2018).

Facial attractiveness which primarily determines physical attractiveness (Olson and Marshuetz, 2005) may have a significant influence on other people's various responses towards the person who is attractive. For example research shows that physically attractive people may get better grades in school (Langlois et al., 2000; Elovitz et al., 2009); may be more likely to be recruited following (Johnston, 2010; Roberts, 2012; Toledano, 2013; Verhulst et. al., 2010) and may even tend to get higher salaries for the same job done (Bennett, 2010; Salter et al., 2012; Toledano, 2013; Frevert and Walker, 2014). The influence of attractiveness in tourism and hospitality has been researched by various scholars. For instance, Magnini et al.'s (2013) study found that clean-shaven male employees and employees who smiled produced more positive feelings among hotel customers. Kim et al.'s (2017) study found that while employee attractiveness enhanced the service encounter, attractiveness was not a substitute for friendly, courteous service. Although appearance was one of the salient
attributes of an employee, when building rapport, customers paid more attention to the nonverbal and behavioural cues of employees. In another study, Boz and Yılmaz's (2017) study showed that tourism and hospitality managers were more likely to recruit attractive candidates even for back-stage jobs. Villi and Koc’s (2018) study found that customers gave milder responses to service failures when they interacted with attractive service failure. However, the influence of employee attractiveness on service recoveries and particularly on service recovery paradox has not been researched by researchers.

3. The Method and the Procedure

The study aims to explore the influence of employee attractiveness on service recovery paradox. In the study, data were collected from 10 female and 10 male participants who eat at a restaurant at least once a week. The participants were asked to read the following two scenarios:

**Service Failure and Recovery Scenarios**

**Scenario 1**
Imagine that you have had an exhausting day. It was so busy that you did not have time to have lunch during the day. You decided to eat dinner in a restaurant. You ordered your food to the waitress on the right. You felt that you were really hungry. The meal you ordered arrived without any delay. You started to eat your meal. The food tasted really good. But just before having your second fork of the meal you saw a long hair in the dish. You immediately called the waitress and informed her about what happened. The waitress first apologised and brought a new plate of food and told you that it was on the house, i.e. there was going to be no bill to pay.

**Scenario 2**
Imagine that you had your dinner in a restaurant. After finishing your main course, you saw an appetizing dessert eaten by another guest in the restaurant. You ordered the same dessert to the waitress on the right. The dessert arrived and you started eating. But before having your second fork you saw a long hair in the dessert. You immediately called the waitress and informed her about what happened. The waitress first apologised and brought a new dish of a dessert and told you that it was on the house, i.e. there was going to be no bill to pay.

The scenarios were basically the same except in the first scenario an attractive and in the second scenario not so attractive waitress photos were used. The attractiveness of the persons (waitresses) in the photos was determined with a pilot test with thirty participants two weeks before the experiment. The attractive female photo was provided courtesy of Dr. Martin Gruendl at Beautycheck (Braun et al., 2001). The not so attractive female photo was taken from The Chicago Face Database (Ma, Correll, & Wittenbrink. 2015).

The participants' emotions were measured before, during and after the reading of the scenarios. The participants were also asked to respond to four short questions appearing on the screen by using the mouse of the computer. The purpose of asking these questions was, though to a limited extent, to triangulate data (Koc and Boz, 2014) and support the data collected by the psychophysiological tools. These questions were particularly aimed at measuring participants’ emotions regarding the regarding...
the service failure itself, the recovery attempt and their future intentions whether to at the same restaurant again and whether they would recommend this particular restaurant to other people.

4. The Task and Experimental Procedure

The experiment procedure was designed by using the experiment flows used in the studies of (Boz, 2015; Boz and Yılmaz, 2016; Taşkı̇n, Koç and Boz, 2017; Koc and Boz, 2018). The task and the procedure were as follows (See Figure 1):

1. In order to eliminate the influence of the order effect the visual materials were shown randomly to the participants.
2. The duration of the experiment was 120 seconds for each participant.
3. After the fixing of the facial recognition software subjects were asked to take a comfortable position and relax. Participants ran the experiment individually using a mouse to answer assessment questionnaires.
4. First visual marketing material was shown ten seconds after the experiment started. During these ten seconds, the participants were shown a black screen.
5. After having been exposed to marketing stimuli the participants were asked to make an evaluation of the scenarios for a duration of twenty seconds - by indicating their responses to the questions shown on the screen with the use of a Mouse.
6. The participants indicated their responses on a Likert scale a 1 (one) score meant “Extremely negative attitude towards exposed stimuli” and a score of 10 meant “Extremely positive attitude towards exposed stimuli” on the screen with the mouse.
7. The experiment was carried out in a quiet room.
8. Prior to the start of the experiment, the participants were given information about the experiment procedure for 4-5 minutes in order to relax them.
9. The participants were instructed to avoid any excess movements during the experiment.
10. Two service recovery paradox scenarios (Figure 1) were shown to the participants. Each scenario exposure lasted 35 seconds. Then, the participants were asked to respond to four questions appearing on the screen for each scenario for a period of 20 seconds.
11. Before each service recovery scenario, the participants were shown a black screen for ten seconds.

Figure 1. Flow of the Experiment

![Figure 1: Flow of the Experiment](image-url)
The data collected by the psychophysiological tools of Eye Tracker and Facial Expression recognition were calculated and analysed by using the software developed by Boz and Kose (2018). Facial Expression recognition software was developed by using machine learning and artificial intelligence methods and the accuracy of the algorithm is 87%.

5. Findings and Analysis

The participants’ responses (Likert Type - 1 to 10) regarding the service failure itself, the recovery attempt and their future intentions whether to visit the same restaurant again and whether they would recommend this particular restaurant to other people. By looking at the total means in Table 1 it can be seen that when the waitress was more attractive the participants tended to evaluate the service failure less important (4.70 to 5.40 – the difference being 25.38%). This may mean that attractiveness of the service employee (the waitress) reduced the severity of the service failure by more than 25%.

Table 1. Overall Evaluation of the Service Encounter

<table>
<thead>
<tr>
<th></th>
<th>Attractive Waitress Stimuli</th>
<th>Less Attractive Waitress Stimuli</th>
<th>The Difference (Between the Totals) (Mean)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female Respondents (Mean)</td>
<td>Male Respondents (Mean)</td>
<td>Total (Mean)</td>
</tr>
<tr>
<td>Importance of service failure</td>
<td>4.50</td>
<td>4.90</td>
<td>4.70</td>
</tr>
<tr>
<td>Overall evaluation of service experience</td>
<td>3.70</td>
<td>2.80</td>
<td>3.25</td>
</tr>
<tr>
<td>Tolerability of the failure</td>
<td>3.80</td>
<td>2.50</td>
<td>3.15</td>
</tr>
<tr>
<td>Recommending the restaurant to others.</td>
<td>5.30</td>
<td>2.80</td>
<td>4.05</td>
</tr>
</tbody>
</table>

Additionally, when the service employee was more attractive the participants tended to evaluate the Service experience relatively more positively (3.25 to 3.15) as a higher score meant that the experience was more positive. Moreover, when the service employee was more attractive, the participants found the failure relatively more tolerable (3.15 to 3.05). These three above findings are
in line with Villi and Koc's (2018) findings in which the customers gave milder responses to service failures when the service employee was more attractive. Regarding the recommendation of the restaurant to others the participants stated that they were more likely to recommend the restaurant to others (4.05 to 2.80 - the difference being 30.86%).

These findings are line with the studies mentioned above (e.g. Langlois et al., 2000; Olson and Marshuetz, 2005; Elovitz et al., 2009; Verhulst et. al., 2010; Johnston, 2010; Bennett, 2010; Roberts, 2012; Toledano, 2013; Frevert & Walker, 2014; Boz and Yilmaz, 2017; Villi and Koc, 2018) which found favorable outcomes relating to attractiveness of people. The findings show that the distributional justice used in the scenarios, to some extent, has been instrumental in reinstating distributional justice in the participants.

Overall, it can be seen that the attractiveness of the service employee (the waitress) had a positive effect both in terms of the service failure, as it was seen as a less of a problem and increased the satisfaction with the recovery attempt. However, it should be kept in mind that, in highly competitive markets, facial attractiveness cannot solve all of the problems. Moreover, as found in Kim et al.’s study the attractiveness may not be a substitute for delivering a high quality service. Additionally, the idea of recruiting more attractive candidates for jobs has significant ethical and legal implications.

The findings of this study also show that although attractiveness may lessen the negativity of the responses towards service failures, it may not solve all of the problems. For instance, having in mind the fact that, the mean scores were out of 10, the highest figure of 5.40 (Table 1) may not be considered sufficient to establish a competitive advantage. Business firms with higher scores on these may be more likely to survive and prosper in the competitive markets.

The Eye Tracker and Facial Recognition data were analyzed whether the service recovery paradox took place after the recovery of the service. The eye tracker data showed where the participants concentrated/focused on the materials they were shown.

![Figure 2: Attractive Waitress Scenario Eye Tracker Analysis Results](image-url)

Figure 2 shows the eye tracker analysis results for the first scenario, i.e. service failure scenario with an attractive service employee. The results show that while the duration of the focus of the male participants on the verbal explanations in the scenario was 268 ms, the duration of the focus of the female participants on the verbal explanations in the scenario was 251 ms. On the other hand, while the duration of the focus of the male participants on the attractive female employee photo 459 ms, the duration of the
gaze of the female participants on the on the attractive female employee photo was 231 ms. This means that male participants spent more time focusing on the photo of the attractive service employee than they focused on the scenario itself, while the female participants spent more time focusing on the scenario itself.

Figure 3. Less Attractive Waitress Scenario Eye Tracker Analysis Results

Figure 2 shows the eye tracker analysis results for the second scenario, i.e. service failure scenario with a less attractive service employee. The results show that while the duration of the focus of the male participants on the verbal explanations in the scenario was 307 ms, the duration of the focus of the female participants on the verbal explanations in the scenario was 231 ms. On the other hand, while the male participants did not focus on the less attractive service employee photo at all, female participants focused on the less attractive service employee photo was 352 ms. Interestingly, the female participants focused on the less attractive service employee photo more than they focused on the attractive service employee photo.

Table 2. Facial Expression Scores of the Participants

<table>
<thead>
<tr>
<th>Feelings</th>
<th>Attractive Service Employee</th>
<th>Less Attractive Service Employee</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before the Service Failure</td>
<td>After the Service Recovery Attempt</td>
</tr>
<tr>
<td>Surprise</td>
<td>0.250</td>
<td>0.340</td>
</tr>
<tr>
<td>Anger</td>
<td>0.004</td>
<td>0.047</td>
</tr>
<tr>
<td>Sadness</td>
<td>0.0720</td>
<td>0.0746</td>
</tr>
<tr>
<td>Disgust</td>
<td>0.3800</td>
<td>0.3711</td>
</tr>
<tr>
<td>Fear</td>
<td>0.057</td>
<td>0.006</td>
</tr>
<tr>
<td>Happiness</td>
<td>0.038</td>
<td>0.027</td>
</tr>
</tbody>
</table>
Table 2 shows the facial expression analysis results. The results mean that the service recovery paradox did not take place in both scenarios. In other words, the attractiveness of service employee had no effect on service recovery paradox. For instance, the scores for negative feelings (anger and sadness) did not decrease in both scenarios after they have been introduced to the service failure and service recovery. Likewise, the positive feeling scores of happiness did not increase after the participants were introduced to the service failure and ensuing service recovery attempt.

Research shows that service recovery paradox may not take place in all service recovery situations. For instance, studies carried out by McCollough et al. (2000) and Michel and Meuter (2008) showed that service recovery paradox did not take place after the recovery of the service failure.

There may be several reasons to explain why the service recovery may not occur due to factors, ranging from the severity of the failure to the cultural factors and from personality characteristics to various other factors such as the service sector the study conducted in (Magnini et al., 2007; Du et al., 2011). For instance, Koc et al.’s (2018) that study showed in restraint cultures, as opposed to indulgence cultures, service recovery may not take place due to the fact that people from restraint cultures were more likely to remember negative events such as a service failure.

6. Limitations of the Study and Recommendations for Future Research

As one of the limitations of the study, the number of people (20) can be stated. Future studies may investigate the concept of service recovery paradox with larger numbers and perhaps supported with focus group studies. A larger group of participants in the experiment supported by focus group studies may not only increase the validity and reliability of the study but may also enable gaining a deeper insight into the service recovery paradox phenomenon.

In the study service recovery paradox was mainly concerned with reinstating distributional justice, i.e. compensating the losses incurred by the customer. Future studies may investigate the influence of attractiveness in relation to other types of justice, i.e. procedural justice and interactional justice. Additionally, this study investigated the occurrence of service recovery paradox in restraint cultures. Future studies may be carried out in indulgence cultures or both cultures where and which the findings may be compared.

7. Conclusions

The study has found that the attractiveness of hospitality employees can play a role in terms of influencing customers’ perceptions of service failures. Although the attractiveness of the service employees may mitigate the responses of customers service failures, service recovery paradox may not occur no mater service employees are attractive or not. In other words, customers may not easily forget what happened during the service failure and remember those negative feelings even after the service has been recovered. Based on the findings of this study, hospitality managers can be recommended to establish better quality assurance systems in their businesses. It should also be borne in mind that the attractiveness of service employees may not be a substitute for providing a high-quality service.

References


