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Research Article

# Prioritization of the Theme Park Satisfaction Criteria with Multi-Criteria Decision-Making Method: Level Based Weight Assessment Model

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**ABSTRACT**

Theme parks, whose numbers increased rapidly after the end of World War II, have been frequently visited by those who have wanted to spend their leisure time there in recent years. The theme parks, which are pioneers among entertainment centers with the development of the experience economy, should give importance to satisfaction in order to create competitive advantages in terms of visitor satisfaction. Satisfaction is a key factor, especially in the current competitive environment in the entertainment and tourism industry. Therefore, entertainment and tourism businesses should determine how to provide and measure satisfaction. This research focuses on identifying key criteria that affect theme park satisfaction. Satisfaction criteria were determined by using the literature and several contributions by the authors. The criteria were evaluated by asking the importance levels of the satisfaction criteria to the visitors who attended the theme park concerned. The Level Based Weight Assessment (LBWA) Model, a new model, is used in Multi-Criteria Decision-Making (MCDM) methods in evaluating the determined criteria and determining the weight coefficients. With the findings of the study, the criteria that affect customer satisfaction were determined. To achieve long-term success and competitive advantage, it is necessary to focus on customer satisfaction criteria. Therefore, of the criteria determined, it is recommended that theme park managers should focus more on which criteria. This study presents results that should be taken into account in solving problems, improving plans, and marketing strategies.

**Keywords:**

Theme Park Satisfaction, Service Quality, Entertainment Quality, Multi-Criteria Decision-Making, Criteria Weight, LBWA Model

## 1. Introduction

The number of theme parks increased rapidly after World War II. While theme parks are an important entertainment and tourism center in creating demand, they are the main motivator for visitors (Raluca & Gina, 2008). With the development of the experience economy, theme parks (Geissler & Rucks, 2011) are a good alternative for visitors who want leisure time. Theme parks, one of the important components of the entertainment and tourism industry (Formica & Olsen, 1998), are centers that provide service by making use of audio-visual technology (Başarangil, 2018). Theme parks, which vary in the goods, services, and experience elements, are known for offering many features and different themes. For example, theme parks have many different themes, such as history, fairy tales, marine, botanical, wild animals, nature, and educational themes (McClung, 1991; Raluca & Gina, 2008; Başarangil, 2018). Theme parks are a center of attraction for visitors because they also offer sections from the world geography (Başarangil, 2018). Presenting themes and stories by focusing on changing consumer demands and needs in the tourism industry is more common than in other industries. Commercially managed theme parks Milman (2009) offer experiences that distract visitors from daily life. The theme and concept presented are designed to give a sense of escape from real life. In previous studies, although it is used in the same sense as amusement parks, theme parks differ from amusement parks with their interesting themes (Pikkemaat & Schuckert, 2007).

In the postmodern era, theme parks use impressive themes to differentiate and ensure the continuity of the moment. In addition, theme park facilities offer many new goods, services, and events to increase visitor numbers and to achieve a high market share. Theme parks, which create a sense of a different place and time atmosphere away from daily life, organize new living spaces with architectural structure, scenery, shows, food and beverage services, shopping opportunities, and costumed characters (Raluca & Gina, 2008). All these innovations are carried out to meet customer expectations and needs, and to ensure customer satisfaction.

Theme parks, operate as centers of attraction and fantasy and are expressed as 'cathedrals of consumption' (Ritzer, 2000), offering many places where visitors can consume (Williams, 2006). Furthermore, a theme park is significant among consumption tools with its innovative design, marketing activities, and memorable experiences (Geissler & Rucks, 2011). Milman (1991) defines a theme park as a kind of modern tourism center offering creative themes and events where tourists can enjoy their leisure time and meet their entertainment needs. Theme parks, in addition to offering fun activities such as cultural and artistic events, concerts, and various shows, services such as restaurants, bars, water parks, and shopping malls, offer an authentic atmosphere with different cultural and architectural structures.

Although theme parks are not new, today they are known and visited more with the increase in their number and variety. In addition, the theme park has become a significant center in recent years due to the possibilities it offers and including different themes. Therefore, it has become an important research subject for analyzing consumer behavior. It is possible to state many criteria that make theme parks so attractive. Therefore, the main purpose of this study is to reveal the satisfaction criteria of theme park customers and to determine their importance level.

MCDM methods in the fields of business and marketing have been researched in various studies, but no study has previously focused on theme park satisfaction criteria. In this study, theme park satisfaction criteria were evaluated by randomly selected customers who have had the 'theme park experience'. Theme park satisfaction criteria were formed using the literature from four main criteria and twenty-one sub-criteria. The importance given by customers to the twenty-one sub-criteria under four main criteria and based on the following: which criteria have more effect on satisfaction and which ones have less effect. This is examined by the LBWA method.

This study aims to measure the satisfaction of theme park visitors and to determine which criteria are more important for visitors. The study further examines the satisfaction criteria and reveals which theme park satisfaction criteria they should act with to achieve, improve, and maintain satisfaction in the theme park industry. The LBWA model was used in determining the importance levels of the main and sub-criteria used in evaluating theme parks. The LBWA model, which is used to evaluate the criteria and determine the weight coefficients, allows the comparison of a large number of criteria. The model also facilitates the comparison and consistency of results.

The study provides important contributions to theme park managers by expanding the literature with current findings. By determining the satisfaction levels of customers, suggestions were made to the theme park managers. Recommendations are made to make more profit, achieve long-term success in the competitive market, and improve loyalty intention and word-of-mouth recommendation.

In this study, the satisfaction criteria are explained by making a literature review regarding theme park satisfaction. After this, in this study, the LBWA method, which is a new method in the literature, is explained. The research findings are then presented and discussed. Finally, the study results and recommendations for future studies are presented.

## 2. Research Background

Customers seek numerous alternatives to find the one that best suits their wishes and expectations, in cathedrals of consumption that offer goods, services, and experiences. Increasing diversity makes it possible for customers to find the goods, services, and experiences closest to their desire. However, increasing diversity can increase the time cost of choosing between alternatives. (Pine & Gilmore, 2012). It can be said that all kinds of goods, services, and experiences provide satisfaction when they meet the expectations and needs of the consumer. As in all industries, customer satisfaction is important in the tourism industry. Theme parks, which we can be described as centers of experience in the tourism industry, offer entertainment, shopping, and food and beverage opportunities, and operate as living spaces rather than consumption centers, which is extremely important in customer satisfaction. According to Oliver (1980), dissatisfaction arises when there is a difference between the expectation and the perceived performance after consumption, while satisfaction occurs when the experience is consistent with or higher than the expectation (Chen & Chen, 2010). Unsatisfied tourists are less likely to revisit tourism centers (Alegre & Garau, 2010). Therefore, measuring and

evaluating the satisfaction of tourism centers is important for the survival, development, and success of these centers (Sirakaya et al., 2004).

The concept of 'diversity' is to produce different product options and distribute them to sales stores in the hope that customers come and buy them. The concept of 'customization' means to produce to respond to the wishes of a particular customer. The fact that businesses suffocate customers by offering many products causes the customers to enter a long decision process meaning that the businesses will receive little support or maybe not at all. As a result, customers often leave without buying any product, because what the customer wants is not to choose, but to buy the product they want and exit.

Satisfaction, which directly affects income sources for businesses (Fornel, 1992), is an important issue affecting purchasing intention and behavior in the fields of marketing and tourism. It is possible to see many different definitions regarding the concept of satisfaction, which is often the subject of research in different departments. Oliver (1981) and Spreng et al. (1996) state that satisfaction is an emotional response of customers to goods, services, and experiences. Satisfaction as a result of a certain activity can be evaluated as a positive feeling after the purchase (Oliver, 1993). It can also be expressed as a positive feeling felt by a customer after the purchase.

Theme parks require a comprehensive understanding and knowledge to design, plan, and manage them. Theme parks can be defined as destinations where fantasy and entertainment are combined, which provide significant benefits to the promotion of the region and country in which it is located, economic development, and the steering of visitors away from real life. Providing direct and indirect employment, contributing to state and personal income and foreign currency inflow, improving the transportation and infrastructure system and general facilities and services, and contributing to national culture and tourism can be given as examples of the contribution of theme parks to the economy. Among the contributions of theme parks to socio-cultural relations can be creating interaction between local people and foreign visitors (Raluca & Gina, 2008), the emergence of different social structures, and the awareness of protecting the historical values of the region.

In recent years, there have been incredible developments in the design of theme parks in Turkey and around the world. Theme parks are made in architectural designs for many different concepts, including cultural and religious motifs, and modern and simulation buildings. Theme parks with an esthetic perspective, change the understanding of service and experience. The esthetic dimension attracts more attention in the tourism industry. These attractive, memorable, and interesting structures make a difference in terms of exterior and interior design. The theme park design is an important factor in a park's success and visitor satisfaction. Entertainment areas and shops in a theme park should be designed to attract consumers in terms of both appearance and ease of use. Landscape and theme park design must be compatible with each other. They should support the differentiation and high-quality visitor experiences of the design element and increase the satisfaction level.

Theme parks, which are generally located outside the city and serve as extraordinary amusement parks (Wanhill, 2002), are perceived as an intense holiday product that is

attractive to visitors (Wong & Cheung, 1999). Additionally, they are defined as family entertainment complexes in that they include a series of themes by combining other attractions, catering and shopping stores, and entertainment, as well as the continuity of costumes and architecture to create an experience using imagination (Wanhill, 2002). According to the International Association of Amusement Parks and Attractions, a theme park is 'an amusement park with thematic attractions, such as food, costume, entertainment, retail stores and/or rides' (Wong & Ceung, 1999). In addition, Baudrillard states that theme parks based on Disneyland 'continue to exist today as a perfect example of all simulated intertwined fiction' (Baudrillard, 1983). Moreover, the Hard Rock Cafe, Planet Hollywood, and Rainforest Cafe have well-defined themes, marketing communication, materials, and employees (Williams, 2006).

## 3. Literature Review

In previous studies, it is possible to find many types of research concerning theme parks, especially in the fields of business and marketing. Many types of research have been conducted on the motivations of visiting theme parks, visitor experience, visitor satisfaction, and so on. The motivational factors for visiting Legoland Windsor Theme Park were investigated using the Grounded Theory, and it was concluded that qualified personnel and theme park operation are the most important factors affecting entertainment (Bakir & Baxter, 2011). In the study, in which the effects of the experience in the theme park on customer satisfaction were examined, it was determined that the park experience of the visitors, the food quality and variety, cleanliness, and atmosphere were the most important criteria (Geissler & Rucks, 2011).

Several studies have focused on the satisfaction and post-purchase behavior of tourists (Bigné et al., 2001; Grappi & Montanari, 2011; Prayag et al., 2013; Engeset & Elvekrok, 2015; Tsang et al., 2016). In addition to the studies of post-purchase behavior, it is possible to find studies that evaluate theme parks from different perspectives. Studies, such as evaluation of theme park selection criteria (McClung, 1991), segmentation of theme park visitors and theme park market (Fodness & Milner 1992), determination of park types, and visit motivations (Wong & Cheung, 1999), were conducted. Furthermore, evaluation of management (Milman, 2001), evaluation of visitor feelings (Bigné et al., 2005), and determining theme park success factors (Pikkemaat & Schuckert, 2007) have been studied in the literature.

As mentioned above, there are many past studies with different perspectives. In addition, the research generally focuses on the satisfaction of products and services, but in this study, the concept of satisfaction will be examined in terms of the theme park that contains goods, services, and experiences. In addition to studies on satisfaction, theme parks, or experience, this study draws attention to the mathematical importance (percentage weight) of theme park satisfaction criteria. The importance of this study; is to measure the satisfaction perceptions of the customers visiting the theme park, and to determine which criteria are more significant for the customers. In this study, the main criteria for theme park satisfaction are 'theme and design quality', 'service quality', 'entertainment quality' and 'technological and functional quality'. Moreover, sub-criteria related to each main

criterion are determined (See Table 1). A number of the criteria were determined by the authors, while others were determined using the literature. Sub-criteria consist of 'uniqueness', 'innovation', 'creativity and imagination', 'theme usage', 'design quality', 'atmosphere' and 'environmental integration' for 'theme and design quality'. Among the sub-criteria of the main criteria of 'service quality' are 'landscaping', 'cleanliness', 'qualified personnel', 'capacity and queue management', 'customer services', 'safety and security', and 'quality of food and beverage'. Among the sub-criteria of the main criteria of 'entertainment quality' are 'entertainment options', 'experience options' and 'the feeling of real-life escape'. Among the sub-criteria of the main criteria of 'technological and functional quality' are 'technological infrastructure', 'continuity', 'functionality', and 'performance sustainability'. The evaluation process of the main and sub-criteria presented in Figure 1 was made with the LBWA model, one of the MCDM methods. As a result of the evaluation, the most important criteria for customer satisfaction were determined and categorized.

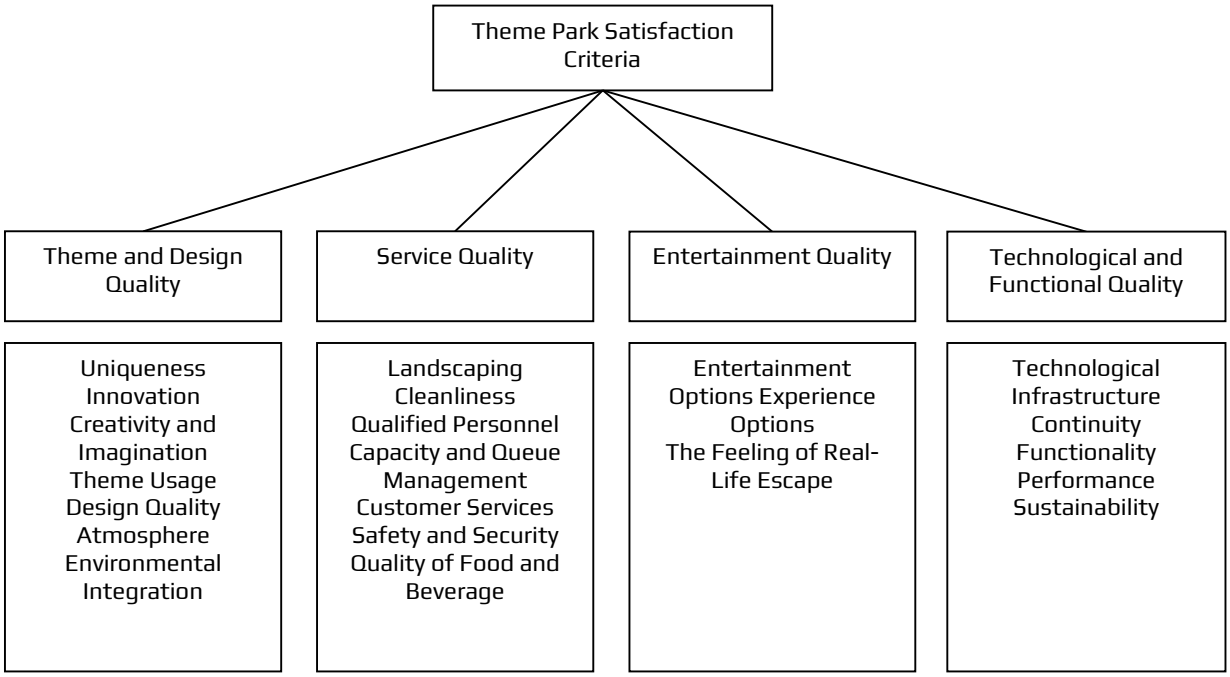


**Figure 1:** A hierarchical model of theme park satisfaction criteria

**Theme and design quality (C1)** is related to the theme and design of the park in general. Theme and design quality refers to certain esthetic elements, such as building design, architectural and artistic structure, color, and style that attracts attention during the theme park visit (Penz & Hogg, 2011). Theme and design quality is also concerned with the theme and design of water parks, entertainment centers, and accommodation facilities. This main criterion can be expressed as a whole by innovation, creativity, and imagination in terms of theme and design. Many sub-criteria are classified under this criterion. Sub-criteria, such as uniqueness, innovation, creativity and imagination, theme usage, design quality, atmosphere, and environmental integration, is among the satisfaction criteria.

The theme usage criteria are an important criterion for theme parks with more than one theme. The difficulty of imitating the themes used and the service and experience presented reveal the innovative and unique characteristics of theme parks. It can be

said that theme parks, which contain unique and unforgettable experiences, make a difference in terms of creativity and imagination. The themes are planned to appeal to all potential visitors (McClung, 1991). The theme used by Walt Disney in the entertainment industry, is staged in places such as restaurants and cafes, especially in parks and hotels (Gilmore & Pine, 2002). Disneyland, which was created by Walt Disney and which offers interesting themes, has become an entertainment center that includes everything by making a difference with its wide target customer groups and bringing entertainment and events together with technology (Ritzer, 2000). As a result, Disneyland has inspired all theme parks that exist today. Moreover, since visitors to Disneyland are largely from outside the city (Milman, 1988), it can be considered that the interaction of local people and visitors benefits environmental integration.

It is significant for theme park businesses in a competitive market structure to evaluate the important effect of the design quality of theme parks and the atmosphere criteria on visitor satisfaction. The atmosphere is taken into account to create satisfaction in the overall theme of the park experience and tourism experience. Lam et al. (2011), in a study on casinos, determine that atmosphere provides positive customer satisfaction. In other studies, in the literature, it has been concluded that atmosphere is the key factor in hotel and theme park visitor satisfaction (Cadotte & Turgeon, 1988; Wong & Cheung, 1999).

**Service quality (C2)** is generally related to the quality of events, shows, shopping, and food and beverage opportunities offered within the park's boundaries. Additionaly, it includes factors such as capacity opportunities, qualified personnel, safety and security elements, cleanliness, and customer service that can directly affect visitors.

Qualified personnel criteria emerge as an important element of satisfaction as customers interact with the personnel one-on-one (Selnes, 1998; Bigne et al., 2008). Disney Corporation has allocated considerable resources to comprehensive personnel training, as well as in architecture and engineering (Ellis & Rossman, 2008). The findings of a study by Cadotte and Turgeon (1988) show that food quality is the key factor in guest satisfaction. In addition, in their study, the cleanliness of the hotel rooms, service quality, qualified personnel and service, and the silence of the environment were identified as significant factors for hotel guests' satisfaction.

All the events and entertainment zones in the theme park can face jams and congestion throughout the day. Long waits and disruptions will cause dissatisfied visitors. Furthermore, customer service means having a center where customers can easily reach and find answers to their questions during theme park visits. Effectively managed customer service is important for business continuity and effective communication. Moreover, all equipment and plant tools that are well maintained are important for safety and security. The direct contribution of these criteria to satisfaction cannot be measured, otherwise it would cause serious problems and dissatisfaction.

**Entertainment quality (C3)** is about the entertainment and experience options the park offers and the escape experience. The variety of entertainment options offered to the customer in theme parks can be categorized as the nature of the theme parks, and the opportunities that enable them to get away from real life and feel in the realm

of dreams, even if for a limited time. All these sub-criteria are gathered under the main criteria of entertainment quality that can affect theme park satisfaction.

Although theme parks are designed and run primarily for children with the entertainment and experience options they contain, they also include entertainment for adults and families. As long as the experience offered in theme parks is uniquely experienced and unforgettable, it continues to live somewhere in the customer's mind. Therefore, despite consumers seeking an experience beyond goods and services, businesses also attract consumers to their processes by incorporating experience elements into their operations, with the understanding of producing supply according to demand. Businesses try to make a difference with unique experiences. The functional value obtained only from goods and services does not attract the attention of consumers, moreover, consumers who expect unforgettable memories and pleasant emotions give more importance to experiential value. Experiential strategies, examples of which we are used to seeing frequently in businesses and industries, such as parks, cafes, hotels, and banking, are aimed at increasing customer satisfaction and loyalty. Experiential marketing strategies are more common in service industries where the transition to the customer experience is easy. Theme parks offer their customers a unique, sincere, and surreal experience during their stay. Theme parks aim to satisfy the customer with their modern and utopian (imaginary) presentations, architecture, customized goods, and services.

Themes, which are expressed as the most important element of experience, must be difficult to imitate in a competitive environment, and must be unique in terms of their characteristics (McLellan, 2000). Themes with a story can reveal a meaningful experience for visitors (Mossberg, 2007). Theme parks are designed for this purpose, taking into account the experiential elements. Among the experience elements, there are sensory, emotional, behavioral, intellectual, and relational experience elements that have been introduced to the literature by Schmitt (1999a).

The escape experience has become a significant research topic in sociology and management in recent years (Haq & Yin Wong, 2010). In a study by Milman (2009), it was concluded that escape criteria are more important for foreign visitors than the residents of the region. Theme parks, which make you feel like you are in a different time and place, provide an imaginary journey. Each of the costumed actors who work in theme parks, or perform in theater performances, creates fantasy and imagination.

**Technological and functional quality (C4)** is a criterion related to the technological and functional quality of the theme park. The satisfaction of theme park visitors is related to technological infrastructure, continuity, and functionality, as well as performance sustainability. All these sub-criteria are gathered under the main criterion of technological and functional quality that can affect theme park satisfaction. Technology has affected many industries and has brought a number of changes in the theme park industry, such as security, labor requirements, distribution channels, administrative activities, product development, and energy (Formica & Olsen, 1998). Continuity means that the experience of visitors is not interrupted by any problem or disruption. The adequacy and quality of the technological infrastructure ease the solution of technical problems and reduces the need for labor-intensive work.

| Sub-Criteria | | Explanation | Source |
|---|---|---|---|
| **C1: The Theme and Design Quality** | | | |
| *C11* | *Uniqueness* | It is about the uniqueness of the experiences in that the theme park differs from its counterparts and offers its visitors the opportunity to personalize. | Prideaux, 2002; Pikkemaat & Schuckert 2007; Milman et al., 2012; Cheng et al., 2016 |
| *C12* | *Innovation* | It is about making certain positive changes in the theme and designs of the theme park. | Prideaux, 2002; Pikkemaat & Schuckert 2007; Milman et al., 2012; Cheng et al., 2016 |
| *C13* | *Creativity and Imagination* | The theme park is about making visitors feel like they are in the realm of dreams by creating differences and creativity with goods, services, and experiences. | Pikkemaat & Schuckert, 2007; Milman et al., 2012 |
| *C14* | *Theme Usage* | It is about the theme park having more than one theme option and using these themes in coherence with each other. | Wong et al., 1999; Cheng et al., 2016 |
| *C15* | *Design Quality* | What attracts attention during the theme park visit is related to the esthetic elements, such as building design, architecture and artistic structure, color, and style, which increase the sense of satisfaction of the visitor. | Pikkemaat & Suckert 2007; Penz & Hogg, 2011 |
| *C16* | *Atmosphere* | It is about the theme park offering an authentic environment with different cultural and architectural structures. | Wong & Cheung, 1999; Geissler & Rucks, 2011; Lam et al., 2011 |
| *C17* | *Environmental Integration* | It is about the interaction and integration of the local people with visitors from different cities and countries in the destination where the theme park is located. | Pikkemaat & Schuckert 2007; Chang & Horng 2010 |
| **C2: Service quality** | | | |
| *C21* | *Landscaping* | It is about the regularity and coordination of the spaces in the theme park. | Milman et al. 2012 |
| *C22* | *Cleanliness* | It is about the hygiene of the theme park. | McClung, 1991; Milman et al., 2012 |
| *C23* | *Qualified Personnel* | It is about qualified personnel working in theme parks. Although the theme parks are run with technology, it is important that the personnel who manage the whole process are competent and that their communication skills are effective. | Selnes; 1998; Mossberg, 2007; Bigne et al., 2008; Ellis & Rossman, 2008; Milman et al., 2012 |
| *C24* | *Capacity and Queue Management* | It is about the theme park usage and whether the density in seasonal changes can be coped with. | Pikkemaat & Schuckert, 2007; Raluca & Gina, 2008; Brown et al., 2013; Cheng et al., 2016; |
| *C25* | *Customer Services* | It is about whether there is a competent person who can answer the questions of visitors and find solutions to their problems through effective communication. | Added by the authors. |
| *C26* | *Safety and Security* | It is about whether the equipment in the theme park is maintained or not, and gives importance to the precautions taken for human health. | Pikkemaat & Schuckert, 2007; Milman et al., 2012; Cheng et al., 2016 |
| *C27* | *Quality of Food and Beverage* | It is about whether the food products in the theme park are safe and not any threat to health. | Cadotte & Turgeon, 1988; Yoon et al., 2010; Milman, 2012; Wu et al., 2018; |
| **C3: Entertainment quality** | | | |
| *C31* | *Entertainment Options* | The theme park is about the diversity of entertainment options so that visitors can use their time efficiently and effectively. | Milman, 2009; Hosany & Gilbert, 2010; Bakir & Baxter, 2011; Milman et al., 2012 |
| *C32* | *Experience Options* | The nature of the theme park is related to the fact that it includes the theme and offers five experiences; intellectual, behavioral, emotional, sensory, and relational. | Schmitt, 1999b; Milman, 2009; Milman et al., 2012; Dong et al., 2013; Cheng et al., 2016 |
| *C33* | *The feeling of Real-Life Escape* | It is about the theme park getting away from routine by creating the feeling of being in a different time and place. | Pikkemaat & Schuckert, 2007; Lee & Smith, 2015 |

| **C4: Technological and functional quality** | | | |
|---|---|---|---|
| *C41* | *Technological Infrastructure* | In addition to entertainment events, such as cultural and art events, concerts, and various shows offered in the theme park, it is about the system that ensures that services such as water parks, slides, and shopping malls are in good working order. | Formica & Olsen, 1998 |
| *C42* | *Continuity* | Since all the events, products, and designs in the theme park have one and multiple themes, this is about the continuous, clear, and easy understanding of these themes. | Wong & Cheung, 1999; Pikkemaat & Schuckert, 2007 |
| *C43* | *Functionality* | It is about the proper and effective, utility, and functionality of all the goods, services, and experiences in the theme park. | Pikkemaat & Schuckert, 2007; Milman et al., 2010 |
| *C44* | *Performance Sustainability* | It is about the continuity of the quality of the goods, services, and experience in theme parks in the perception of consumer satisfaction. | Milman et al., 2010 |

**Table 1.** Theme park satisfaction criteria.

# 4. Methodology

In the following subsections, the LBWA model is used to determine the importance levels of the main and sub-criteria used in evaluating theme parks, and the steps of the model are mentioned. The reason why this model is preferred is that the method is current and easily applicable.

The main and sub-criteria that may affect the visitor in theme park satisfaction have been prepared using the literature. All the criteria to be analyzed and evaluated in other parts of the study have been classified by the authors using the literature.

## 4.1. LBWA Model

In the literature, many 'MCDM methods' have been used in determining the weights of criteria. The Analytical Hierarchy Process (AHP) especially, has been one of the methods used for many years (Saaty, 1982). However, in recent years, the SWARA Method (Stanujkic et al., 2015) and the Best-Worst Method (Rezaei et al., 2015) have been subjective assessment methods frequently used in weighting the criteria. In addition, a method called LBWA was introduced by Žižović and Pamučar (2019) for the first time as a subjective assessment method. Therefore, since it is a new methodology, there are only a limited number of studies using the LBWA method (Biswas et al., 2021; Božanić et al., 2020; Deveci et al., 2020; Ecer et al., 2021; Gençkaya et al., 2021; Hristov et al., 2021; Torkayesh et al., 2021; Wu et al., 2021; Pamučar and Görçün, 2022).

The LBWA method provides great convenience in that it allows a large number of criteria comparisons, does not force the decision-maker to compare, and does not have a structure that will cause inconsistency. The LBWA model has several main advantages over other subjective methods based on mutual comparison of criteria (Žižović & Pamučar, 2019):

(1) The LBWA model allows the calculation of weight coefficients with fewer (n-1) criteria comparisons.

(2) The algorithm of the LBWA model does not become more complex with an increase in the number of criteria. This makes the LBWA model suitable for use in MCDM models with multiple criteria.

(3) By applying the LBWA model, the most appropriate weight coefficients values are obtained with a simple mathematical layout that eliminates inconsistencies in expert evaluations; often inconsistencies can occur in the Best-Worst Method and Analytical Hierarchy Process.

(4) The elasticity coefficient of the LBWA model helps to make additional corrections in the values of the weight coefficients depending on the preferences of the decision-makers after the criteria are compared. Thanks to this feature of the LBWA model, the sensitivity analysis made by the decision-maker allows the weight values of the criteria to be changed.

## 4.2. Steps of the LBWA Model

A multi-criteria model S = {C1, C2, ..., Cn} with n number of criteria is considered. The following steps are used to determine the weight values based on these criteria by the LBWA method (Žižović & Pamučar, 2019):

Step 1: The most important criteria are determined by the decision-maker from the criteria set S = {C1, C2, ..., Cn}.

Step 2: The criteria are grouped according to their importance. Therefore, the decision-maker creates subsets of criteria according to the following levels:

Level S1: When the significance level of each of the criteria in the S cluster is equal to or up to twice the importance of the most important criterion (the most important criterion is between one and two times more important than the specified criteria), these criteria are grouped at the S1 level.

Level S2: When the significance level of each of the criteria in the S cluster is exactly twice as important, or up to three times less than the importance of the most important criterion than the most important criterion (the most important criterion is two to three times more important than the specified criteria), these criteria are grouped at S2 level.

Level S3: When the significance level of each criterion in the S cluster is exactly three times less important than the level of importance of the most important criterion, or up to four times less than the importance of the most important criterion (the most important criterion is three to four times more important than the specified criteria), these criteria are grouped at S3 level.

Level Sk: When the significance level of each of the criteria in the S cluster is exactly k times less important than the importance level of the most important criterion, or up to k+1 times less than the importance level of the most important criterion (the most important criterion is between k and k+1 times more important than the specified criteria), these criteria are grouped at the Sk level.

A classification of the decision-making criteria is provided by applying the rules given above. In a sense, it groups the criteria according to their significance level. If the significance of the criterion Cj is represented by s(Cj) with $j \in \{1, 2, \dots, n\}$ the set

$(i \in \{1, 2, \dots, k\})$ $S = S_1 \cup S_2 \cup \dots \cup S_k$is reached for each level. These processes are summarized in Equation 1.

$$S_i = \{C_{i_1}, C_{i_2}, \dots, C_{i_s}\} = \{C_j \in S: i \leq s(C_j) < i + 1\} \quad (1)$$

In addition, $S_p \cap S_p = \emptyset$ for each $p, q \in \{1, 2, \dots, k\}$. In this way, a well-defined part of the set of S criteria is obtained.

Step 3: By using the subsets (levels) formed by the effect of the criteria, the criteria are compared with their degrees of importance. Each $^{C_{i_p} \in S_i}$ criterion in the subset of $^{S_i = \{C_{i_1}, C_{i_2}, \dots, C_{i_s}\}}$ is assigned an integer $I_{i_p} \in \{0,\ 1, \dots, r\}$

I1 = 0 value is assigned for the most important criterion. If the $C_{i_p}$ criterion is more important than the $C_{i_p}$ criterion Ip < Iq; If the $C_{i_p}$ criterion is of equal importance to the $C_{i_p}$ criterion, then Ip = Iq is assigned. For a comparison of criteria, the location of the maximum value in the scale is determined by applying equation 2.

$$r = max\{|S_1|, |S_2|, \dots, |S_k|\} \quad (2)$$

Step 4: After determining the maximum value in the scale (r) in the comparison of criteria using Equation 2, the elasticity coefficient $r_0 \in N$ (N: set of real numbers) is determined, provided that the $r_0 > r,\ r = max\{|S_1|, |S_2|, \dots, |S_k|\}$ condition is fulfilled.

Step 5: The impact function of the criteria is calculated. The influence function $f: S \rightarrow R$ is defined as follows. For each $C_{i_p} \in S_i$ criterion, the impact function of the criterion can be defined (i: the level/subset of the criterion, $r_0$: the elasticity coefficient, $I_{i_p} \in \{0,\ 1, \dots, r\}$: the assigned value of the $C_{i_p}$criterion at the observed level).

$$f\left(C_{i_p}\right) = \frac{r_0}{i.r_0 + I_{i_p}} \quad (3)$$

Step 6: The optimum values of the weight coefficients of the criteria are calculated. The weighting coefficient of the most important criterion is calculated using Equation (4):

$$w_1 = \frac{1}{1 + f(C_2) + \cdots + f(C_n)} \quad (4)$$

The values for the weight coefficients of the other criteria are obtained using Equation (5) (j = 2, 3, ..., n, provided that n represents the number of criteria).

$$w_j = f(C_j).w_i \quad (5)$$

## 5. Findings

In this section, the demographic information of the decision-makers participating in the research is included. Furthermore, criterion weights were calculated by considering the steps of the model based on the answers given by the participants. The LBWA method was used to prioritize the criteria used in evaluating theme parks in the study. Eight decision-makers experienced in theme parks, whose demographic information is specified in Table 2, were selected. A face-to-face questionnaire was applied under the method.

| Decision makers | Gender | Age | Job |
|---|---|---|---|
| **DM1** | Female | 40 | Instructor |
| **DM2** | Male | 32 | Store manager |
| **DM3** | Male | 40 | Owner of travel agent |
| **DM4** | Male | 40 | Instructor |
| **DM5** | Male | 30 | Research assistant |
| **DM6** | Female | 37 | Project manager |
| **DM7** | Female | 37 | Instructor |
| **DM8** | Male | 36 | Owner of travel agent |

**Table 2.** Demographic information of decision-makers.

The evaluation steps of the results of the survey with decision-maker 1 (DM1) at the level of main criteria (C1-Theme and design quality, C2-Service quality, C3-Entertainment quality, C4-Technological and functional quality) are as follows:

**Step 1:** In the survey with DM1, it was found that the most important of the S = {C1, C2, C3, C4} criteria was C3.

**Step 2:** DM1 formed the subsets of the criteria according to the levels as follows:

*Level* S1: DM1 stated that C3 is the most important criterion for him. Therefore, DM1 considered the C3 criterion to be between one and two times more important than the C1 and C2 criteria. Therefore, C1 and C2 criteria are grouped at the S1 level.

*Level* S3: DM1 is grouped at level $S_3$ of the $C_4$ criterion, because it states that the $C_3$ criterion is three to four times more important than the C4 criterion.

The clusters obtained according to Equation 1 were determined.

$$S_1 = \{C_1, C_2\}$$

$$S_3 = \{C_4\}$$

***Step 3:*** The significance level differences of the criteria in the subsets are presented by DM1. The largest number of cluster elements (Equation 2) $S_1$ and $S_3$ are taken as the maximum value that can be used in the comparison.

$$\left.\begin{matrix} S_1 = \{C_3, C_1, C_2\} \\ S_3 = \{C_4\} \end{matrix}\right\} \Rightarrow r = max\{|S_1|, |S_3|\} = 3$$

Therefore, the value of $\left(I_{i_p} \in \{0, 1, 2, 3\}\right)$ 0, 1, 2, or 3 can be used in comparing the criteria at each level. However, for $C_3$, which is the most important criterion, it should give a value of 0 in level 1. According to this, the evaluation made by DM1 for each level is as follows:

*Level* S1: I1 = 2, I2 = 1, I3 = 0

*Level* S3: I4 = 3

***Step 4:*** In a comparison of the criteria, after determining the maximum value ($r = 3$) in the scale, the elasticity coefficient was taken as 4 the closest integer ($r_0 = 4$), to satisfy the $r_0 > r$.

***Step 5:*** The impact function of the criteria is calculated for each level using equation 3 as follows:

*Level* **S1:** $(r0 = 4; i = 1; I1 = 2, I2 = 1, I3 = 0)$

$$f(C_1) = \frac{r_0}{i.r_0 + I_{i_p}} = \frac{4}{1.4 + 2} = \frac{4}{6} = 0{,}667$$

$$f(C_2) = \frac{r_0}{i.r_0 + I_{i_p}} = \frac{4}{1.4 + 1} = \frac{4}{5} = 0{,}800$$

$$f(C_3) = \frac{r_0}{i.r_0 + I_{i_p}} = \frac{4}{1.4 + 0} = \frac{4}{4} = 1{,}000$$

*Level* **S3:** $(r0 = 4; i = 3; I4 = 3)$

$$f(C_4) = \frac{r_0}{i.r_0 + I_{i_p}} = \frac{4}{3.4 + 3} = \frac{4}{15} = 0{,}266$$

***Step 6:*** The weight coefficient of the most important criterion is calculated by equation 4.

$$w_3 = \frac{1}{1 + f(C_1) + f(C_2) + f(C_4)} = \frac{1}{1 + 0{,}667 + 0{,}800 + 0{,}267} = \frac{1}{2{,}733} = 0{,}366$$

The values of the weight coefficients of the other criteria are obtained using Equation (5).

$$w_1 = f(C_1) \cdot w_3 = 0{,}667 \cdot 0{,}366 = 0{,}244$$

$$w_2 = f(C_2) \cdot w_3 = 0{,}800 \cdot 0{,}366 = 0{,}293$$

$$w_4 = f(C_4) \cdot w_3 = 0{,}266 \cdot 0{,}366 = 0{,}097$$

Therefore, the weight values for DM1 at the level of the main criteria, respectively.

It is concluded that $w_j = (0{,}244; 0{,}293; 0{,}366; 0{,}097)$ and is shown in Table 2.

In addition, DM1 was asked to complete the questionnaire designed according to the LBWA method separately for the sub-criteria, and the weights were determined by following the six steps in the LBWA method for each sub-criterion. The ultimate weight of the sub-criterion was obtained by multiplying the weight of the main criterion with the weight of the sub-criterion.

For instance, for DM1, the weight of $C_1$, the first main criterion, was calculated as 0,244 and the weight of $C_{11}$, one of the sub-criteria of $C_1$, was calculated as 0,226. To find the final weight of $C_{11}$, the weight of the main criterion and the sub-criterion was multiplied $(0{,}244 \times 0{,}226 = 0{,}055)$. All the values calculated for DM1 are given in Table 3.

| Main Criteria | | | Sub-Criteria | | | |
|---|---|---|---|---|---|---|
| Main Criteria | | Weight | Sub-Criteria | | Weights at Sub-Criteria Level | DM1 Ultimate Weights (Main criteria weight) X (Sub-criteria weight) |
| C1 | Theme and Design Quality | 0,244 | C11 | Uniqueness | 0,226 | 0,055 |
| | | | C12 | Innovation | 0,103 | 0,025 |
| | | | C13 | Creativity and Imagination | 0,188 | 0,046 |
| | | | C14 | Theme Usage | 0,067 | 0,016 |
| | | | C15 | Design Quality | 0,188 | 0,046 |
| | | | C16 | Atmosphere | 0,188 | 0,046 |
| | | | C17 | Environmental Integration | 0,039 | 0,010 |
| C2 | Service Quality | 0,293 | C21 | Landscaping | 0,104 | 0,031 |
| | | | C22 | Cleanliness | 0,128 | 0,037 |
| | | | C23 | Qualified Personnel | 0,230 | 0,067 |
| | | | C24 | Capacity and Queue Management | 0,115 | 0,034 |
| | | | C25 | Customer Services | 0,077 | 0,022 |
| | | | C26 | Safety and Security | 0,287 | 0,084 |
| | | | C27 | Quality of Food and Beverage | 0,060 | 0,018 |
| C3 | Entertainment quality | 0,366 | C31 | Entertainment Options | 0,405 | 0,148 |
| | | | C32 | Experience Options | 0,270 | 0,099 |
| | | | C33 | The Feeling of Real-Life Escape | 0,324 | 0,119 |
| C4 | Technological and Functional Quality | 0,098 | C41 | Technological Infrastructure | 0,178 | 0,017 |
| | | | C42 | Continuity | 0,178 | 0,017 |
| | | | C43 | Functionality | 0,198 | 0,019 |
| | | | C44 | Performance Sustainability | 0,446 | 0,043 |
| Total | | 1,000 | Total | | | 1,000 |

**Table 3.** Weights of main and sub-criteria for DM1.

The main criterion weights, as a result of the evaluation of the answers with the LBWA method for the main criteria obtained from the decision-makers, are given in Table 4. Integrated (ultimate) main criterion weights were reached by averaging the weights of the main criteria obtained from all decision-makers.

Therefore, it was found that the most important main criterion was 'C3 - Entertainment Quality' with a weight value of 0,338.

| Main Criteria | | Criterion Weights | | | | | | | | Ultimate Main Criteria Weights |
|---|---|---|---|---|---|---|---|---|---|---|
| | | DM1 | DM2 | DM3 | DM4 | DM5 | DM6 | DM7 | DM8 | |
| C1 | Theme and Design Quality | 0,244 | 0,294 | 0,333 | 0,321 | 0,270 | 0,081 | 0,090 | 0,098 | 0,216 |
| C2 | Service Quality | 0,293 | 0,294 | 0,267 | 0,214 | 0,270 | 0,378 | 0,313 | 0,424 | 0,307 |
| C3 | Entertainment Quality | 0,366 | 0,294 | 0,267 | 0,321 | 0,337 | 0,378 | 0,418 | 0,318 | 0,338 |
| C4 | Technological and Functional Quality | 0,098 | 0,118 | 0,133 | 0,143 | 0,123 | 0,162 | 0,179 | 0,159 | 0,139 |
| Total | | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 |

**Table 4.** Calculated main criteria weights for all decision-makers and integrated (ultimate) main criteria weights.

The weights of the sub-criteria in Table 3 calculated for DM1 are also calculated for other decision-makers and are shown in Table 4. After the obtaining average of the sub-criterion weights obtained from eight decision-makers, the final sub-criterion weights were calculated and given in the last column in Table 5.

| Sub-Criteria | | Sub-Criteria Weights | | | | | | | | Ultimate Sub-Criteria Weights |
|---|---|---|---|---|---|---|---|---|---|---|
| | | DM1 | DM2 | DM3 | DM4 | DM5 | DM6 | DM7 | DM8 | |
| C11 | Uniqueness | 0,055 | 0,053 | 0,076 | 0,028 | 0,042 | 0,013 | 0,017 | 0,015 | 0,038 |
| C12 | Innovation | 0,025 | 0,053 | 0,011 | 0,053 | 0,042 | 0,013 | 0,008 | 0,015 | 0,028 |
| C13 | Creativity and Imagination | 0,046 | 0,029 | 0,063 | 0,061 | 0,049 | 0,007 | 0,010 | 0,017 | 0,035 |
| C14 | Theme Usage | 0,016 | 0,014 | 0,063 | 0,046 | 0,038 | 0,012 | 0,006 | 0,015 | 0,026 |
| C15 | Design Quality | 0,046 | 0,064 | 0,063 | 0,046 | 0,042 | 0,007 | 0,010 | 0,015 | 0,037 |
| C16 | Atmosphere | 0,046 | 0,029 | 0,034 | 0,061 | 0,042 | 0,016 | 0,034 | 0,015 | 0,035 |
| C17 | Environmental Integration | 0,010 | 0,053 | 0,022 | 0,026 | 0,014 | 0,013 | 0,004 | 0,005 | 0,018 |
| C21 | Landscaping | 0,031 | 0,066 | 0,046 | 0,026 | 0,049 | 0,061 | 0,023 | 0,039 | 0,043 |
| C22 | Cleanliness | 0,037 | 0,055 | 0,046 | 0,016 | 0,049 | 0,061 | 0,069 | 0,061 | 0,049 |
| C23 | Qualified Personnel | 0,067 | 0,028 | 0,025 | 0,043 | 0,023 | 0,035 | 0,038 | 0,061 | 0,040 |
| C24 | Capacity and Queue Management | 0,034 | 0,012 | 0,029 | 0,019 | 0,059 | 0,081 | 0,034 | 0,069 | 0,042 |
| C25 | Customer Services | 0,022 | 0,047 | 0,027 | 0,029 | 0,016 | 0,061 | 0,025 | 0,061 | 0,036 |
| C26 | Safety and Security | 0,084 | 0,055 | 0,064 | 0,037 | 0,025 | 0,070 | 0,038 | 0,091 | 0,058 |
| C27 | Quality of Food and Beverage | 0,018 | 0,030 | 0,029 | 0,043 | 0,049 | 0,010 | 0,086 | 0,042 | 0,038 |
| C31 | Entertainment Options | 0,148 | 0,090 | 0,062 | 0,068 | 0,104 | 0,116 | 0,082 | 0,122 | 0,099 |
| C32 | Experience Options | 0,099 | 0,113 | 0,144 | 0,095 | 0,104 | 0,116 | 0,144 | 0,098 | 0,114 |
| C33 | The Feeling of Real-Life Escape | 0,119 | 0,090 | 0,062 | 0,158 | 0,130 | 0,146 | 0,192 | 0,098 | 0,124 |
| C41 | Technological Infrastructure | 0,017 | 0,039 | 0,024 | 0,024 | 0,035 | 0,051 | 0,083 | 0,047 | 0,040 |
| C42 | Continuity | 0,017 | 0,031 | 0,021 | 0,036 | 0,029 | 0,043 | 0,033 | 0,023 | 0,029 |
| C43 | Functionality | 0,019 | 0,031 | 0,055 | 0,053 | 0,029 | 0,037 | 0,030 | 0,062 | 0,040 |
| C44 | Performance Sustainability | 0,043 | 0,016 | 0,033 | 0,030 | 0,029 | 0,032 | 0,033 | 0,027 | 0,030 |
| Total | | | | | | | | | | 1,000 |

**Table 5.** Calculated sub-criteria weights for all decision-makers and integrated (ultimate) sub-criteria weights.

## 6. Discussion and Conclusions

Theme parks are the leading actors in the tourism industry in creating demand and meeting customer demands and needs. As a result, theme parks pay attention to satisfaction to increase the number of visitors and gain a high market share. Theme parks offer a variety of areas, such as entertainment, shopping, and food and beverage. These all offered opportunities are carried out to satisfy customer expectations and needs, and to ensure customer satisfaction. It is extremely important in the competitive environment to evaluate the criteria that will ensure that the visitors leave the theme park satisfied. Therefore, this study aims to measure the satisfaction perceptions of customers and to determine which criteria are more important for them. The study expands the literature with current findings and makes important contributions to theme park managers. This also study reveals what understanding should be taken to improve satisfaction and maintain satisfaction by examining the satisfaction criteria.

Reliable outputs have been obtained with the LBWA model, which is used to determine which criteria are particularly focused on in the theme park by customers and which criteria create satisfaction. According to the results obtained with the LBWA method, which is a model for determining the weight coefficients of the criteria, it has been determined that the most important criterion is 'entertainment quality'. This criterion provides fun, experience, and escape experiences of the theme park and expresses an important customer perception. A high level of entertainment quality enables a theme park to gain a competitive advantage and increase customer loyalty (Tsang et al., 2012). In a similar study, the entertainment factor examined as the theme park evaluation criterion was determined as the most important criterion by the visitors (Milman, 2009). The positive effect of the entertainment criterion on

customer satisfaction has been supported by a number of studies as well (Hosany & Gilbert, 2010).

Among the sub-criteria in the main criteria, the ranking was made according to the weight of importance. This ranking resulted in the criteria of entertainment quality as 'the feeling of real-life escape', 'experience options' and 'entertainment options'. The fact that the criterion of escape from real life is an important criterion of entertainment quality in creating satisfaction is related to the fact that theme parks cause a feeling of being in a different time and place. The experience options included in the entertainment quality criteria show that the visitors are experience-oriented and want diversity. The experience industry stands out from the service industry. This is because experiences are generally emotional and engaging for visitors and are much more valuable than the products or services offered (Ellis & Rossman, 2008). The variety of entertainment options is important for entertainment quality for visitors to spend their time efficiently and effectively in theme parks. Due to the increase in the number of theme parks, and the inadequacy of merely goods and services in customer satisfaction, the demand for events containing experience has increased. Due to the structure of theme parks, they offer five experiences. These five experiences are intellectual, behavioral, emotional, sensory, and relational.

Another criterion that determines theme park visitor satisfaction is the service quality criterion. This criterion shows that theme parks operating in the tourism and service industry should also attach importance to the criteria regarding service quality. Therefore, to maintain success, satisfaction, and competitiveness in the long term, theme parks should be improved and developed according to the service quality criteria. Among the sub-criteria in the main criteria, the ranking was made according to the weight of importance. This ranking was concluded as 'safety and security', 'qualified personnel', 'cleaning', 'capacity and queue management', 'landscaping', 'customer service' and 'food and beverage quality' in the service quality criteria. The fact that safety and security criteria are the most important sub-criteria under the service quality criterion is supported by the literature. In a study by Pikkemaat and Schuckert (2007), it was determined that the safety and security of theme parks are among the important factors in theme park success. The sub-criteria of qualified personnel is also consistent with the literature findings. Bakır and Baxter (2011) found that the criterion of qualified personnel is important for visitors to have fun. It is supported by the literature findings that the cleanliness criterion is also an important criterion for satisfaction and success (McClung, 1991; Milman et al., 2012). Seasonal and temporal densities should be taken into consideration to manage capacity and queue management. Capacity and queue management, which are important in ensuring satisfaction as a sub-criterion of service quality, should be carefully paid attention to in terms of planning, managing, and leading (Raluca & Gina, 2008). Essential regulations should be made to optimize visitor flows in theme parks and to minimize waiting times at events. Theme park managers and planners are also required to forecast density to compensate for the density of the park, shops, food, and beverage services. Moreover, when the demand for slides and events fluctuates throughout the day, this can result in congestion for parking and congestion at rides and events. The fact that landscaping, which is another sub-criterion, is among the criteria that provide satisfaction can be explained by the importance of the visitors to ensure that the areas within the park boundaries are organized and coordinated. The

reason why customer service is among the sub-criteria that creates satisfaction is related to the fact that visitors give importance to someone who can answer their questions when necessary and find solutions to their problems through effective communication. Considering the quality of food and beverage in the theme park, theme parks should offer a variety of food and beverage options. Having many food and beverage options can be expressed as an important component of the satisfaction of visitors.

Following the entertainment and service quality criteria, the theme and design quality and technological and functional quality are ranked according to their importance level. Examining the satisfaction criteria has enabled the determination of the importance levels among the criteria. The lack of a study on theme park satisfaction criteria in the literature means that this study will contribute to the literature and the tourism industry in general. Achieving a high level of satisfaction brings about many attitudes and various behavior. As satisfaction can have a positive effect on revisiting theme parks (Tsang et al., 2016), it also positively affects the intention to recommend (Bigné et al., 2001; Grappi & Montanari 2011; Prayag et al., 2013; Engeset & Elvekrok 2015).

## 7. Suggestions and Limitations

The importance given by the visitors to the satisfaction criteria was determined by evaluating the research findings and examining the results. New and more dynamic and interactive elements should be periodically prepared for experience options to ensure satisfaction. It is necessary to use and evaluate the data obtained from this research to respond to changing consumer demands and needs, create customer loyalty and revisit intention. Improvement and development, by taking into account the criteria, can lead to more demand and higher revenue.

For theme parks to become more attractive, it is necessary to regularly and continuously offer new entertainment areas and attractions, and to emphasize that the entertainment is lively and dynamic. It is necessary to benefit from experience-based marketing activities for sustainable success and competitive advantage beyond traditional marketing activities.

Although the current paper makes important recommendations, it also has certain limitations. First, determining the criteria weights according to the evaluations of the experts may cause a number of situational and periodic differences. Secondly, the LBWA method is much newer among multi-criteria decision-making methods. Therefore, the fact that the technique has not been experienced in different studies can be considered to be a limitation.

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