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The Effect of Smartphone Features on Customer Engagement: The Mediating Role of Brand Value

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Abstract

The continuous increase in the use of smartphones and the rapid growth in the demand for these devices increase the interest in the subject. The smartphone market has attracted the attention of many businesses due to the increasing usage rates and has resulted in new brands and models joining the competition in the market. This research aims to examine the relationships between smartphone features, customer engagement, and brand value in the context of Turkish smartphone users. For this purpose, a theoretical model is proposed to encompasses the interactions between these variables. The model is tested by analyzing the data obtained from 726 Turkish smartphone users. The findings reveal that smartphone features have a strong influence on brand value and brand value has a strong influence on customer engagement. Smartphone features alone do not affect customer engagement. On the other hand, brand value is found to mediate the relationship between smartphone features and customer engagement.

Keywords: Smartphone Features, Customer Engagement, Brand Value, Consumer Behavior

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1. INTRODUCTION

The mobile telephony market is one of the fastest-growing service segments in telecommunications. The mobile telephony industry is also a highly innovative segment, with the smartphone becoming the standard configuration across different types of mobile devices. Although devices offering phone and computer features were developed in the 1970s, the commercial success of smartphones began in late 2006 with the launch of the Blackberry. Apple launched the first iPhone model in 2007 and shortly afterwards Samsung produced the Samsung Instinct in June 2008 as a competitor to the iPhone. Since then, the smartphone market has witnessed intense competition among incumbents and new entrants. Since 2008, the smartphone industry has grown steadily in terms of market size and number of models and manufacturers. The number of smartphone subscriptions exceeds the number of users, as many people use more than one smartphone (Bacalhau, 2023, p. 9; Cecere et al., 2015). Out of the global population of over eight billion (8.05 billion), 86% (6.93 billion) use smartphones. This figure is expected to reach 7.7 billion by 2027. The share of smartphones in web traffic is 59% and the average daily time spent on smartphones is 5 hours and 25 minutes. It is predicted that 72.6% of internet users worldwide will access websites through their smartphones in 2025 (Mobisad, 2023, p. 13). The number of smartphone users in Turkey is projected to increase by 13.5% between 2024 and 2029, gaining approximately ten million new users and reaching a new peak of 84.07 million users in 2029. This upward trend has steadily risen in the past years (Dierks, 2024). Smartphones are rapidly becoming one of the most effective tools for marketing since the advent of the Internet (Hanley & Becker, 2006, p. 68).

One of the most important issues in launching a new product is identifying the features that will enable a product to capture the highest market share. Compared to older phones, smartphones offer many features in addition to information such as speech capabilities and text messages. The technological development of the smartphone and the efficiency of the phone are important factors in choosing the appropriate marketing style. New smartphones have large screens and high volumes of storage space, which contribute to the marketing template (Alghizzawi et al., 2018, p. 92). Most products emerging in the smartphone market seem to reflect the belief among manufacturers that more features are necessary to be competitive. Some users, for example, early adopters, may want many features in the products they buy (Glasscock & Wogalter, 2006, p. 1259). According to one study, the loyalty of users of goods and services and the quality of the visitor base directly influence the expected outcomes of the service or good (Ström et al., 2014).

Thoughtful companies will seek to fully understand the customer's decision-making process, and their entire experience of learning, choosing, using, and even adopting products. Between alternative processes and decision-making is consumer buying interest. Purchase interest arises after an alternative evaluation process and during the evaluation process, the person makes a series of choices about the product to be purchased based on brand and interest (Kotler et al., 1999; Kotler and Keller, 2016).

Bacalhau (2023), through interviews and surveys, reveals the key factors that influence consumer preferences in the smartphone market. According to the research, factors such as build quality, camera quality, ecosystem compatibility, price, and memory have a great influence on purchasing decisions. Arif et al. (2015) show in their study that the majority of smartphone users will primarily consider product features. The smartphone provider should investigate which features users demand, such as higher image resolution of the camera, better and faster operating system, smarter and lighter design, and other innovative product features for both software and hardware. Economides et al. (2009) investigated students' perceptions of the importance and costs of mobile devices. It was found that users tended to consider features such as battery life, mp3 player, video camera, still camera, storage memory, Bluetooth, design and elegance, clock, calendar, organizer and reminder as important. Çakır et al. (2014) concluded in their study on students that product features, brand and advertising efforts affect users' smartphone purchase preferences. Uludağ et al. (2018) conducted a study on the mediating role of customer satisfaction in the effect of brand image on customer loyalty in the smartphone market. As a result of the study, it was determined that brand image has an impact on customer satisfaction and customer loyalty, and at the same time, customer satisfaction directly affects customer loyalty. In addition, it was concluded that customer satisfaction is a 'partial mediator' variable in the effect of brand image on customer loyalty.

2. LITERATURE REVIEW

2.1. Smartphone Features

Product features relate to attributes that are intended to meet customers' needs and increase satisfaction by facilitating product use (Kotler & Armstrong, 2007). For smartphones, product features are divided into hardware and software. Hardware includes physical features (design and size, etc.) and software includes operating systems and applications (Lay-Yee et al., 2013). In this study, 17 different features of smartphones highlighted by the literature and the researcher were evaluated: design, operating system, storage capacity, battery life, screen size, screen resolution, security, camera and lens, sound system, durability, RAM, device size, device weight, wireless and fast charging, software, price, warranty, and service support (Glasscock & Wogalter, 2006).

Design, which is evaluated in terms of ergonomics and aesthetic preferences, enables stylish and useful devices to be carried comfortably in daily life (Bloch, 1995; Crilly et al., 2004). Industrial designers and manufacturers should consider individual preferences in product design (Glasscock & Wogalter, 2006). The operating systems that run the basic software and user interface of the device are usually specified and installed by the manufacturer. They enable consumers to use their devices and applications. The most common operating systems are iOS and Android (Arif et al., 2015, p. 113). Storage capacity refers to the space available for apps, music, photos, videos, and files. High storage capacity allows users to store more data and is expressed in gigabytes (GB). Battery life determines how long the device can be used on a single charge and is expressed in hours. Long battery life allows users

to charge their devices less frequently, which offers ease of use. Small screens provide ease of transportation, while large screens are preferred for multimedia consumption. Screen resolution determines the amount and density of pixels, delivering sharper and more detailed images. High resolution significantly improves the user experience. Security encompasses security measures that protect users' personal data and online activities. It includes technical and software measures such as password protection, security updates, and data encryption. Camera and lens are hardware components that provide the ability to take photos and videos. The quality of the camera and lens greatly affects shooting quality and user experience. Audio systems include hardware and software components that provide the necessary audio output for phone calls, media listening, and voice applications. Durability refers to the device's resistance to environmental factors such as water, dust, impact, and thermal effects. Durability ensures that the device is safe for daily use and extends its lifespan. RAM is a type of temporary memory that enables fast and efficient operation of the device. RAM enables multitasking and fast switching between applications. The size and weight of the device have a significant impact on portability and user comfort. It is usually specified in grams/ounce. Wireless charging allows users to charge their devices without using cables. Fast charging allows devices to be charged in less time. Price refers to the cost of the device and is an important factor in users' purchasing decisions. The price is determined by factors such as the device's hardware specifications, brand, model, and market demand. Warranty and service support provides users with protection and technical support against problems they may experience after purchasing a device. The warranty covers the protection of the device against manufacturing defects within a certain period and provides after-sales technical support. Cecere et al. (2015) investigate whether a dominant design has emerged in the smartphone industry. In particular, they examine the evolution of hardware components based on an original product specification dataset that includes all smartphones released between 2004 and 2013. The results show that despite some convergence in the introduction of vertical innovations, product differentiation still characterizes competition among manufacturers and a dominant design has not yet emerged.

2.2 Customer Engagement

The concept of engagement, which is based on fields such as psychology and organizational behavior, has also found a place in the marketing literature and preliminary research has revealed that consumers who show engagement may show more loyalty to focus brands. Kahn (1990) considered engagement in the business world as personal engagement (Kahn, 1990). Personal engagement is defined as the level of integration between individuals' interests and work tasks. Customer engagement (CE) is defined as a psychological state or process that leads to customer loyalty (Brodie et al., 2011). Customer engagement research has received increasing attention due to its critical role in generating outcomes such as positive customer experience and brand trust, which in turn influence future purchase intentions (Vivek et al., 2012; Harrigan et al., 2017).

Bowden (2009) defines customer engagement as the psychological mechanisms that explain the process by which a service brand builds loyalty in new customers and maintains loyalty in existing customers (Bowden, 2009). Ilić (2008) defines customer engagement as a contextual process that consists of interactions with commitment objects over time and can exist at different levels. Patterson et al. (2006) define customer engagement as the level of physical, cognitive, and emotional presence in a customer's relationship with a service organization (Hollebeek, 2011, p. 791). Customer engagement refers to how consumers' intrinsic motivations strengthen their level of identification with the brand community and its positive outcomes through interacting or collaborating with brand community members. Research shows that committed customers value their relationship with the business, are less sensitive to price, contribute to the business's knowledge acquisition process by providing feedback, shop more, avoid opportunistic behavior, and tend to play a more active role in product and service processes by cooperating with the business (Altunoğlu & Saraçoğlu, 2013).

Researchers define customer engagement from two different perspectives: cognitive and behavioral. The cognitive perspective includes elastic, behavioral, and emotional components, while the behavioral perspective focuses on customer engagement and experience (Brodie et al., 2011; van Doorn et al., 2010). According to Brodie et al. (2011), customer engagement, experience, and shared values contribute to relationship marketing. Customer engagement is conceptualized as holistic brand relationships (Kumar & Pansari, 2016), cognitive and behavioral components (Hollebeek et al., 2014), and processes that lead to customer loyalty (Bowden, 2009), driven by personal motivations such as sharing information, blogging, and recommendations. Specifically in the smartphone context, cognitive engagement refers to customers' focus on the smartphone and its brand; affective engagement refers to the long-term excitement and satisfaction experienced while using the smartphone; and behavioral engagement refers to plans to use the brand. Customer engagement refers to a customer's strong commitment and desire to maintain a relationship with a brand or brand organization (Hollebeek, 2011).

Customer engagement is not limited to repeatedly buying the same brand. It includes the customer's tendency to continue to prefer the same brand even when competitors offer more attractive offers (Nguyen & Leblanc, 2001, p. 229). In this context, customer engagement can be defined as the consumer's attitude or behavior of frequently choosing a particular product, service, brand, or place of shopping among many alternatives. According to another definition, customer engagement involves a customer's desire to recommend or maintain a relationship with the business that he/she has been shopping with (Too et al., 2001, p. 292). Engagement can also be expressed as a customer's preference for a particular brand or store, continuing to search for it even if they cannot reach it, and even defending it when necessary. Research shows that customer engagement positively affects business performance. Engagement customers can increase the profitability of the business through repeat purchases and therefore customer loyalty provides a significant competitive advantage for the business. The cost of acquiring new customers is higher than the cost of retaining old customers, which emphasizes the

importance of customer engagement (Kim & Yoon, 2004, p. 757). In the literature, the existence of a direct link between customer engagement and behaviors such as loyalty has been consistently emphasized. However, it may be useful to evaluate this relationship through the mediation process. In this study, the mediating effect of brand value on customer engagement is investigated.

2.3. Brand Value

Brand value is treated as both an asset and a process by the most influential national and international studies. These studies focus on well-established brands and provide strong evidence that brand value is a source of value and an indicator of superior performance for businesses (Parris & Guzmán, 2023, p. 195). Brand value is a critical element in terms of both the value it offers to consumers and the competitive advantage it provides to businesses.

Farquhar (1989) defined brand value as the added value that a brand adds to a product, resulting from a consumer's positive evaluation or attitude towards the branded product (Farquhar et al., 1989, p. 24). Aaker (1991) defines brand value as the sum of the assets and liabilities associated with the brand name and symbol that increase or decrease the value offered to a business or its customers through a product or service. Keller (1993) defined brand value as the difference that brand information creates in consumer reactions. Keller's approach emphasizes that intangible activities are more difficult to market than tangible activities. In this context, it is argued that consumer-based brand value stems from more positive responses to the marketing efforts of businesses (Keller, 1993, p. 8). Doyle (2008) evaluates the brand value of businesses by examining the intangible assets they possess, asserting that the true capital of many businesses today lies in their brands (Kapferer, 2012). Alkibay (2005) emphasizes that brand value is the additional value added to the product by the positive impressions created by the brand symbol and name in the minds of consumers. Erdil (2015) stated that the concept of brand value is especially important in the event of the sale of the brand with all its assets or mergers. In addition, the brand is an important tool in determining comparative positioning with other competing businesses. Kriegbaum (1998) states that the brand has come to the forefront as a competitive tool and that protecting and increasing the brand value of businesses is a competitive strategy. Brand value is important as it provides a competitive advantage, creates customer loyalty, and enables the brand to charge high prices for its products. Knapp (2003) states that the formation of brand value depends on the responsibility of all business employees. In this context, the feelings and thoughts of the brand's partners, employees, and consumers towards the brand play a critical role in the creation of brand value.

Haudi et al. (2022) state that trust in marketing is a catalyst for establishing and maintaining long-term relationships and is an element that leads to a unique brand value and differentiation that is engraved in the minds of consumers. Aaker (1996) states that depending on the effectiveness of brand value, repurchase of products or services and loyalty to the brand increase, which enables the brand to develop new products and services and transfer brand value to these products/services.

What is clear from the previous and subsequent discussions is that brand value is a multidimensional construct, and any measurement attempt needs to recognize these different dimensions (Faircloth et al., 2001, p. 63). Brand value has been studied from a variety of perspectives, from the point of view of producers, retailers or consumers, and analyzed whether its benefits are felt by the business or consumers (Christodoulides et al., 2015). Academic studies address brand value from two main perspectives: the financial perspective and the consumer perspective. The financial perspective was widely adopted in the 1980s and 1990s. This approach considers the brand as a distinguishable asset that can be sold for its monetary value or included in the balance sheet (Simon & Sullivan, 1993; Kim & Kim, 2005; Emari et al., 2012; Buil et al., 2013). The financial value of a brand is a critical indicator for business and plays an important role in strategic decision-making processes. The consumer perspective, which has been widely used since the late 1980s, began to receive intense attention in the 1990s (Keller, 2010; Taşçı, 2020). This approach is known as customer-based brand value (CBBE) and measures consumers' knowledge, attitudes, associations, and loyalty to a brand. The strength of the brand is based on what consumers learn, feel, see, and hear about the brand and this represents the value that the brand adds to the product (Yoo & Donthu, 2001; Keller & Lehmann, 2006; Londoño et al., 2016; Tasçi, 2021). Brand value is a complex construct that needs to be measured from both financial and consumer perspectives. The financial perspective evaluates brand value within business assets and measures it in terms of monetary value. This method concretizes the contribution of the brand to financial performance and allows the brand to be seen as a saleable asset. The consumer perspective, on the other hand, assesses brand value based on consumers' perceptions and experiences with the brand. This approach measures the values and associations that the brand creates in the minds of consumers. Consumer-based brand value determines the strength of a brand based on what consumers learn, feel, see, and hear about the brand (Aaker, 1991; Keller, 1993).

Faircloth et al. (2001) examined the effects of brand attitude and brand image on brand value. This study reveals that brand value can be manipulated by specific brand associations and that these associations shape brand value by influencing image and attitudes. They also concluded that focusing on the constructs that create brand value is more meaningful than trying to measure it as financial performance. Haudi et al. (2022) examined the effects of social media marketing activities on brand trust, brand value, and brand loyalty. The results of the study show that social media marketing has positive effects on all three elements. In addition, brand trust, brand value, and brand loyalty have positive effects on the performance of businesses. These studies reveal how important brand value is for businesses and how it is evaluated from different perspectives. Brand value both increases the competitiveness of businesses as an indicator of intangible assets and plays a critical role in strengthening relationships with consumers. Therefore, strategies to protect and enhance brand value are indispensable for the long-term success of businesses.

3. METHODOLOGY

A quantitative research method based on numerical data was used to test the hypotheses developed by the research model. Data were collected using a survey technique. The research population consists of Turkish smartphone users over the age of 18. Due to the impossibility of reaching all Turkish smartphone users and time constraints, the convenience sampling method was preferred. The data were collected between January and May 2024 and the questionnaire were filled in online. A total of 726 participants were surveyed. Since the questionnaires were online and the questions were compulsory, there was no data loss and all questionnaire forms were evaluated.

The items related to smartphone features in the questionnaire form were compiled by the researcher and adapted from the items in the customer engagement scale (Li, 2021) and the items in the brand value scale (Avcı, 2023). In addition, six questions were asked to determine the demographic characteristics of the respondents, followed by a single question to determine the duration of smartphone usage. All scales in this study were measured using a five-point Likert scale.

3.1. Research Model Hypoteses

Research on the effects of product features on customer engagement has revealed that these attributes have positive effects on customer engagement (Hollebeek, 2011; Nguyen & Leblanc, 2001; Too et al., 2001; Vivek et al., 2012; Altunoğlu and Saraçoğlu, 2013). In addition, there are many studies show that product features have positive effects on brand value (Faircloth et al., 2001; Haudi et al., 2022; Parris and Guzmán, 2023). Increasing brand value is generally associated with increasing customer engagement (Warrington & Shim, 2000; Yuniari, 2020; Larasati & Hananto, 2012). In this context, it is stated that product features have the potential to increase customer engagement. This relationship is believed to be effective through the value of the brand.

A model was developed for the research (Fig. 1). The data obtained through the questionnaire technique were tested using quantitative research methods. In the light of this information, the research hypotheses were formed as follows.

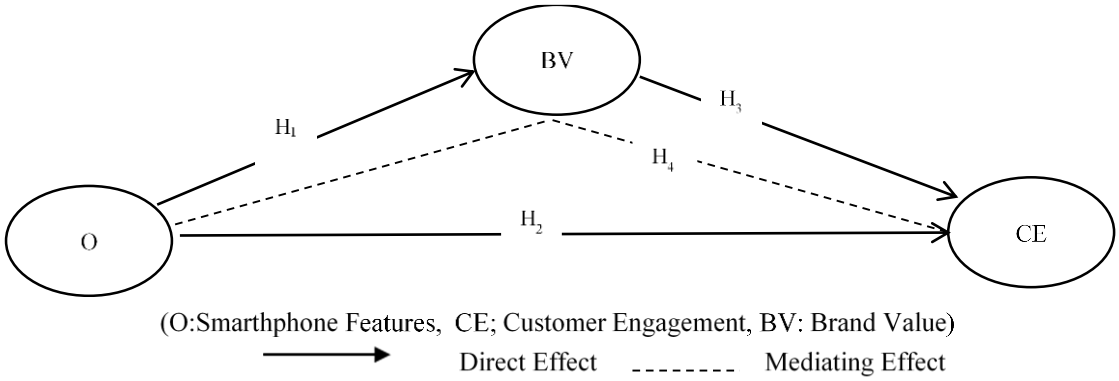
H_1: Mobile phone features affect brand value.

H_2: Mobile phone features affect customer engagement.

H_3: Brand value affects customer engagement.

H_4: Brand value has a mediating effect on the effect of mobile phone features on customer engagement.

Figure 1. Research Model



3.2. Test of Scale

To demonstrate the construct validity of the measurement model, a first-order single-factor confirmatory factor analysis (CFA) was conducted using the AMOS 22 statistical package program. Since the numbers obtained from the analysis did not meet the appropriate fit values, the changes suggested by the program were applied. For this purpose, three covariates were created in the smartphone features dimension, one covariate in the customer commitment dimension, and one covariate in the brand value dimension. As a result of the modifications, the recommended fit values were obtained.

Table 1. Goodness-of-Fit Indices for the Scales

	x^2	df	x^2/df	GFI	CFI	RMSEA
Model fit values	1566.190	396	3.955	.867	.945	0.64
Good fit values*			≤ 3	≥ 0.90	≥ 0.97	≤ 0.05
Acceptable fit values *			≤ 4-5	≥ 0.89-0.85	≥ 0.95	≤ 0.06-0.08

***Source:** (Meydan & Şeşen, 2015, p. 37)

Since the goodness-of-fit values (X2/df= 3.955; RMSEA= 0.64; CFI= 0.945; GFI=.867) of the measurement model derived from the one-factor confirmatory factor analysis (CFA) fell within acceptable ranges, the construct validity of all scales was established. Table 2 shows the factor loadings and reliability coefficients of the items in each scale. Cronbach's alpha coefficients for all scales in Table 2 range from 0.912 to 0.966. Since the coefficients were within acceptable limits, all scales proved to be reliable.

Table 2. Factor Loadings of Scales, Reliability, and Validity Coefficients

Factors	Item	Code	Factor loadings	Cronbach Alpha	Skewness	Kurtosis
Smartphone Features (O)	Design	O1	.829	.966	-.946	.513
	Operating system	O2	.860		-.977	.353
	Storage capacity	O3	.736		-.741	-.478
	Battery life	O4	.860		-.404	-.848
	Screen size	O5	.858		-1.182	1.154
	Screen resolution	O6	.842		-1.000	.360
	Security	O7	.842		-.943	.256
	Camera and lens	O8	.894		-.717	-.650
	Sound system (speaker)	O9	.871		-.817	-.140
	Durability (dust, water, etc.)	O10	.849		-.857	-.119
	RAM (Cache)	O11	.817		-.831	-.086
	Device size	O12	.889		-1.022	.480
	Device Weight	O13	.570		-.926	.311
	Wireless and Fast Charging	O14	.803		-.831	-.337
	Software	O15	.829		-.836	-.174
	Price	O16	.860		-.425	-.787
	Warranty and service support	O17	.736		-.721	-.280
Customer Engagement (CE)	Using this brand makes me think about it.	CE1	.855	.940	-.293	-1.107
	When I use this brand, I frequently think of it.	CE2	.769		-.008	-1.119
	Using this brand makes me want to learn more about it.	CE3	.828		-.229	-1.134
	I feel confident when I use this brand.	CE4	.936		-.199	-1.124
	Using this brand makes me joyful.	CE5	.930		-.580	-.852
	I feel better when I use this brand.	CE6	,751		-.442	-1.007
	I'm proud to utilize this brand.	CE7	.934		-.057	-1.175
	I will continue to use this brand compared with other car brands.	CE8	.924		-.607	-.942
	Whenever I buy an automobile, I will give preference to the brand.	CE9	.919		-.486	-1.187
	When I decide to buy or change an automobile, this brand is one of the brands I will always choose.	CE10	.855		-.647	-.952
Brand Value (BV)	I consider myself brand loyal.	BV1	.702	.912	-.481	-.888
	The brand would be my first choice.	BV2	.863		-.595	-1.043
	In general, I believe that the brand is a high quality business/organization.	BV3	.871		-.809	-.473
	The brand competes with other brands.	BV4	.619		-.766	-.559
	It is worth the money and time I spend to buy the brand.	BV5	.782		-.615	-.661
	I can distinguish the brand among other brands.	BV6	.778		-1.023	-.080
	I can quickly recognize the brand's logo.	BV7	.758		-1.259	.278
	Some characteristics/features of the brand come to mind quickly.	BV8	.702		-.899	-.342

4. FINDINGS

4.1. Characteristics of the Sample

The findings of the frequency analysis used to determine the characteristics of the participants are given in Table 3. Although the sample was determined by convenience sampling method from the universe of Turkish smartphone users over the age of 18, it is seen that the majority of the participants are between the ages of 18-35, lower income group and students.

Table 3. Characteristics of the Sample

Gender	**n**	**%**	**Marital status**	**n**	**%**
Male	381	52.5	Married	72	9.9
Female	345	47.5	Single	654	90.1
Total	726	100.0	Total	726	100.0
Age	**n**	**%**	**Education**	**n**	**%**
Ages 18-25	469	64.6	Primary Education	16	2.2
Ages 26-35	214	29.5	High school	148	20.4
Ages 36-45	18	2.5	Bachelors Degree	515	70.9
Ages 46-65	25	3.4	Master's Degree/PhD	47	6.5
Total	726	100.0	Total	726	100.0
Occupation	**n**	**%**	**Monthly Income**	**n**	**%**
Student	376	51.8	10.000 TL and below	261	36.0
Self Employed	150	20.7	10.001-17.002 (Minimum wage)	209	28.8
Retired	7	1.0	17.003-30.000 TL	165	22.7
Housewife	20	2.8	30.001-50.000 TL	48	6.6
Private Sector	144	19.8	50.001-100.000 TL	29	4.0
Public Sector	29	4.0	100.001 TL and above	14	1.9
Total	726	100.0	Total	726	100.0

When Table 3 is analyzed, it is seen that more than 52% of the participants are male and approximately 48% are female. Approximately 10% of the participants are married and approximately 90% are single. The highest number of participants is between the ages of 18-25 with 64.6%. The 26-35 age range comes second with approximately 30%. More than 70% of the participants have a bachelor's degree. The rate of high school graduates is approximately 20%. More than 51% of the participants are students, about 20% are self-employed and the other 20% are private sector employees. It is seen that more than 60% of the participants have an income below 17.002 TL. The rate of those with an income between 17002-30000 is 22.7%.

Tablo 4. Smartphone Usage Duration

Duration of Use	**n**	**%**
1 year and less	195	26.9
2-5 years	380	52.3
6-10 years	138	19.0
11 years and more	13	1.8
Total	726	100.0

Participants were asked how long they had been using their smartphones. 26.9% of the participants have been using their smartphones for 1 year or less, 52.3% for 2-5 years, 19% for 6-19 years, and 1.8% for 11 years or more. Approximately 80% of the participants change their smartphones within five years.

Table 5. Smartphones Use Characteristics

Smartphone Brand	n	%	Ranking	Alternative Smartphone Brand	n	%
Iphone	334	46	**1**	Iphone	393	54,1
Xiaomi	138	19	**2**	Samsung	256	35.3
Samsung	137	18.9	**3**	Xiaomi	35	4.8
Oppo	29	4	**4**	Huawei	22	3.0
Huawei	26	3.6	**5**	Oppo	9	1.2
Diğer	23	3.2	**6**	Infinix	2	.3
Realme	12	1.7	**7**	Tecno	2	.3
Infinix	8	1.1	**8**	Realme	2	.3
Tecno	6	0.8	**9**	Reeder	1	.1
General mobile	6	0.8	**10**	General Mobile	1	.1
Omix	4	0.6	**11**	Alcatel	1	.1
Reeder	2	0.3	**12**	Honor	1	.1
Gigaset	1	0.1	**13**	Other	1	.1
Total	726	100.0		Total	726	100.0

When the participants ranked the smartphone brands they use, the top 5 brands were iPhone, Xiaomi, Samsung, Oppo, and Huawei. More than 80% of the participants use the first 3 brands. The least used brands were Gigaset, Reeder, and General Mobile. Participants were asked, "If you do not use this brand, which brand would you like to use?". The top 5 brands they would like to use were iPhone, Samsung, Xiaomi, Huawei, and Oppo, respectively. The brands currently used and the top 5 brands that would like to be used are the same.

4.2. Descriptive Statistics

The mean and standard deviation values of the items in the smartphone features, customer commitment, and brand value scales are shown in Table 6. Among the smartphone features, "Screen size" has the highest mean (4.035), while "Price" has the lowest mean (3.431). On the customer loyalty scale, the statement "When I decide to buy or change a smartphone, this brand is one of the brands I will always prefer." has the highest mean (3.661), while the statement "When I use this brand, I often think of the brand." has the lowest mean (3.059). In the brand value scale, the statement "If this brand gives me good service, I will convey my satisfaction to the authorities" has the highest mean (3.526), while the statement "I write comments on the forums of this brand" has the lowest mean (2.413).

Table 6. Descriptive Statistics of Scale Items

Code	Items	N	Mean	S.E.
	Smartphone Features			
O1	Design	726	3.9421	1.04490
O2	Operating system	726	3.8981	1.11322
O3	Storage capacity	726	3.6956	1.26367
O4	Battery life	726	3.4353	1.25201
O5	Screen size	726	4.0358	1.01782
O6	Screen resolution	726	3.9421	1.09643
O7	Security	726	3.9325	1.09399
O8	Camera and lens	726	3.7121	1.30929
O9	Sound system (speaker)	726	3.8581	1.14011
O10	Durability (dust, water, etc.)	726	3.7948	1.20368
O11	RAM (Cache)	726	3.8223	1.15793
O12	Device size	726	3.9421	1.10145
O13	Device Weight	726	3.8857	1.08374
O14	Wireless and Fast Charging	726	3.7590	1.26645
O15	Software	726	3.8292	1.18428
O16	Price	726	3.4311	1.26494
O17	Warranty and service support	726	3.7273	1.19193
	Customer Engagement / Cognitive Engagement			
CE1	Using this brand makes me think about it.	726	3.3857	1.36458
CE2	When I use this brand, I frequently think of it.	726	3.0592	1.35771
CE3	Using this brand makes me want to learn more about it.	726	3.2741	1.36278
	Affective Engagement			
CE4	I feel confident when I use this brand.	726	3.2576	1.35791
CE5	Using this brand makes me joyful.	726	3.5882	1.35436
CE6	I feel better when I use this brand.	726	3.4807	1.35607
CE7	I'm proud to utilize this brand.	726	3.1350	1.38901
	Behavioral Engagement			
CE8	I will continue to use this brand compared with other smartphone brands.	726	3.6281	1.39733
CE9	Whenever I buy an smartphone, I will give preference to the brand.	726	3.5207	1.47119
CE10	When I decide to buy or change a smartphone, this brand is one of the brands I will always choose.	726	3.6612	1.41940
	Brand Value			
BV1	I consider myself brand loyal.	726	3.4711	1.32815
BV2	The brand would be my first choice.	726	3.6446	1.43662
BV3	In general, I believe that the brand is a high quality business/organization.	726	3.7934	1.30305
BV4	The brand competes with other brands.	726	3.7672	1.30340
BV5	It is worth the money and time I spend to buy the brand.	726	3.6226	1.28363
BV6	I can distinguish the brand among other brands.	726	3.9339	1.26971
BV7	I can quickly recognize the brand's logo.	726	4.0744	1.31306
BV8	Some characteristics/features of the brand come to mind quickly.	726	3.8512	1.29930

4.3. Structural Model and Hypotesis Testing

The study hypotheses were investigated using structural equation modeling. As a result of the analysis, necessary modifications were made and good fit values were obtained. To obtain good fit values, a total of 5 items, 3 from smartphone features, 1 from customer commitment, and 1 from brand

value, were removed. Table 7 shows the hypothesis test results of the study based on the path analysis results obtained using the Amos 22.0 statistical package application.

Figure 2. SEM Results

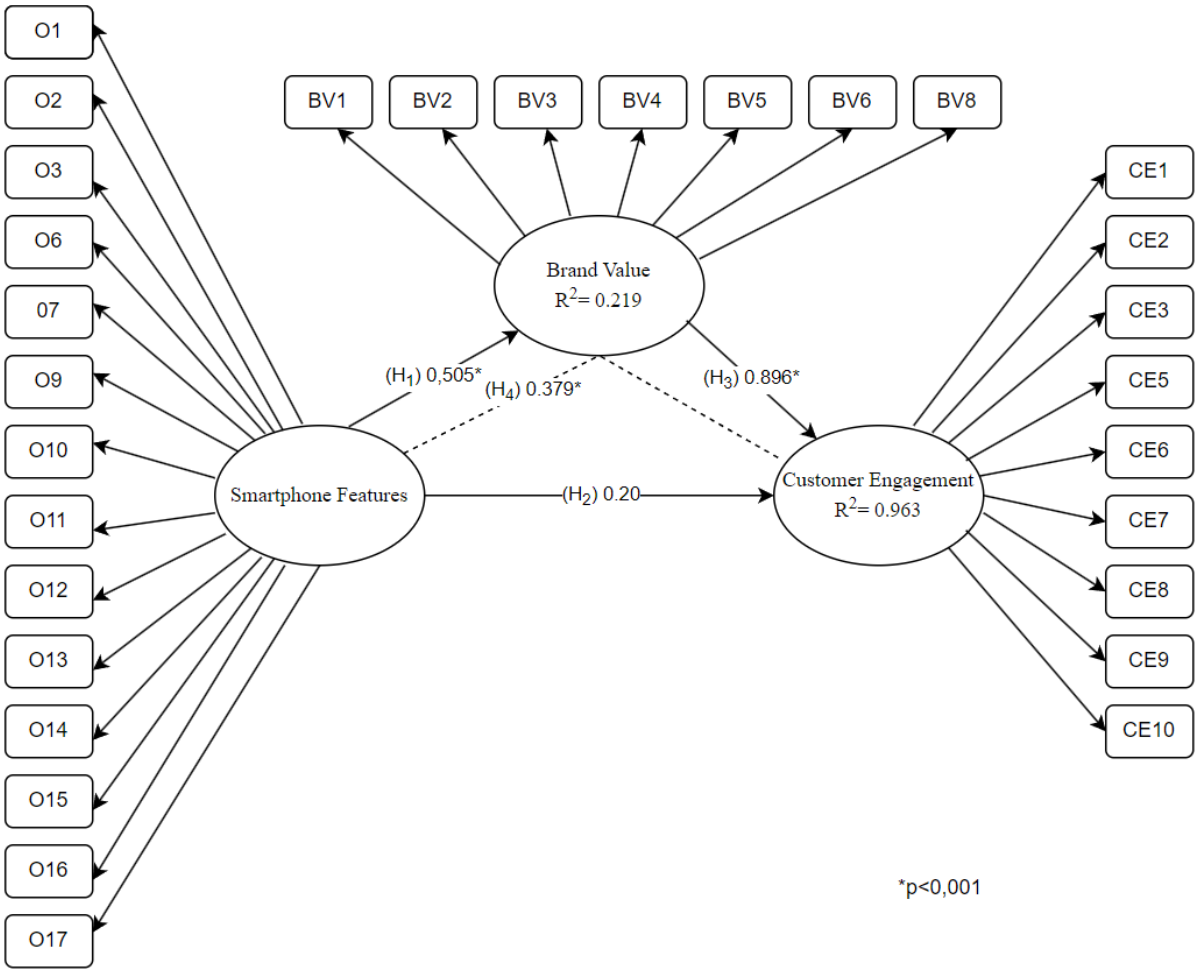


Table 7 presents the hypothesis test results of the research based on the path analysis conducted using the AMOS 22.0 statistical software.

Table 7. The Relationships between Smartphone Features, Customer Engagement and Brand Value

Hypothesis		β	S.E.	C.R.	p	R^2	Remarks
H_1	Smartphone features- Brand Value	.505	.044	11.429	*	.219	Supported
H_2	Smartphone features- Customer Engagement	.020	.021	.943	.345		-
H_3	Brand Value-Customer Engagement	.896	0.55	16.222	*	.963	Supported
P<0.01							

Hypothesis H_1 is supported (β=.505; p<.01), indicating that smartphone features significantly influence brand value. Similarly, hypothesis H_3 is supported (β=.896; p<.01), demonstrating that brand

value impacts customer commitment. In contrast, hypothesis H_2 is not supported, suggesting that smartphone features do not affect customer engagement.

4.4. Mediating Role

Three variables were included in the model to determine the mediating effect of brand value in the relationship between smartphone features and customer commitment. The significance of the indirect effects on the variables was examined by applying the Bootstrap method (Baron and Kenny, 1986). As a result of the analysis, it was concluded that the mediation effect of brand value is significant H_4 ($p < .01$; Confidence Interval: 379-536) (Table 8). Hypothesis H_4 is supported.

Table 8. Mediating Role of Brand Value

Hypothesis		Lower Bounds	Upper Bounds	p	Remarks
H_4	Smartphone Features X Brand Value- Customer Engagement	.379	.536	*	Supported
P<0.01					

5. CONCLUSION

This study focuses on the need to provide deeper insights into the interaction of smartphone features with customer engagement and brand value. The study findings revealed that contrary to the literature, smartphone features do not directly affect customer engagement (Economides & Grousopoulou, 2009; Çakır & Demir, 2014; Arif et al., 2015; Cecere et al., 2015; Uludağ et al., 2018; Bacalhau, 2023). Hypothesis 1 proposed that smartphone features have a positive impact on brand value. The results support this hypothesis and show that the customer experience created by smartphone features has an increasing effect on brand value. This finding is in line with many studies in the literature and existing findings suggest that product features should be considered and continuously improved to build and sustain brand value (Buil et al., 2013; Christodoulides et al., 2015; Faircloth et al., 2001; Nguyen et al., 2013; Öcal, 2020; Tasci, 2021). Hypothesis 3 suggested that there is a positive relationship between brand value and customer engagement. The results of the study support this hypothesis and show that as customers perceive brand value positively in the products they purchase, their brand loyalty is positively affected (Too et al., 2001; Hollebeek, 2011; Vivek et al., 2012; So et al., 2016; Harrigan et al., 2017; Ou et al., 2020; Rasool et al., 2021; Albayrak et al., 2024). Our results also reveal that brand value plays a mediating role in the relationship between smartphone features and customer engagement. This finding suggests that the formation of brand value perception will increase customer engagement (Uludağ et al., 2018).

This study provides important insights for both academics and practitioners on how to increase brand value and strengthen customer engagement by enhancing smartphone features. In today's fiercely competitive environment, having a loyal consumer base offers businesses a real competitive advantage. This study proposes the adoption of a customer engagement orientation as a key strategy to build and

sustain brand value. Hence, a new understanding of brand value and customer engagement in the smartphone industry is presented. The findings of the study are also highly generalizable to service contexts such as retail, hospitality, tourism, and so on. This study makes a valuable contribution to the literature by identifying and empirically validating a model of brand value in the smartphone industry. In addition to its theoretical significance, this study also offers some important recommendations for marketing practitioners. With the growth and increasing competition in the smartphone industry, it has become increasingly critical for practitioners to know how to develop and maintain brand value and customer engagement. Accordingly, the study suggests that it is important for smartphone manufacturers to create better smartphone features and deliver them to customers with effective service quality to enhance customer engagement. It is also emphasized that businesses can increase customers' loyalty and perception of brand value by offering customized, interactive, and engaging features. This study acknowledges some limitations. First, while the current study investigates the relationship between customer engagement and brand value, there are other related constructs (e.g., brand loyalty, brand image, etc.) that could be used in future research to control for potential mediating effects. Finally, the study only addresses the positive aspects of customer engagement, and exploring the negative expressions of customer engagement across contexts could serve as another fruitful area of research.

For the study, ethics committee permission document dated March 25, 2024 and numbered 147/18 was obtained from the Süleyman Demirel University Ethics Committee.

The study has been crafted in adherence to the principles of research and publication ethics.

The author declares that there exists no financial conflict of interest involving any institution, organization, or individual(s) associated with the article.

The entire work was carried out by its only, stated author.

REFERENCES

Aaker, D. A. (1991). *Managing brand value capitalizing on the value of brand name*. The Free Press.

Aaker, D. A. (1996). Measuring brand value across products and markets. *California Management Review*, *38*(3), 102–120. https://doi.org/10.2307/41165845

Albayrak, T., Davras, Ö., Caber, M., and Mikulić, J. (2024). An investigation of the asymmetric relationships between service quality attributes and customer engagement: a three-factor theory approach. *Journal of Hospitality Marketing and Management*, *00*(00), 1–19. https://doi.org/10.1080/19368623.2024.2327077

Alghizzawi, M., Ghani, M. A., Puad, A., Som, M., Ahmad, F., Amin, A., Bakar, A., Salloum, S. A., and Habes, M. (2018). The impact of smartphone adoption on marketing therapeutic tourist sites in Jordan. *International Journal of Engineering & Technology*, *7*, 91–96.

Alkibay, S. (2005). Profesyonel spor kulüplerinin taraftar ilişkileri yoluyla marka değeri yaratmaları üzerine bir araştırma. *Hacettepe Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, *23*(1), 83–108.

Arif, H., Ahmed, S., and Farrukh, M. (2015). Factors affecting customer's preferences to buy cellular phone for local versus international brands: A case study in Pakistan. *Journal of Marketing and Consumer Research*, *10*, 111–120.

Avcı, M. S. (2023). *Sosyal kimliğin marka değeri yaratmadaki rolü: Fenerbahçe ve Panathinaikos taraftar grupları karşılaştırması*. Çankaya University.

Bacalhau, J. (2023). *HaaS: drivers that customers value in a smartphone subscription model base*. https://repositorio.ucp.pt/handle/10400.14/42252%0Ahttps://repositorio.ucp.pt/bitstream/10400.14/42252/1/203327659.pdf

Baron, R. and Kenny, D. (1986), The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical consideration, *Journal of Personality and Social Psychology, 51*(6), 1173-1182.

Bloch, P. H. (1995). Seeking the ideal form: Product design and consumer response. *Journal of Marketing*, *59*(3), 16. https://doi.org/10.2307/1252116

Bowden, J. (2009). The process of customer engagement: A conceptual framework. *Journal of Marketing Theory and Practice*, *17*(1), 63–74. https://doi.org/10.2753/MTP1069-6679170105

Brodie, R. J., Hollebeek, L. D., Jurić, B., and Ilić, A. (2011). Customer engagement: Conceptual domain, fundamental propositions, and implications for research. *Journal of Service Research*, *14*(3), 252–271. https://doi.org/10.1177/1094670511411703

Buil, I., Martínez, E., and de Chernatony, L. (2013). The influence of brand value on consumer responses. *Journal of Consumer Marketing*, *30*(1), 62–74. https://doi.org/10.1108/07363761311290849

Çakır, F., and Demir, N. (2014). Üniversite öğrencilerinin akıllı telefon satın alma tercihlerini belirlemeye yönelik bir araştırma. *Dokuz Eylül Üniversitesi İktisadi İdari Bilimler Fakültesi Dergisi*, *29*(1), 213–243. https://dergipark.org.tr/tr/pub/deuiibfd/issue/22719/242480

Cecere, G., Corrocher, N., and Battaglia, R. D. (2015). Innovation and competition in the smartphone industry: Is there a dominant design? *Telecommunications Policy*, *39*(3–4), 162–175. https://doi.org/10.1016/j.telpol.2014.07.002

Christodoulides, G., Cadogan, J. W., and Veloutsou, C. (2015). Consumer-based brand value measurement: Lessons learned from an international study. *International Marketing Review*, *32*(3–4), 307–328. https://doi.org/10.1108/IMR-10-2013-0242

Crilly, N., Moultrie, J., and Clarkson, P. J. (2004). Seeing things: Consumer response to the visual domain in product design. *Design Studies*, *25*(6), 547–577. https://doi.org/10.1016/j.destud.2004.03.001

Dierks, Z. (2024). *Number of smartphone users in Turkey 2020-2029*. Statista. https://www.statista.com/statistics/566218/predicted-number-of-smartphone-users-in-turkey/

Doyle, P. (2008). *Değer temelli pazarlama*. Mediacat Yayınları.

Economides, A. A., and Grousopoulou, A. (2009). Students' thoughts about the importance and costs of their mobile devices' features and services. *Telematics and Informatics*, *26*(1), 57–84. https://doi.org/10.1016/j.tele.2008.01.001

Emari, H., Jafari, A., and Mogaddam, M. (2012). The mediatory impact of brand loyalty and brand image on brand value. *African Journal of Business Management*, *6*(17), 5692–5701. https://doi.org/10.5897/ajbm11.788

Erdil, T. S. (2015). Effects of customer brand perceptions on store image and purchase intention: An application in apparel clothing. *Procedia - Social and Behavioral Sciences*, *207*, 196–205. https://doi.org/10.1016/j.sbspro.2015.10.088

Faircloth, J. B., Capella, L. M., and Alford, B. L. (2001). The effect of brand attitude and brand image on brand value. *Journal of Marketing Theory and Practice*, *9*(3), 61–75. https://doi.org/10.1080/10696679.2001.11501897

Farquhar, P. H., Farquhar, A., Fazio, R., Herr, P., and Pratkanis, A. (1989). Marketing research : Managing brand value. *Marketing Research*, *1*(1), 24–33.

Glasscock, N. F., and Wogalter, M. S. (2006). Evaluating preferences for mobile phone features. *Proceedings of the Human Factors and Ergonomics Society*, 1259–1263. https://doi.org/10.1177/154193120605001211

Hanley, M., and Becker, M. (2006). Cell phone usage and advertising acceptance among college students: A four-year analysis. *International Journal of Mobile Marketing 3.1*, *3*(1), 67–81.

Harrigan, P., Evers, U., Miles, M., and Daly, T. (2017). Customer engagement with tourism social media brands. *Tourism Management*, *59*, 597–609. https://doi.org/10.1016/j.tourman.2016.09.015

Haudi, Handayani, W., Musnaini, Suyoto, Y. T., Prasetio, T., Pital-Oka, E., Wijoyo, H., Yonata, H., Koho, I. R., and Cahyono, Y. (2022). The effect of social media marketing on brand trust, brand value and brand loyalty. *International Journal of Data and Network Science*, *6*(3), 961–972. https://doi.org/10.5267/j.ijdns.2022.1.015

Hollebeek, L. D. (2011). Demystifying customer brand engagement: Exploring the loyalty nexus. *Journal of Marketing Management*, *27*(7–8), 785–807. https://doi.org/10.1080/0267257X.2010.500132

Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of Management Journal*, *33*(4), 692–724. https://doi.org/10.5465/256287

Kapferer, J. N. (2012). *The new strategic brand management: Advanced Insights and strategic thinking* (Fifth Ed.). Kogan Page.

Keller, K. L. (1993). Conceptualizing, measuring, and managing customer-based brand value. *Journal of Marketing*, *57*(1), 1–22. https://doi.org/10.1177/002224299305700101

Keller, K. L., and Lehmann, D. R. (2006). Brands and branding: Research findings and future priorities. *Marketing Science*, *25*(6), 740–759. https://doi.org/10.1287/mksc.1050.0153

Kim, H. B., and Kim, W. G. (2005). The relationship between brand value and firms' performance in luxury hotels and chain restaurants. *Tourism Management*, *26*(4), 549–560. https://doi.org/10.1016/j.tourman.2004.03.010

Kim, H. S., and Yoon, C. H. (2004). Determinants of subscriber churn and customer loyalty in the Korean mobile telephony market. *Telecommunications Policy*, *28*(9–10), 751–765. https://doi.org/10.1016/j.telpol.2004.05.013

Knapp, D. E. (2003). *Marka aklı*. Mediacat Yayınları.

Kotler, P., Armstrong, G. (2007). *Principle of marketing* (12th ed.). Pearson Education.

Kotler, P., John, B. T., and James, M. C. (1999). *Marketing for hospitality and tourism* (2nd ed.). Prentice Hall.

Kotler, P., and Keller, K. L. (2016). *Marketing Management* (15th ed.). Pearson Education Limited.

Kriegbaum, C. (1998). *Valuation of brands - A critical comparison of different methods* (Issue 13).

Larasati, Y. & Hananto, A. (2012). *The role of value congruity and consumer brand identification toward development of brand commitment and positive word of mouth*. SSRN. http://dx.doi.org/10.2139/ssrn.2200313

Li, S. (2021). Linking servicescape and customer engagement: An investigation in the hotel context. *International Journal of Hospitality Management*, *94*(422), 102880. https://doi.org/10.1016/j.ijhm.2021.102880

Lim Lay-Yee, K., Kok-Siew, H., and Chan Yin-Fah, B. (2013). Factors affecting smartphone purchase decision among Malaysian Generation Y. *International Journal of Asian Social Science International Journal of Asian Social Science ISSN International Journal of Asian Social Science*, *3*(312), 2426–2440.

Londoño, J. C., Elms, J., and Davies, K. (2016). Conceptualising and measuring consumer-based brand-retailer-channel value. *Journal of Retailing and Consumer Services*, *29*, 70–81. https://doi.org/10.1016/j.jretconser.2015.11.004

Meydan, C. H., and Şeşen, H. (2015). *Yapısal Eşitlik Modellemesi AMOS uygulamaları*. Detay Yayınları.

Mobisad. (2023). *Mobil iletişim sektörü raporu 2023*. Mobisad.

Nguyen, N., and Leblanc, G. (2001). Corporate image and corporate reputation in customers' retention decisions in services. *Journal of Retailing and Consumer Services*, *8*(4), 227–236. https://doi.org/10.1016/s0969-6989(00)00029-1

Nguyen, T., Dadzie, C., and Davari, A. (2013). Does brand value mean brand brand value? An empirical study of sonsumer based brand value financial based brand value. *AMA Summer Educators, March 2017*, 344–346.

Nowlis, S. M., and Simonson, I. (1996). The Effect of New Product Features on Brand Choice. *Journal of Marketing Research*, *33*(1), 36-46. https://doi.org/10.1177/002224379603300104

Öcal, D. (2020). Tüketici temelli marka değeri kapsamında bir nitel çalışma: Apple ve Samsung örneği. *Karadeniz İletişim Araştırmaları Dergisi*, *10*(2), 0–3.

Ou, J., Wong, I. K. A., Prentice, C., and Liu, M. T. (2020). Customer engagement and its outcomes: The cross-level effect of service environment and brand value. *Journal of Hospitality and Tourism Research*, *44*(2), 377–402. https://doi.org/10.1177/1096348019897360

Parris, D. L., and Guzmán, F. (2023). Evolving brand boundaries and expectations: looking back on brand value, brand loyalty, and brand image research to move forward. *Journal of Product and Brand Management*, *32*(2), 191–234. https://doi.org/10.1108/JPBM-06-2021-3528

Rasool, A., Shah, F. A., and Tanveer, M. (2021). Relational dynamics between customer engagement, brand experience, and customer loyalty: An empirical investigation. *Journal of Internet Commerce*, *20*(3), 273–292. https://doi.org/10.1080/15332861.2021.1889818

Simon, C. J., and Sullivan, M. W. (1993). The measurement and determinants of brand value a financial approach, in marketing science. *Winter*, *12*.

So, K. K. F., King, C., Sparks, B. A., and Wang, Y. (2016). The Role of customer engagement in building consumer loyalty to tourism brands. *Journal of Travel Research*, *55*(1), 64–78. https://doi.org/10.1177/0047287514541008

Ström, R., Vendel, M., and Bredican, J. (2014). Mobile marketing: A literature review on its value for consumers and retailers. *Journal of Retailing and Consumer Services*, *21*(6), 1001–1012. https://doi.org/10.1016/j.jretconser.2013.12.003

Tasçi, A. D. A. (2021). A critical review and reconstruction of perceptual brand value. *International Journal of Contemporary Hospitality Management*, *33*(1), 166–198. https://doi.org/10.1108/IJCHM-03-2020-0186

Too, L. H. Y., Souchon, A. L., and Thirkell, P. C. (2001). Relationship marketing and customer loyalty in a retail setting: A dyadic exploration. *Journal of Marketing Management*, *17*(3–4), 287–319. https://doi.org/10.1362/0267257012652140

Uludağ, G., Faiz, E., and Çatı, K. (2018). Akıllı telefon pazarında marka imajının müşteri sadakati üzerindeki etkisinde müşteri memnuniyetinin aracılık rolü. *Journal of Business Research - Turk*, *10*(4), 575–599. https://doi.org/10.20491/isarder.2018.538

Vivek, S. D., Beatty, S. E., and Morgan, R. M. (2012). Customer engagement: Exploring customer relationships beyond purchase. *Journal of Marketing Theory and Practice*, *20*(2), 122–146. https://doi.org/10.2753/MTP1069-6679200201

Warrington, P., and Shim, S. (2000). An empirical investigation of the relationship between product involvement and brand commitment. Psychology and Marketing, 17(9), 761–782. https://doi.org/10.1002/1520-6793(200009)17:9<761::AID-MAR2>3.0.CO;2-9

Yoo, B., and Donthu, N. (2001). Developing and validating a multidimensional consumer-based brand value scale. *Journal of Business Research*, *52*(1), 1–14. https://doi.org/10.1016/S0148-2963(99)00098-3

Yuniari, W. (2020). The role of customer brand engagement and affective brand commitment in mediating the relationship between value congruity and brand loyalty. *Journal of Advanced Research in Dynamical and Control Systems*, *12*(SP4), 1963–1973. https://doi.org/10.5373/jardcs/v12sp4/20202071