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Step into Loyalty: Uncovering What Drives Sneaker Satisfaction and Brand Devotion among Millennials

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ABSTRACT

The aim of the study was to investigate factors that determine brand loyalty towards certain sneaker brands amongst millennials in South Africa. Through an online survey, data was obtained over a 2-month period from 333 young consumers residing in Braamfontein, a popular shopping district in Johannesburg South Africa selected through non-probability sampling. Analysis of data was conducted in SPSS and AMOS software in order to generate descriptive statistics and hypotheses testing respectively. The findings from this study highlight the powerful influence of perceived quality and aesthetics on brand satisfaction, particularly among South African millennials. Notably, brand satisfaction emerged as the key driver of brand loyalty in this demographic. For sneaker marketers, this underscores the need to prioritize brand loyalty strategies when engaging millennial consumers in South Africa's dynamic apparel market. Through developing and testing a theoretical framework, this research sheds light on the crucial factors that cultivate brand loyalty towards sneakers, bridging an important gap in understanding how millennials in emerging markets connect with sneaker brands. These insights offer valuable guidance for marketers seeking to capture and sustain millennial loyalty in this competitive space.

Keywords: Brand Loyalty, Sneakers, Customer Satisfaction, Perceived Value, Millennials
JEL Classifications: M31

1. INTRODUCTION

Research suggests that brands can expect to instil behavioural loyalty and feelings about a brand by creating value and satisfaction that feeds into consumer loyalty (Nisar and Whitehead, 2016). Millennials also known as generation Y are individuals born between 1981 and 1996 (Tan, 2024). Millennials are arguably brand loyal and not price sensitive despite being exposed to a plethora of products (Hassan and Rasel, 2018). Fashion has been a significant part of the life of millennials as evident in the literature (Ozuem et al., 2021; Rahman et al., 2021; Seock et al., 2024). Factors such as consumer preference, supporting a worthy cause, brands that honour their promises and strong social media presence are likely are likely antecedents of brand loyalty amongst millennials (Hassan and Rasel, 2018) assert that. Millennials form a significant part of populations both globally. Brand satisfaction and loyalty are considered to be associated (Chatzi et al., 2024; Chen et al., 2020; Ghorbanzadeh and Rahehagh, 2020) with satisfaction being an antecedent and loyalty being the consequent (Anantharaman et al., 2023; Chatzi et al., 2024; Chen et al., 2020; Ghorbanzadeh and Rahehagh, 2020; Nkwei et al., 2023).

The focus of the study was on sneakers, and the term sneaker is used to refer to the shoes worn by people in their leisure time (Gracia and Winkelheus, 2016). Sneakers have grown into being more than a sports accessory when they were first presented to society more than a century ago. They have played a huge role in mainstream society (Bekoe, 2017). Established brands such as Nike, Adidas, Vans and Converse have differentiated themselves in the market and in turn have managed to attract young consumers. Adidas has developed to being the second-largest sportswear brand, with Nike being the first; however, they have expanded their sporting apparel into the sneaker industry (Carr, 2019).

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The fundamental role of marketing strategies was the enhancement and maintaining of brand loyalty, particularly in shops with stiff competition, tremendous unpredictability, and a decrease in product differentiation (Cuoung, 2020). Furthermore, this cohort is more receptive to emerging fashion trends which ultimately makes them a strategically important consumer segment for premium fashion brands (Huang et al, 2025). Research suggests that the value of focusing on millennials lies in the fact that this cohort has the greatest spending power ever in the fashion industry and is most inclined to use social media for interactions and engagements (Di Benedetto and Kim, 2016). We can anticipate the same for millennials in South Africa given that they exist in a global village and are likely to behave the same as their counterparts in the western world. Hence, there is pressing need to understand this cohort in an emerging market. This study particularly investigates how perceived value, perceived quality, self-brand connection, perceived aesthetic, brand satisfaction predicts brand loyalty in the sneaker market.

The independent variables (perceived value, perceived quality, self-brand connection and perceived aesthetics) all influence the dependent variables (brand satisfaction and brand loyalty) various ways. For instance, brand satisfaction occurs when consumers perceive a particular brand to hold some value (Li et al., 2021), while perceived quality strongly induces brand satisfaction (Singh et al., 2021). Through stereotypes that consumers hold, both perceived aesthetics and self-brand connection influence their satisfaction (Japutra et al., 2018) or love of brand (Hsu, 2023). Consumers tend to become loyal to a brand that they are satisfied with (Anantharaman et al., 2023; Jamshidi and Rousta 2021; Nkwei et al., 2023). The objective of the study was to investigate antecedents of brand satisfaction and loyalty in sneaker brands among millennial consumers.

2. LITERATURE REVIEW

2.1. Theoretical Grounding

Millennials are a very lucrative market for consumer product companies given their significant purchasing power. This generation is considered optimistic and empowered to make purchasing decisions and its members are considered fun loving, casual and technologically savvy (Lissitsa and Kol, 2021). Due to their widely available and varied choices of consumption, millennials consumers warily select their brands of products, as they are prepared to pay at a superior price for good quality (Parment, 2013). However, due to the accelerated change in the social, technological, and economic setting particularly in South Africa, this puts pressure on millennials to not only have a successful career path and earn a large salary, but to try and blend in with higher social circles.

2.2. Maslow's Self-Actualization Theory

Maslow's self-actualization theory has gained prominence since its inception by the famous American psychologist Abraham Maslow. Researchers have quoted Maslow stating that human needs are in a hierarchical form starting in an ascending order from the lowest to the highest, and furthermore the hierarchy is conceptualized as a pyramid positing that in order for higher needs to be fulfilled the lower needs should have been satisfied first (Onyebu and Omotayo, 2017; Rajasakran et al., 2014). The initial conceptualization consisted only of the growth need, which is self-actualization. However, there was a further expansion of self-actualization into four needs, namely cognitive, aesthetic, self-actualization, and self-transcendence (Maslow, 1970). The former needs are called D needs or deficient needs and the latter are called B needs or being needs (D'Souza and Gurin, 2016). Now Maslow's (1970) self-actualization theory gave further insight as to how important aesthetics are. The theory explains that the need for aesthetic pleasure is among the higher growth needs, which manifest after the lower level, where most needs have been satisfied to a certain degree. Maslow added that unlike basic needs, the need for aesthetics increases the more it is fulfilled. This theory is relevant precisely because of the aesthetic component in Maslow's theory. It underpins why consumers prefer certain sneaker brands and highlight the human nature to desire things or in this case sneaker brands which are aesthetically pleasing to view. From Maslow's model, the aesthetic need has been adapted for this study as perceived aesthetic.

2.3. Brand Relationship Model

Brand relationship quality is a versatile relationship construct between customers and brands. It consists of three components which maintain brand relationship quality which are: Emotional or sentimental attachments (love/passion and self-connection), behavioural ties (interdependence and commitment), and cognitive beliefs (intimacy and brand partner quality), in which once combined they gain potency and stability over a period of time (Fournier, 1998). Fournier (1998) developed the brand relationship quality model to elucidate that customers do not just purchase brands because of their functionality, however it is due to the relationship consumers perceive to have with their collective brands in order to benefit from the value these brands add to their lives (Hudson et al., 2016). The value added is perceived as purposive and conscience focused, and therefore it is of paramount importance to the persons engaging those (Hudson et al., 2016). Consumers' tend to develop a personal relationship with other individuals; hence consumer brand relationship specifies that customers and brands contribute to each other in a win-win partnership (Fournier, 1998). Essentially the win-win of consumer brand relationships consists of customers gaining fulfilment through greater attachment to brands, and organisations that have learned to communicate and respond better to consumer needs generate profitability and brand loyalty. In order to accomplish these goals, it necessitates further associations and communication among consumers and brands to cultivate connections that are meaningful between them (Hudson et al., 2016).

2.4. Empirical Literature

2.4.1. Perceived value

Perceived value is a customer's view of a product or services worth in relation to its cost (Bushara et al., 2023). Literature has attempted to define perceived value as a multi-faceted construct (Kahyari et al., 2014) or have it examined as a three-dimensional model. Jiang et al. (2016) define perceived value as results from the overall assessment of rewards and forfeits connected with the service, however for the current study it can be defined as products which have super quality or perceived quality. Moreover, perceived value is an essential concept in marketing literature because of its influence on customer satisfaction and brand loyalty. It is also vital

because considering consumers desired values or going further their essential need can ensue into positive results for businesses in terms of improving the performance of sales (Chattalas and Shukla, 2015; Chen and Chang, 2012).

2.4.2. Perceived quality

Parasuraman et al. (1988) proposed a model that was vastly used to evaluate service quality, which is called SERVQUAL. The model consists of the evaluation of five service constructs such as reliability, assurance, empathy, responsiveness and tangibles. A different model by Keller (2003) is the customer-based brand equity and it has seven constructs of product quality, which are performance, features, confirmation quality, reliability, durability, serviceability, style and design. These two different models demonstrate how perceived quality has evolved over time and the different dimensions that can be used in marketing research. Perceived quality has been recognised as a construct that compels customers to prefer one brand to competitive brands (Levy and Guterman, 2012). Companies need to offer superior quality product offerings to customers in this highly competitive world if they want to hold an influential position in the market particularly the sneaker.

2.4.3. Self-brand connection

Self-brand connection is a unique construct in marketing literature, and it can possibly be a method of creating further ties with clients (Hussain et al., 2014). Previous studies have shown that consumers are more likely to discuss information that related strongly to themselves and they tend to utilise brands in the public's view or in their private spaces to create and articulate their desired self-image (Choi et al., 2013; Loughran Dommer et al., 2013). This highlights how consumers care about the brands they are using and how it reflects on them. A concept that is relevant to self-brand connection is anthropomorphising. It is not only from the products functionality that brand value can originate from, moreover it's the capability to assist customers create a self-identity and differentiate themselves from others (Dwivedi et al., 2016). Park et al. (2013) conducted a study to understand brand relationships, emotions and self, and they discussed that when a brand is evidently self-significant it evokes positive sentiments; consumers are probably going to build up a positive and strong association with the brand. At the point when the brands significance to self is feeble, consumers are likely to feel apathetic or uninterested toward the brand in regard to both their emotions and behaviours. Hence, it can be inferred from these two studies that in order for consumers to even consider brands, they have to be able to identify themselves and relate to self with that particular brand.

2.4.4. Perceived aesthetic

Aesthetics is "a conception of what is artistically valid or beautiful" (Wang et al., 2011). Beautiful would be a fitting word to be used by a consumer if they found the perfect shoes for themselves. The aesthetics are considered in this study given that beauty or something that is appealing to the eye, makes a difference in the decision-making process of consumers. Aesthetics psychology research is part of the investigation and elucidation of the law of human mental action in admiration of beauty. This action for the most part alludes to the generation and experience of a sense of beauty and mostly we appreciate beauty through the eyes . Now the core of aesthetic psychology is self-actualization theory that has been discussed earlier under the theoretical framework of the study.

This study basically elicits that consumers do pay attention to how products look and if this product matches who they are because it has been discovered that when customers are given a decision between two products of tantamount purpose and cost, the inclination is for them to purchase the one that looks more appealing (Jiang et al., 2016). This infers that in order to obtain positive aesthetic response from customers, designers should seek to create original products (Hung and Chen, 2012). However, research has discovered that the utilisation of aesthetics can in some cases not go as planned and that over styling products can contrarily affect their perceived usefulness (Hagtvedt and Patrick, 2014).

2.4.5. Brand satisfaction

The concept of customer satisfaction has gained considerable momentum in marketing literature during previous years. It is viewed as a crucial obstacle to overcome in such a competitive marketplace like the fashion industry to persuade consumers. Organisations have realised how vital and essential customer satisfaction is to attain loyalty and repurchase intention (Anam and Faiz, 2016). It is contended that how a consumer perceives a company, and the consumers behaviour is affected by the client's level of satisfaction towards products or services of that company. A customer that is fulfilled is ordinarily expected to create fundamental bond with the organisation, in turn this results in loyalty towards an organisations product offering (Ram and Wu, 2016).

2.4.6. Brand loyalty

Msosa (2023) defines brand loyalty as the obligation of a consumer to re-purchase products from a preferred or favoured brand consistently. Furthermore, brand loyalty refers to when a customer is ready to spend a high cost for a particular brand within the same product group and recommends that brand to the other people around them (Cuong, 2020). Research reveals that businesses pay substantial marketing and customer service to create and sustain consumer loyalty for well-known items. Consumers' positive experiences with a specific product or brand are the foundation of brand loyalty (Msosa, 2023). A customer will often reliably purchase a similar item because they see it as being the prime item among the decisions, they have access to. To aid brand loyalty, businesses have to also exert significant force. They need to persuade potential clients that their product has an important benefit over other products to validate the steady purchase of their products. Organisations will likewise attempt to use brand loyalty created for a product to other product offerings from the organisation.

2.5. Hypotheses Development and Conceptual Framework

The section below presents literature supporting the hypothesis development and Figure 1 presents the conceptual framework for the study.

2.6. Relationship between Perceived Value and Brand Satisfaction

Although several studies have investigated the relationship between perceived value and brand satisfaction, there is a dearth

of studies that have explored this relationship fashion apparel such as the sneakers. Customer perceived value has been documented in the relational marketing area as its critical impact on some important communication outcomes, such as brand trust, brand satisfaction and brand loyalty (Pirooz et al., 2020). Furthermore, a study also indicated perceived value is a predictor of customer satisfaction, also proved that the perceived value positively influences customer satisfaction among Vietnamise fashion consumers (Cuong, 2020). Likewise, other scholars concur that perceived value and customer service positively influence brand satisfaction (Sebastián-Morillas et al., 2023; Widiandita and Ketut, 2020). Thus, given the theoretical evidence provided above, the study posits the following:

H_1: There is a relationship between perceived value and brand satisfaction.

2.7. Relationship between Perceived Quality and Brand Satisfaction

Research posits hat product quality influences customer satisfaction, though, the quality performance must be valued appropriately (Samudro et al., 2020). Similarly other scholars have contended that there is a positive relationship between perceived quality and brand satisfaction on ecommerce websites (Widiandita and Ketut, 2020; Abbasi et al., 2024). Furthermore, perceived quality was found to influence brand satisfaction within civil aviation space (Zhang et al., 2023). Additionally, service quality has a positive influence on customer satisfaction in conventional banks in Oman (De Bruin et al., 2021). Malhan and Agnihotri (2022) established that perceived quality positively influences brand satisfaction for sports footwear brands among Generation Y consumers. Considering this, it is hypothesised that:

H_2: There is a relationship between perceived quality and brand satisfaction.

2.8. Relationship between Self-Brand Connection and Brand Satisfaction

A number of studies have interrogated the relationship between self-brand connection and brand. For instance one study revealed that self-brand connection is positioned as a mediator of the effects of satisfaction and value on relationship quality. Customer satisfaction has a positive and significant effect on self-brand connections (Seminari et al., 2023). However, Yu and Kim (2020) examined the relationship between self-city brand connection, city brand experience and city ambassadors and contended that self-city brand connection is positively related city brand experience and city brand satisfaction in Seoul and Busan respectively. Hence we can hypothesise that:

H_3: There is a relationship between self-brand connection and brand satisfaction.

2.9. Relationship between Perceived Aesthetic and Brand Satisfaction

Anindita and Perdana (2022) found that that good website aesthetics can directly increase customer satisfaction. Additionally, researchers postulate that aesthetics stands as one of the most crucial factors impacting consumer perception from various angles (Nazera et al., 2024). Specifically, their findings demonstrated a significant relationship between perceived quality, aesthetics, durability of products, and customer satisfaction (Nazera et al., 2024). In lieu of the literature provided the relationship between perceived aesthetics and brand satisfaction is proposed:

H_4: There is a positive relationship between perceived aesthetic and brand satisfaction.

2.10. Relationship between Brand Satisfaction and Brand Loyalty

Several studies have found a positive and significant relationship between brand satisfaction and brand loyalty. Research found that brand loyalty positively influence brand satisfaction at PT Telkom Plaza in Makassar (Susanto et al., 2022). Lacap et al. (2021) argue that brand satisfaction and perceived quality are also important forces that drive their loyalty towards the brand of the telecommunication companies. In addition, research suggests that marketing executives must also focus on creating brand satisfaction and building trust in the brand given that these are the precursors to the brand loyalty of consumers of branded food products (Khowjoy et al., 2023).Conversely, researchers can assume the same can be extended to the sneaker context. Based on the preceding arguments, the following hypothesis is postulated:

H_5: There is a relationship between Brand satisfaction and Brand loyalty.

3. RESEARCH DESIGN AND METHODOLOGY

The empirical study adopted a quantitative and cross sectional approach and using closed ended self-administered questionnaires to ascertain the determinants of sneaker brand loyalty of millennials in South Africa. Respondents were approached at public places park runs, bus stops, libraries and communal halls and asked to answer questions based on their favourite sneaker brand. The data was captured, cleaned and captured on an excel spreadsheet prior to analysis**.** Due to the unavailability of a sampling frame, non-probability sampling, a form of convenience sampling was utilised for purposes of selecting participants for the study. The target audience was young adults between the ages of 18 and 35 who were familiar with sneaker brands and resided in Johannesburg South Africa. A total of 333 completed questionnaires were usable for analysis.

3.1. Research Context Millennials and Sneakers

Millennials were chosen as the subjects for investigation because this cohort arguably has the attitude and ability to contribute and buy sports clothing brands and possess a positive and significant effect on brand loyalty in purchase intention decisions (Maemunah and Susanto, 2020). In addition, selecting this cohort as subjects of investigation enables international sneaker marketers to get a deeper understanding of this cohort's behaviour and perhaps draw parallels and or similarities with their counterparts in developed countries.

3.2. Measurement Scales

The questionnaire consists of two parts which are part A and part B. Part A consists of closed ended questions concerning the general information of the participants, while part B consists of a

five-point Likert scale measuring the constructs. For the purposes of this study, the measurement items have been adapted from previous literature and appropriate modifications were made in order to fit the study context. Perceived value is adapted from Eggert and Ulaga (2002), Perceived quality is adapted from Shin (2009), Self-brand connection is adapted from Escalas and Bettman (2003), Perceived aesthetic is adapted from Cyr et al. (2006), Brand satisfaction is adapted from Spreng et al. (1996) and lastly Brand loyalty is adapted from Veloutsou (2015). Once the instrument was approved by the university ethics committee, it was pre-tested on 40 randomly selected participants from the stated sample size, however, only 37 questionnaires were usable. This was done to ensure that the questionnaire is relevant and applicable to the identified respondents as well as to get critical feedback concerning the structuring of the instrument. The construct items are presented in Table 1 below.

4. DATA ANALYSIS AND PRESENTATION OF RESULTS

Data was processed in SPSS and AMOS software respectively in order to generate descriptive statistics and hypotheses testing results respectively. The sample profile was prepared together with reliability and validity checks. As for hypothesis testing, structural equation modeling was employed adopting a two-stage approach which began with confirmatory factor analysis followed by path-analysis.

As indicated in Table 2, model fit assessment was also conducted to ensure that the data collected met recommended thresholds necessary for accurate testing of hypotheses. The accuracy analysis statistics are presented in the section that follows in Table 3. Figure 2 presents the conceptual model of the study.

4.1. Improved CFA Model

Confirmatory factor analysis is conducted because it provides the researcher with an indicative instrument to better assess whether the data collected is in line with the theoretically expected pattern of the constructs, and moreover it's to verify whether measures used have in actual fact measured what they propose to measure (Matsunaga, 2010). Figure 2 is the improved model after these items; PQ3, SBC7, BL1, BL2, BL5, BL6, BL8; were deleted. These items were deleted so as to improve the model fit indices of the study. The minimum acceptable value of AVE is 0.50 as an AVE of 0.50 or higher implies that the construct explains more than half of the variance of its items. If AVE is <0.50, it means that, on average, more errors remain in the items than the variance explained by the construct (Hair et al., 2014). The rules for outer loading testing are summarised as follows:

1. If outer loading is <0.40, delete the item.
2. If outer loading is more than 0.40 but <0.70, then analyse the effect of deleting the item on AVE and composite reliability. If deletion increases AVE and composite reliability above the threshold, then delete the item. However, if item deletion does not increase AVE and composite reliability above the threshold, retain the item.
3. If outer loading is >0.70, retain the item.

Table 1: Construct items

Variable	Code	Items	Source
Perceived value	PV1	Compared to the price we pay I get reasonable quality of sneakers.	Eggert and Ulaga (2002)
	PV2	Compared to the quality we get we pay a reasonable price for sneakers.	
	PV3	The purchasing relationship delivers us superior net value for sneakers	
Perceived quality	PQ1	I think this brand provides very reliable sneakers	Shin 2009
	PQ2	I think that the benefits I can get from this sneaker brand are valuable	
	PQ3	This sneaker brand provides the best promotions that I need	
Perceived aesthetic	PA1	The sneaker design (i.e. colours, boxes etc) is attractive.	Cyr et al. (2006)
	PA2	This sneaker brand looks professionally designed.	
	PA3	The graphics on the sneaker brand are meaningful.	
	PA4	The overall look and feel of the sneakers is visually appealing.	
SBC	SBC1	This sneaker brand reflects who I am	Escalas and Bettman (2003)
	SBC2	I can identify with this sneaker brand	
	SBC3	I feel a personal connection to this sneaker brand	
	SBC4	I can use sneaker brand X to communicate who I am to other people	
	SBC5	I think this brand of sneakers could help me because of the type of person I want to be	
	SBC6	I consider this brand of sneakers to be me (it reflects who I consider myself to be or the way I want the way I want to present myself	
	SBC7	This brand of sneakers suits me well	
Brand satisfaction	BS1	The sneaker brand is as good as I expected	Spreng et al. (1996)
	BS2	Th sneaker brand was worth the price I paid for	
	BS3	The sneaker brand entirely fulfils my needs	
Brand loyalty	BL1	The quality of my preferred brand of sneakers is superior to other brands.	Veloutsou (2015)
	BL	When I am asked about sneaker brands, the name of my preferred brand comes to immediate.	
	BL2	If I receive information contradiction my choice of sneakers, I would still buy my current preferred brand	
	BL1	I am willing to pay more to buy my preferred brand of sneakers.	
	BL1	If my preferred brand sneakers is unavailable in a particular store I would buy an alternative.	
	BL1	I will always purchase my preferred brand of sneakers.	
	BL1	I am willing to buy new brand of sneakers.	
	BL1	I consider myself loyal to my preferred brand of sneakers.	

Figure 1: Sneaker brand loyalty conceptual model

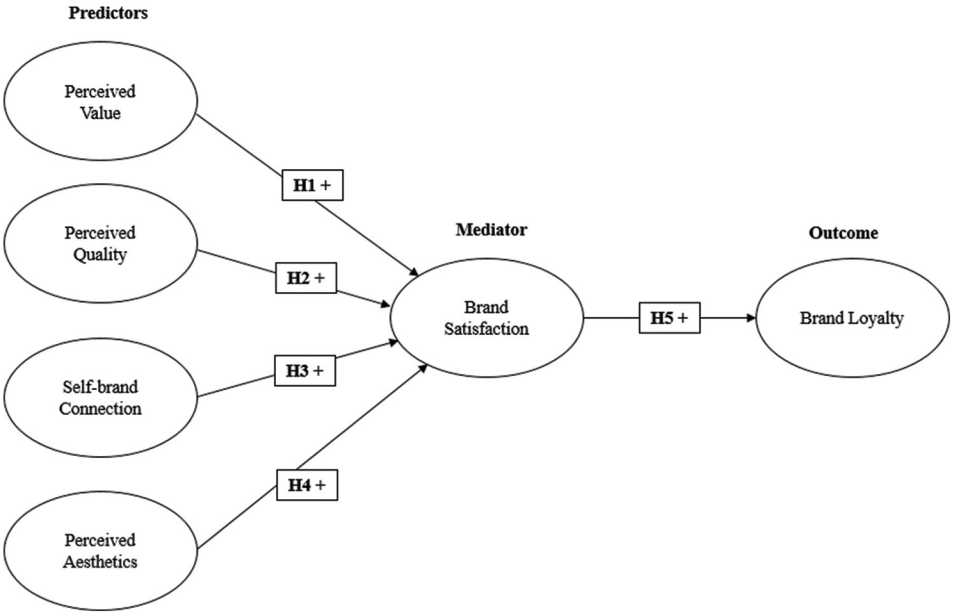


Table 2: Model fit indices

Model fit indices	Acceptable threshold	Current study	Decision: Acceptable/ unacceptable
Chi-square value: χ^2/df	<5	1.633	Acceptable
Goodness-of-fit index	>0.90	0.922	Acceptable
Norm fit index	>0.90	0.903	Acceptable
Incremental fit index	>0.90	0.960	Acceptable
Tucker Lewis index	>0.90	0.951	Acceptable
Comparative fit index	>0.90	0.959	Acceptable
Random measure of standard error approximation	<0.08	0.044	Acceptable

The following section illustrates the confirmatory factor analysis model in Figure 2 followed by a discussion on reliability and validity checks on the data.

4.2. Reliability Statistics

The Table 3 outlines the statistics obtained from SPSS and from computing the confirmatory factor analysis on Amos. The thresholds for Cronbach alpha, composite reliability (CR) and average variance extracted (AVE) are α = 0.6 to 0.8, CR = 0.6 to 0.7 and above, AVE = 0.4 and above. The Cronbach alpha is used to evaluate the reliability of the scale, the CR is to measure the internal consistency, and the AVE can also be used to measure reliability. The Cronbach alpha of the variables are within the threshold showing their internal consistency, however perceived quality and brand loyalty are quite low with α = 0.58 and α = 0.59. This could be because of the small number of items which affects the value. The composite reliability of all the variables range from 0.65 to 0.88 which is within and well over the threshold of 0.6 which is good. The average variance extracted of the variables ranges from 0.42 to 0.70, which is also within the threshold as it had to be above 0.4. In other words, the constructs exhibit satisfactory reliability.

Table 3: Accuracy analysis statistics

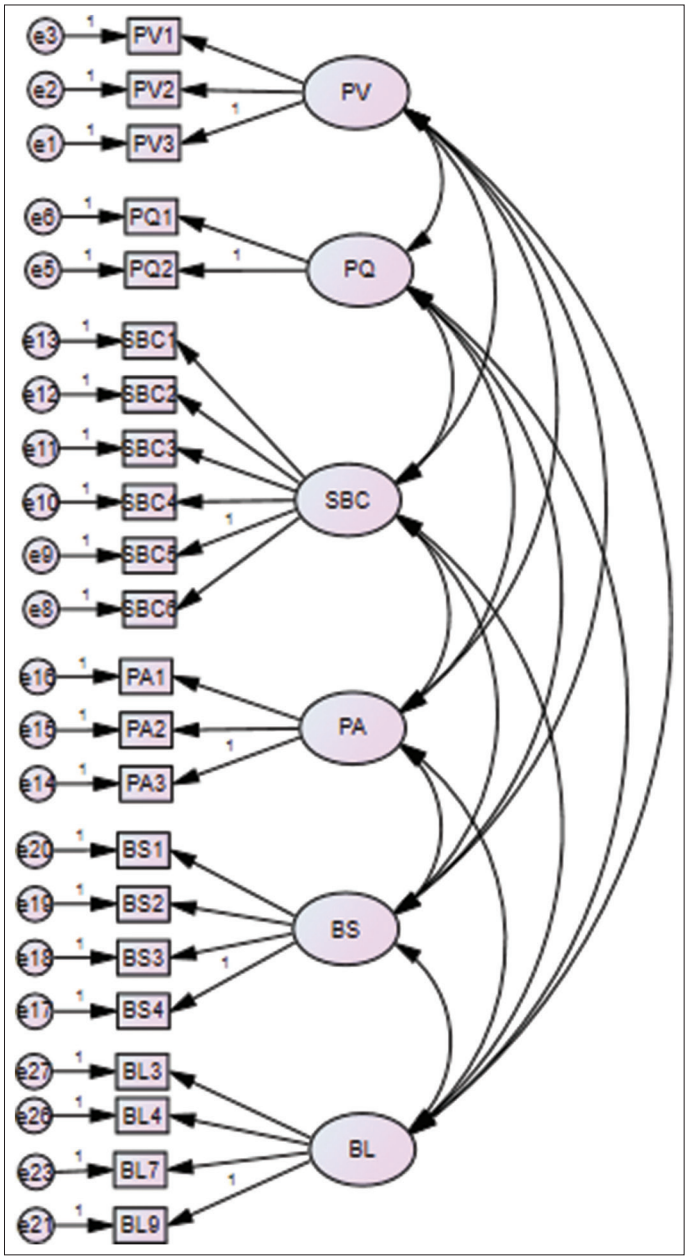
Research construct	Cronbach's test: Item-total	Cronbach's test: α-value	C.R. value	AVE value	Factor loadings
PV					
PV1	0.563				0.824
PV2	0.664	0.737	0.79	0.56	0.733
PV3	0.467				0.673
PQ					
PQ1	0.388				0.654
PQ2	0.514	0.585	0.65	0.48	0.729
SBC					
SBC1	0.719				0.778
SBC2	0.630				0.688
SBC3	0.690	0.872	0.87	0.53	0.767
SBC4	0.727				0.757
SBC5	0.631				0.658
SBC6	0.698				0.711
PA					
PA1	0.743				0.813
PA2	0.773	0.875	0.88	0.70	0.856
PA3	0.761				0.841
BS					
BS1	0.593				0.761
BS2	0.583	0.770	0.77	0.46	0.688
BS3	0.595				0.630
BS4	0.542				0.627
BL					
B3	0.488				0.598
B4	0.494	0.597	0.74	0.42	0.571
B7	0.425				0.603
B9	0.550				0.788

4.3. Validity Statistics

In order to verify the validity of the variables, the factor loadings, item total and inter-construct correlation matrix are examined. In order for an item to be considered convergent valid, it should be equal or >0.5 (Yang and Lai, 2010). The factor loadings of the items ranged from 0.571 to 0.856, which outlines that the items are measuring 50% of what they claim to measure

(Hair et al., 2006). Now the item-total also aims to measure the convergent validity, however the suggested threshold is 0.3 and above. All the variables exceeded the threshold which shows good convergent validity (Hair et al., 2014). The inter-construct correlation matrix below (Table 4) illustrates that the correlation coefficients are below 1 and the P-values are significantly below 0.001, which validates that the discriminant validity of the variables. This means the constructs differ from other constructs and it measures the concept it supposedly to measure (Henseler et al., 2015).

Figure 2: Confirmatory factor analysis



In Figure 3, the path (structural model) analysis is presented with all the proposed and tested hypotheses. This is followed by Table 5 which details the results from hypotheses testing. Path-coefficients and their respective P-values are provided and discussed.

4.4. Discussion and Implications

H_1: There is a relationship between perceived value and brand satisfaction.

The proposed relationship between perceived value and brand satisfaction is supported and significant. The path coefficient ($\beta = 0.227$) confirms that the strength of the relationship is moderate and positive, and the P-value ($P < 0.013$). These findings are consistent with existing literature that posits that perceived value directly influences customer satisfaction and ultimately behavioural intentions in the context of Vietnamise convenience stores (Tran and Le, 2020). Moreover, a recent study also confirmed that perceived value predicts brand satisfaction (Nkwei et al., 2023). Therefore, it is imperative that marketers ensure that marketers exceed their customer's perceived value as this is believed to be a predictor of brand satisfaction for sneaker brands among millennials in South Africa.

H_2: There is a relationship between perceived quality and brand satisfaction

The results of the path coefficient ($\beta = 0.397$) and P-value ($P < 0.001$) suggests that perceived quality has a positive and significant relationship with brand satisfaction. In other words, if consumers regard a particular sneaker brand to be of great quality, they are likely to be satisfied with the brand. The findings of the study concur with previous studies that confirmed the positive relationship between perceived quality and brand satisfaction (Samudro et al., 2020; Widiandita and Ketut, 2020; Abbasi et al., 2024). Based on this finding, marketers must ensure that their sneakers are superior quality given that it positively influences brand satisfaction among millennials.

H_3: There is a relationship between self-brand connection and brand satisfaction.

The third hypothesis postulated that there is a relationship between self-brand connection and brand satisfaction, and this is proven to be significant and supported. The findings of the study through the path coefficient ($\beta = 0.157$) and P-value ($P < 0.006$) substantiates

Table 4: Inter-construct correlation matrix

Constructs		PV	PQ	SBC	PA	BS	BL
PV	Pearson correlation	1					
PQ	Pearson correlation	0.499**	1				
SBC	Pearson correlation	0.251**	0.355**	1			
PA	Pearson correlation	0.344**	0.339**	0.336**	1		
BS	Pearson correlation	0.528**	0.541**	0.408**	0.525**	1	
BL	Pearson correlation	0.287**	0.375**	0.390**	0.375**	0.423**	1

**Correlation is significant at the 0.01 level (2-tailed). PV: Perceived value, PQ: Perceived quality, SBC: Self-brand connection, PA: Perceived aesthetic, BS: Brand satisfaction, BL: Brand loyalty

Figure 3: Path model analysis. PV: Perceived value, PQ: Perceived quality, SBC: Self-brand connection, PA: Perceived aesthetic, BS: Brand satisfaction, BL: Brand loyalty

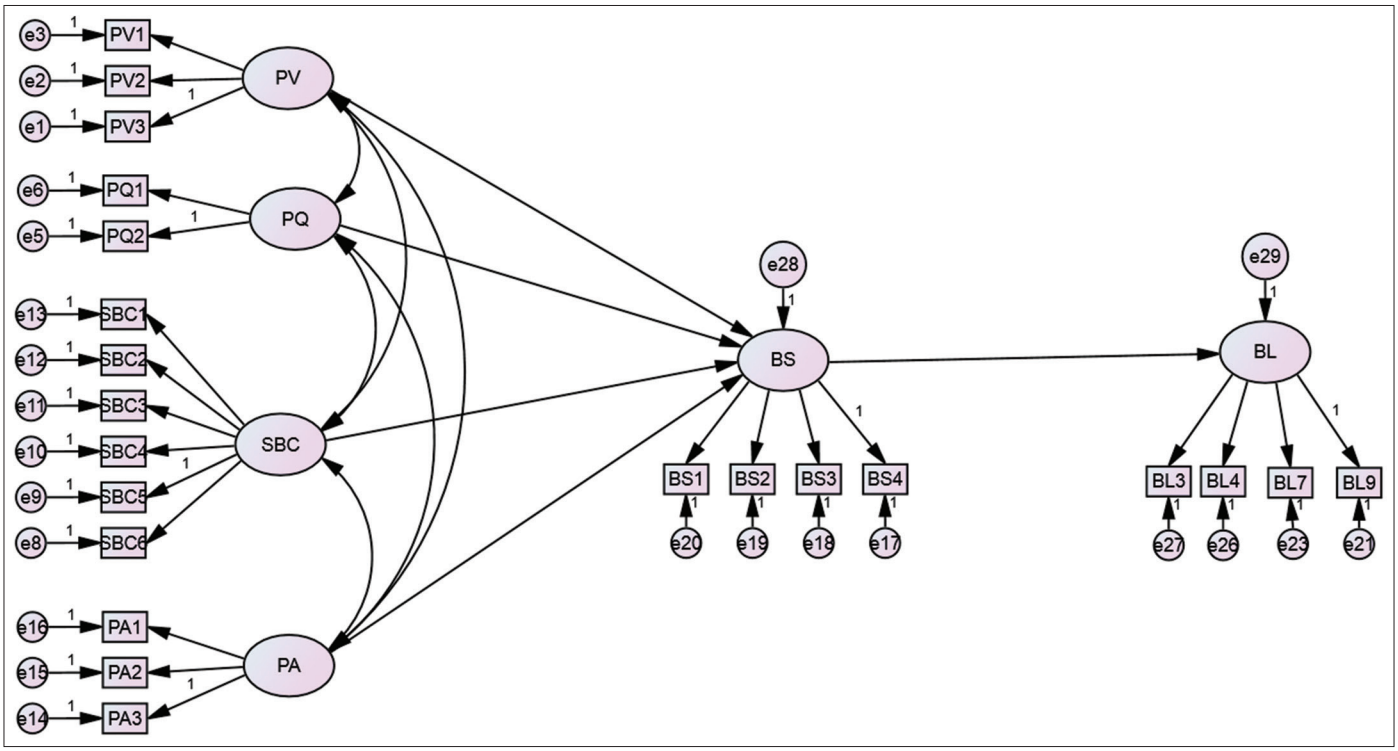


Table 5: Hypotheses results

Proposed relationship	Hypothesis	Path coefficients	P-values	Rejected/ supported
PV-BS	H_1	0.227	0.013	Supported and Significant
PQ-BS	H_2	0.397	***	Supported and significant
SBC-BS	H_3	0.157	0.006	Supported and significant
PA-BS	H_4	0.327	***	Supported and significant
BS-BL	H_5	0.501	***	Supported and significant

PV: Perceived value, PQ: Perceived quality, SBC: Self-brand connection, PA: Perceived aesthetic, BS: Brand satisfaction, BL: Brand loyalty

that the relationship is supported and significant. The findings in this study refute existing knowledge that suggests that brand satisfaction is a precursor of self-brand connection (Seminari et al., 2023; Dwivedi et al., 2016). In the context of this study, a consumer that has a higher self-brand connection, has a greater chance of being satisfied with the brand. For this reason, it is imperative that marketers ensure that their brand connects with the self of their target consumer in order to ultimately influence brand satisfaction.

H_4: There is a relationship between perceived aesthetic and brand satisfaction.

Perceived aesthetic and brand satisfaction hypothesis is also supported and significant. The path coefficient ($\beta = 0.327$) confirms that the relationship is supported and the P-value ($P < 0.001$) also verifies that the relationship is significant. The current findings corroborate with previous scholarly findings that revealed that a positive relationship between perceived aesthetics and customer satisfaction exists (Nazera et al., 2024; Anindita and Perdana, 2022). Therefore, it is vital that brand managers communicate messages that emphasise on sneaker aesthetics given that it important and ultimately a predictor of brand satisfaction amongst millennials in South Africa.

H_5: There is a relationship between brand satisfaction and brand loyalty

The fifth hypothesis stated that there is a relationship between brand satisfaction and brand loyalty, and this relationship is supported and significant. The path coefficient ($\beta = 0.501$) validates the strength of the relationship and it is strong, and the P-value ($P < 0.001$) suggests that brand satisfaction significantly influences brand loyalty. This is the strongest relationship proposed in the study. The current findings, corroborates previous studies that found a direct relationship between brand satisfaction and brand loyalty (Khowjoy et al., 2023; Lacap et al., 2021). Hence, the results demonstrate that the more millennials are satisfied, the greater the likelihood of them being loyal to a particular sneaker brand. This suggests that marketers should ensure that millennials are satisfied overall with the sneaker brand in order to build and maintain brand loyal customers.

5. CONCLUSION

This research sought to examine the antecedents of sneaker brand loyalty among millennials in South Africa. It was necessary to investigate millennials in order to get a deeper understanding of their consumer behaviour and market potential in order to generate meaningful insights for both local and international brands that may want to tap into this emerging market. The findings from the empirical study suggest that perceived quality, perceived value,

brand satisfaction, aesthetics significantly influence brand loyalty among millennials. Hence, brands must establish a thorough and in-depth insights of this cohort in order to design and execute the most effective strategies to build and maintain brand loyalty.

5.1. Implications

5.1.1. Theoretical implications

This study has multiple theoretical implications. Firstly, current study significantly contributes to the extension of the generational theory particularly highlighting the various antecedents, and perceptions that influence brand loyalty among millennials in South Africa. Secondly it adds to consumer behaviour literature on the antecedents of brand loyalty and sneaker/fashion brands. Furthermore, this study makes vital contributions to brand relationship theory which is used to understand how self-brand connection influences brand loyalty which is mediated by brand satisfaction.

5.1.2. Managerial implications

In line with the earlier investigations, this research demonstrated that perceived quality, perceived value, brand satisfaction, aesthetics significantly influence brand loyalty. Hence, brand managers should focus on strategies that enhance the millennial consumers perceived value, perceived quality, self-brand connection and perceived aesthetics to intensify brand loyalty. Additionally, this study can assist both local and international brand managers in the footwear industry to better understand the unique attributes of millennials and execute advertising strategies that foster brand loyalty given the financial viability and loyalty of this generational cohort.

5.2. Limitations and Directions for Future Research

The respondents for this study comprised young adults who predominately reside in Johannesburg which therefore impacts the generalizability to millennials in South Africa. Consequently, it paves the path for future studies to include young adults around the country and other parts of Southern Africa to extend the scope. Further research can be expounded on the brand relationship theory in a South African context and across other product categories such as fashion, wine and financial services.

The research adopted a quantitative approach which could be a possible limitation, further studies could be qualitative in nature in order to gain deeper insights into the predictors of brand loyalty for sneaker brands among millennials. Additionally, it is proposed for subsequent studies to consider modification of present framework for instance, testing relationships that were not measured in the current research. For example, testing, the causal relationship between perceived aesthetics and brand loyalty as this would explain the direct impact of visual appeal perception on sneaker brand loyalty. Finally, it would also be interesting to establish the effect of the current study's antecedents on brand satisfaction if perceived quality is removed as this could have influenced how the respondents associated the other antecedents with brand satisfaction.

REFERENCES

Abbasi, A.Z., Rather, R.A., Hooi Ting, D., Nisar, S., Hussain, K., Khwaja, M.G., Shamim, A. (2024), Exploring tourism-generated social media communication, brand equity, satisfaction, and loyalty: A PLS-SEM-based multi-sequential approach. Journal of Vacation Marketing, 30(1), 93-109.

Anam, H., Faiz, R. (2016), An empirical examination of brand loyalty via customer delight in Pakistan. Journal of Management and Research, 3(1), 1-28.

Anantharaman, R., Prashar, S., Tata, S.V. (2023), Examining the influence of customer-brand relationship constructs and bandwagon effect on brand loyalty. Benchmarking: An International Journal, 30(2), 361-381.

Anindita, R., Perdana, D.P. (2022), Website aesthetic in Millenial's customer experience on satisfaction and impulse buying: EWOM as moderator. Media Ekonomi dan Manajemen, 37(2), 210-225.

Bekoe, S.O. (2017), Sneaker Culture Has Given Black Men Fashion Freedom While Creating Restriction. Available from: https://academicworks.cuny.edu/gj_etds/202

Bushara, M.A., Abdou, A.H., Hassan, T.H., Sobaih, A.E.E., Albohnayh, A.S.M., Alshammari, W.G., Aldoreeb, M., Elsaed, A.A Elsaied, M.A. (2023), Power of social media marketing: How perceived value mediates the impact on restaurant followers' purchase intention, willingness to pay a premium price, and E-WoM?. Sustainability, 15(6), 5331.

Carr, D. (2019), The Effectiveness of Collaboration Within Supply Chain Management: A Case Study of Adidas Group. CMC Senior Theses. p2078. Available from: https://scholarship.claremont.edu/cmc_theses/2078

Chatzi, S., Peitzika, E., Konsolaki, G. (2024), Enhancing brand loyalty: A relationship marketing perspective within the context of contractual services. Journal of Relationship Marketing, 23, 1-33.

Chen, N., Wang, Y., Li, J., Wei, Y., Yuan, Q. (2020), Examining structural relationships among night tourism experience, lovemarks, brand satisfaction, and brand loyalty on "cultural heritage night" in South Korea. Sustainability, 12(17), 6723.

Choi, Y.K., Yoon, S., Lacey, H.P. (2013), Online game characters' influence on brand trust: Self-disclosure, group membership, and product type. Journal of Business Research, 66(8), 996-1003.

Cuong, D.T. (2020), The impact of brand credibility and perceived value on customer satisfaction and purchase intention at fashion market. Power, 12(3), 691-700.

Cuong, D.T. (2020), The influence of brand satisfaction, brand trust, brand preference on brand loyalty to laptop brands. Systematic Reviews in Pharmacy, 11(11), 95-101.

Cuong, D. T. (2020). The influence of brand satisfaction, brand trust, brand preference on brand loyalty to laptop brands. Systematic Reviews in Pharmacy, 11(11), 95-101.

Cyr, D., Head, M., Ivanov, A. (2006), Design aesthetics leading to m-loyalty in mobile commerce. Information Management, 43(8), 950-963.

D'Souza, J., Gurin, M. (2016), The universal significance of Maslow's concept of self-actualization. The Humanistic Psychologist, 44(2), 210-214.

De Bruin, L., Roberts-Lombard, M., de Meyer-Heydenrych, C. (2021), The interrelationship between internal marketing, employee perceived quality and customer satisfaction–a conventional banking perspective. Cogent Business Management, 8(1), 1872887.

Di Benedetto, C.A., Kim, K.H. (2016), Customer equity and value management of global brands: Bridging theory and practice from financial and marketing perspectives: Introduction to a Journal of Business Research Special Section. Journal of Business Research, 69(9), 3721-3724.

Dwivedi, A. (2014), Self-brand connection with service brands: examining relationships with performance satisfaction, perceived value, and brand relationship quality. Services Marketing Quarterly, 35(1), 37-53.

Dwivedi, A. (2014). Self-brand connection with service brands: examining

relationships with performance satisfaction, perceived value, and brand relationship quality. Services MarketingQuarterly, 35(1), 37-53.

Dwivedi, A., Johnson, L.W., McDonald, R. (2016), Celebrity endorsements, self-brand connection and relationship quality. International Journal of Advertising, 35(3), 486-503.

Eggert, A., Ulaga, W. (2002), Customer perceived value: A substitute for satisfaction in business markets?. Journal of Business and Industrial Marketing, 17(2/3), 107-118.

Escalas, J.E., Bettman, J.R. (2003), You are what they eat: The influence of reference groups on consumers' connections to brands. Journal of Consumer Psychology, 13(3), 339-348.

Fournier, S. (1998), Consumers and their brands: Developing relationship theory in consumer research. Journal of Consumer Research, 24(4), 343-373.

Ghorbanzadeh, D., Rahehagh, A. (2020), The role of emotional structures in the relationship between satisfaction and brand loyalty. Cogent Psychology, 7(1), 1782098.

Gracia, V.B., Winkelheus, K. (2016), The next revolution in mass customization: An insight into thesneaker market. International Journal of Marketing, Communication and New Media, 4(6), 85-104.

Hagtvedt, H., Patrick, V.M. (2014), Consumer response to overstyling: Balancing aesthetics and functionality in product design. Psychology and Marketing, 31(7), 518-525.

Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E., Tatham, R.L. (2006), Multivariate Data Analysis. 6th ed. Upper Saddle River, NJ: Pearson/Prentice Hall.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2014). A Primer on Partial Least Squares Structural Equation Modelling (PLS-SEM). Los Angeles: SAGE Publications

Hair, J.F., Hult, G.T.M., Ringle, C.M., Sarstedt, M. (2014), A Primer on Partial Least Squares Structural Equation Modelling (PLS-SEM), Los Angeles: SAGE Publications.

Hassan, M.M., Rasel, M.K.A. (2018), Determinants of brand loyalty of millennial or generation Y. Barishal University Journal, 5, 95.

Henseler, J., Ringle, C.M., Sarstedt, M. (2015), A new criterion for assessing discriminant validity in variance-based structural equation modeling. Journal of the Academy of Marketing Science, 43, 115-135.

Hsu, C.L. (2023), Enhancing brand love, customer engagement, brand experience, and repurchase intention: Focusing on the role of gamification in mobile apps. Decision Support Systems, 174, 114020.

Huang, X., Liu, C., Wang, J., Zheng, J. (2025), Exploring Chinese millennials' purchase intentions for clothing with AI-generated patterns from premium fashion brands: An integration of the theory of planned behavior and perceived value perspective. Journal of Theoretical and Applied Electronic Commerce Research, 20(2), 141.

Hudson, S., Huang, L., Roth, M.S., Madden, T.J. (2016), The influence of social media interactions on consumer-brand relationships: A three-country study of brand perceptions and marketing behaviors. International Journal of Research in Marketing, 33(1), 27-41.

Hung, W.K., Chen, L.L. (2012), Effects of novelty and its dimensions on aesthetic preference in product design. International Journal of Design, 6(2), 81-90.

Hussain, S.B., Rawjee, V.P., Penceliah, S. (2014), The applicability of relationship marketing at non-profit organizations: A developing country perspective. Problems and Perspectives in Management, 12(4), 155-160.

Jamshidi, D., Rousta, A. (2021), Brand commitment role in the relationship between brand loyalty and brand satisfaction: Phone industry in Malaysia. Journal of Promotion Management, 27(1), 151-176.

Japutra, A., Ekinci, Y., Simkin, L., Nguyen, B. (2018), The role of ideal self-congruence and brand attachment in consumers' negative behaviour: Compulsive buying and external trash-talking. European Journal of Marketing, 52(3/4), 683-701.

Jiang, Z., Wang, W., Tan, B.C., Yu, J. (2016), The determinants and impacts of aesthetics in users' first interaction with websites. Journal of Management Information Systems, 33(1), 229-259.

Keller, K.L. (2003), Brand synthesis: The multidimensionality of brand knowledge. Journal of Consumer Research, 29(4), 595-600.

Khowjoy, K., Petmee, P., Phakamach, V., Sriplang, N., Kaewsrem, S., Chayomchai, A. (2023), Factors influencing brand loyalty: The mediating effect of brand satisfaction and trust. Polish Journal of Management Studies, 27(2), 136-154.

Kohyari-Haghighat, A., Dehdashti, Z.S., Ottoofi, A. (2014), Identifying factors influencing on purchase intention of foreign brand in Iran (Case study: Samsung and Bosch). Journal of Brand Management, 1(1), 75-99.

Lacap, J.P.G., Cham, T.H., Lim, X.J. (2021), The influence of corporate social responsibility on brand loyalty and the mediating effects of brand satisfaction and perceived quality. International Journal of Economics and Management, 15(1), 69-87.

Levy, S., Gendel Guterman, H. (2021), Twofold impact of experiential marketing: Manufacturer brand and hosting retailer. Euromed Journal of Business, 16(4), 345-360.

Li, M., Hua, Y., Zhu, J. (2021), From interactivity to brand preference: The role of social comparison and perceived value in a virtual brand community. Sustainability, 13(2), 625.

Lissitsa, S., Kol, O. (2021), Four generational cohorts and hedonic m-shopping: Association between personality traits and purchase intention. Electronic Commerce Research, 21 (2021), 545-570.

Loughran Dommer, S., Swaminathan, V., Ahluwalia, R. (2013), Using differentiated brands to deflect exclusion and protect inclusion: The moderating role of self-esteem on attachment to differentiated brands. Journal of Consumer Research, 40(4), 657-675.

Maemunah, S., Susanto, P.H. (2020), The effect of attitude and purchasing of millennials consumers towards brand love in sports wear brands. International Journal of Advanced Science and Technology, 29(5), 515-523.

Malhan, S., Agnihotri, S. (2022), Effect of brand experience and customer satisfaction on brand loyalty toward sports shoe brands. IUP Journal of Marketing Management, 21(4), 7-20

Maslow, A.H. (1970), Motivation and Personality. 2nd ed. New York: Viking.

Matsunaga, M. (2010), How to factor-analyze your data right: Do's, Don'ts, and How-To's. International Journal of Psychological Research, 3(1), 97-110.

Msosa, S.K. (2023), Customer satisfaction and brand loyalty amongst South African Millennials during the Covid-19 pandemic. International Journal of Research in Business and Social Science (2147-4478), 12(3), 22-30.

Nazera, F., Tanvir, K., Haq, M.K., Raju, V. (2024), Examining the impact of perceived quality, aesthetics, and durability on customer satisfaction: Empirical evidence and implications. Journal of Reproducible Research, 2(2), 115-124.

Nisar, T.M., Whitehead, C. (2016), Brand interactions and social media: Enhancing user loyalty through social networking sites. Computers in Human Behavior, 62, 743-753.

Nkwei, E.S., Roberts-Lombard, M., Maduku, D.K. (2023), Modeling condom brand loyalty of young south african adults–an expectancy confirmation perspective. Journal of Nonprofit and Public Sector Marketing, 36, 1-25.

Onyebu, C.M.P., Omotayo, O.A.R. (2017), Employee job satisfaction and organizational performance an insight from selected hotels in Lagos Nigeria. Arabian Journal of Business and Management Review, 6(10), 48-59.

Ozuem, W., Willis, M., Howell, K., Helal, G., Ranfagni, S., Lancaster, G.

(2021), Effects of online brand communities on millennials' brand loyalty in the fashion industry. Psychology and Marketing, 38(5), 774-793.

Park, C.W., Eisingerich, A.B., Park, J.W. (2013), Attachment-aversion (AA) model of customer-brand relationships. Journal of Consumer Psychology, 23(2), 229-248.

Parasuraman, A., Zeithaml, V.A., Berry, L. (1988), SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. Journal of Retailing, 64(1), 12-40.

Parment, A. (2013), Generation Y vs. baby boomers: Shopping behavior, buyer involvement and implications for retailing. Journal of Retailing and Consumer Services, 20(2), 189-199.

Pirooz, O., Babakhani, T., Hamedi, O., Torabi, M. (2020), Investigating the relationship between brand self-reliance and loyalty with the mediating role of brand experience: A case study in Tehran private hospitals. Archives of Pharmacy Practice, 1, 68.

Rahman, M.S., Hossain, M.A., Hoque, M.T., Rushan, M.R.I., Rahman, M.I. (2021), Millennials' purchasing behavior toward fashion clothing brands: Influence of brand awareness and brand schematicity. Journal of Fashion Marketing and Management: An International Journal, 25(1), 153-183.

Rajasakran, T., Sinnappan, S., Raja, S.S. (2014), Purushartha: Maslow's need hierarchy revisited. The Anthropologist, 18(1), 199-203.

Ram, J., Wu, M.L. (2016), A fresh look at the role of switching cost in influencing customer loyalty: Empirical investigation using structural equation modelling analysis. Asia Pacific Journal of Marketing and Logistics, 28(4), 616-633.

Samudro, A., Sumarwan, U., Simanjuntak, M., Yusuf, E. (2020), Assessing the effects of perceived quality and perceived value on customer satisfaction. Management Science Letters, 10(5), 1077-1084.

Sebastián-Morillas, A., Monfort, A., López-Vázquez, B. (2024), Effects of perceived value and customer service on brand satisfaction. Journal of Promotion Management, 30(2), 187-203.

Seminari, N., Rahyuda, I., Sukaatmadja, I., Sukawati, T. (2023), The role of self-brand connection to mediate the effect of customer satisfaction on repurchase intention in moderation of lovemark. International Journal of Data and Network Science, 7(3), 1295-1302.

Seock, Y.K., Shin, J., Yoon, Y. (2024), Embracing environmental sustainability consciousness as a catalyst for slow fashion adoption. Sustainable Development, 32, 4071-4081.

Shin, D.H. (2009), Determinants of customer acceptance of multi-service network: An implication for IP-based technologies. Information and Management, 46(1), 16-22.

Singh, R., Khan, M.F.M., Mishra, A. (2021), Role of customer satisfaction and Trust in increasing the repurchase intent of prepaid mobile subscribers in India. IPE Journal of Management, 11(2), 81-90.

Spreng, R.A., MacKenzie, S.B., Olshavsky, R.W. (1996), A reexamination of the determinants of consumer satisfaction. Journal of Marketing, 60(3), 15-32.

Susanto, S.E., Toto, H.D., Krisnanto, B., Singkeruang, A.W.T.F., Ramlah, R. (2022), The Influence of brand loyalty and brand image on customer satisfaction. Point of View Research Management, 3(1), 70-80.

Tan, C.N.L. (2024), Do millennials' personalities and smartphone use result in materialism? The mediating role of addiction. Young Consumers, 25, 308-328.

Tran, V.D., Le, N.M.T. (2020), Impact of service quality and perceived value on customer satisfaction and behavioral intentions: Evidence from convenience stores in Vietnam. The Journal of Asian Finance, Economics and Business, 7(9), 517-526.

Veloutsou, C. (2015), Brand evaluation, satisfaction and trust as predictors of brand loyalty: The mediator-moderator effect of brand relationships. Journal of Consumer Marketing, 32(6), 405-421.

Wang, Y.J., Minor, M.S., Wei, J. (2011), Aesthetics and the online shopping environment: Understanding consumer responses. Journal of Retailing, 87(1), 46-58.

Widiandita, B.K., Ketut, G.I.A. (2020), The effect of perceived brand leadership towards consumer satisfaction and repurchase intention on e-commerce website. Russian Journal of Agricultural and Socio-Economic Sciences, 97(1), 66-73.

Yang, H.L., Lai, C.Y. (2010), Motivations of wikipedia content contributors. Computers in Human Behavior, 26(6), 1377-1383.

Yu, E., Kim, J. (2020), The relationship between self-city brand connection, city brand experience, and city brand ambassadors. Sustainability, 12(3), 982.

Zhang, L., Chen, J., Su, X., Wu, F. (2023), Civil aviation customer satisfaction automatic evaluation system. International Conference on Electronic Information Engineering and Computer Science (EIECS 2022), 12 (602), 209-214.