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Original Article

Stimulus-Organism-Response: E-Commerce Interactivity, Satisfaction, Trust, and Loyalty Among Sporting Goods Consumers

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Abstract: *The worldwide digitization of the sports goods business has made the e-commerce platform in Indonesia a significant factor, considering that consumer preference is now influenced by online activity. This paper examines the impact of e-commerce interactivity on both e-satisfaction and e-trust, as well as the mediating roles that these two constructs play in forming attitudinal and behavioural dual e-loyalty towards Indonesian consumers of sporting goods and apparel. Following the S-O-R model, the study adopts a quantitative method and examines how online interactive features lead to loyalty outcomes. The results indicate that e-commerce interactivity positively impacts both e-satisfaction and e-trust, leading to attitudinal and behavioral e-loyalty formation. I. Some of the findings in regard to consumer motivations in Indonesia's sporting goods market are as follows, which reveal this duality and provide direction on how platforms should cater to both performance-driven as well as lifestyle-oriented customers "Report Highlights Both Sides of Motivations "By installing sports marketing" (2017, Indosport website). 3). The findings emphasize how interactive characteristics (active control, two-way communication, synchronicity) contribute to satisfying and trust-inducing resources for the customer, which subsequently lead to long-term commitment and advocacy. In theory, the scope of this study extends the S-O-R model by revealing some mediating variables in the digital environment, including satisfaction and trust. Theoretically, it offers practical applications for e-commerce practitioners wishing to build a believable and engaging system that meets the needs of different consumer groups. Finally, strategic implications for building long-term trust in this highly dynamic Indonesian e-commerce sporting goods environment are suggested.*

Keywords: *E-commerce, Interactivity, E-satisfaction, E-trust, E-loyalty, Attitudinal loyalty, Behavioral loyalty, Sporting goods, S-O-R theory.*

I. INTRODUCTION

The sports industry has developed its marketing model a lot, especially through the surge of digital and e-commerce. When traditional advertising methods involve ad posting, these companies that are involved in ad posting face new challenges, and it is the online advertisements. This transition to digital marketing is motivated by an increasing consumer demand for convenient online shopping and a focus on personalised marketing utilising data analytics and consumer insights to reach different industry segmentations (García-Fernández et al., 2020; Sánchez et al., 2020). This digital revolution is found to facilitate the interactions between consumers and brands in online environments, giving firms the opportunity to establish a solid long-term relationship with customers by employing advanced e-commerce strategies which drive sales but also favor-brand loyalty (Trail, 2024; Onete et al., 2023).

Value sporting goods have a significant potential, especially in Indonesia, as sports participation has increased considerably over the past few years. Local market exhibits a rising demand for fitness and sporting goods, indicating the growing interest in health and wellness products by Indonesian consumers (Rahayu et al., 2024; Nugraha et al., 2022). This curiosity is also evidenced by the growth of e-commerce online shopping websites, such as for sporting goods, and increasing consumer preference to online marketplaces rather than traditional urban areas (Onete et al., 2023). These dynamics make it necessary for the authors to understand the specific consumer traits in an Indonesian context, particularly as marketers' construction and reconstruction of a market that consists of heterogeneous consumer motivations, including performance-oriented thinking (who seek high-performance quality athletic goods) compared with lifestyle-oriented consumers seeking insight into different sporting goods styles and personal branding (Ferreira et al., 2021; Turkmani et al., 2022).

To respond to this special feature: interaction is important as it creates a sort of dynamic relationship between customer and online seller, thanks in turn to the reciprocal communication. Intertextuality and the New Media Journalism: An analysis of its potential in the construction of a news comprehension about Jornal Nacional. Moreover, interactivity options in e-commerce sites significantly affect consumers' decision-making process which has led to customized marketing strategies vis-à-vis the preferences factors of sporting goods consumers (Singh et al., 2016). Therefore, building interactivity not only complements current customer expectations but also builds the bond of businesses with their customers - a key consideration in the extremely competitive niche of sporting goods. The S-O-R (Stimulus-Organism-Response) model [75], which explains how stimuli(involved e-commerce interactions) affect consumer perception (organism), and affect behavior (response) of consumers in an integrated way, is the framework beneath this research model. From this perspective, marketers may gain a better understanding about the chain of events that leads to e-loyalty, which is crucial for practitioners within the growing online sports goods industry (Trail et al., 2023; Kunz & Santomier, 2019).

The ambivalence among consumer motivations represents both a challenge and an opportunity for marketers who aim to cluster their offerings according to these divergent consumer needs (Trail et al., 2023; Ordóñez et al., 2021). Whereas for certain individuals, product functionality and performance remain paramount, for others, the brand is a signifier providing symbolic value in terms of their lifestyles and identities (Ferreira et al., 2021; Valette-Florence et al., 2022). Because of this, the phenomenon is approached as a two-dimensional construct - attitudinal and behavioral e-loyalty. Developing loyalty as a multidimensional construct is crucial, since it can offer insights on how brands are able to facilitate commitment and repeat purchase in consumers with differing motivational spectra towards sporting goods (Hu et al., 2024; Fernandes et al., 2013). This relevance is also supported by evidence that customers who hold favourable attitudes and emotional responses are considered to be loyal. It is not always the case, however, that such feelings are transferred to a repeat purchase from the same online retailer (Javed et al. 2020).

Repurchase intention and e-loyalty are different dimensions, because willingness to purchase does not necessarily imply loyalty to the same site, as younger consumers may have no attachment to any specific site (Buhalis et al., 2020). In addition, important antecedents of e-loyalty are found to be the customer's experiences with product information and online service quality; this has demonstrated that a favorable online experience may have an impact on loyalty without necessarily encouraging repurchase intentions (Negash et al., 2021). Behaviours do not fully capture the loyalty continuum and have been posited to integrate with attitudinal ones in order to more effectively understand and predict loyalty (Mustaffa et al., 2020). Such an approach of e-loyalty as being two-dimensional has practical value to apply more tailored marketing strategies and CRM practices, which are highly needed within the competitive digital environment.

Finally, the findings of the current research highlight a paradigm shift in the sporting goods industry with reference to digital marketing and e-commerce, particularly in relation to the understanding of e-loyalty and consumer behavior. Through such articulation of relationships, the study aims to offer useful implications that may help industry participants adjust their strategies and more effectively respond to diversity in customer needs.

II. THEORETICAL BACKGROUND

A) *S-O-R Theory*

S-O-R provides a theoretical framework that assumes psychological and emotional responses (O) are activated by external stimuli (S) from the environment, leading consumers to engage in behavior (R) (Pereira et al., 2016). This model has been frequently applied to consumer behavior explanations in e-commerce consumers, as more studies reveal how online stimuli influence perceptions and loyalty (Cahyanti et al., 2022). The S-O-R theory may be able to explain those relationships among e-commerce interactivity, e-trust, e-satisfaction, and e-loyalty in the online business of sporting goods and apparel.

The independent variable in this model thus is interactivity, which is described as the desired stimulus in applying S-O-R theory to a variety of conditions (e.g. user engagement functionalities, responsive customer support team or personalized experiences to facilitate the online shopping journey). When prompted for interactivity, consumers' mood state becomes more positive, which will generate feelings of relatedness and, in turn, contribute to a flow experience, which represents a mental state of full-attention when the individual is immersed in their activity 10, This will thus facilitate their online shopping (Hur et al., 2011). Synchronized encouragement (stimuli) is an important strategy to build places of strong emotional bonding among consumers, influence perception on e-trust and e-satisfaction (Hendrawan & Agustini, 2021).

Mediating variables: Participants act as an organism from the S-O-R perspective, in which e-trust and e-satisfaction are the mediating variables. E-satisfaction reflects the emotional aspect of consumers in response to their shopping experience. The Interaction Effect of both constructs moderates the relationship between e-commerce interactivity and e-loyalty (Ahmad et al., 2017). E-trust forms once consumers face interactive e-commerce features that enable open insight and interaction, such as information about products, reviews from customers and feedback from support. Once e-trust is created, it has a direct effect on the overall satisfaction, which will enhance customer loyalty (Anderson & Swaminathan, 2011). Moreover, the association of these factors indicates the need for developing a secure and fun online shopping environment, especially in terms of sporting goods and apparel, where product quality and reliability are critical.

E-loyalty is the dependent variable, with two constructs: attitudinal loyalty and behavioral loyalty. Attitudinal loyalty describes a consumer's emotional connection and commitment to brands, whereas behavioural loyalty represents repeat purchasing behaviour and advocacy actions (Gotama & Indarwati, 2019; Burns & Weaver, 2011). ES-Ets The combined effects of e-satisfaction and e-trust lead to not only attitude loyalty but also behavior loyalty, which means that consumers who are satisfied and trustful show stronger purchase intention and brand commitment. The long-prevailing attitude-behavior consistency theories predict that an enjoyable e-service encounter, like e-satisfaction, promotes attitudinal loyalty, which ultimately leads to buying behaviors.

The S-O-R model provides some valuable directions to explain why e-commerce interactivity benefits e-trust and e-satisfaction, leading to e-loyalty. By understanding the human forces in action, sporting goods and apparel companies can build more compelling and authentic online experiences that drive better consumer retention and advocacy. In general, the application of the S-O-R model offers a systematic framework to investigate the relational dimensions in e-commerce, and it has significant relevance for researchers' theoretical development as well as practitioners's daily operation.

B) Interactivity

E-commerce interactivity is an essential element of online shopping activities, especially in the field of sporting goods and apparel. This combination involves three essentials: active controlling, mutual communicating and synchronicity(Hidayat & Anasis,2020). Active control allows users to play the role of navigators across an online shopping center and browse systems at their leisure, leading to a much more active interaction with e-commerce platforms. Parallel communication allows consumers to initiate real-time interactions with a company, ensuring that questions are answered and feedback is exchanged immediately. Lastly, synchronicity stands for live communication and live meetings, which enable the user a real-life shopping environment that will improve their online experience.

The value of e-commerce interactivity extends to the mediation role played by Click here to enter text.e-trust and Click here to enter text e-satisfaction across loyalty. E-trust is very important to the development of a good relationship between customers and e-commerce websites. Research has shown that extensive interactivity promotes the satisfaction of e-trust as customers are more confident about the trustworthiness and transparency in their interactions with a platform (Rita et al., 2019; Tam et al., 2019). In industries where the perception of quality and reliability is important, e.g., sporting goods, trust-building techniques that offer more interactive features are necessary (Nusifera et al., 2020).

The constructs of e-loyalty, attitudinal loyalty and behavioral loyalty, in turn, are influenced by the dual concepts of e-trust and e-satisfaction. Attitudinal loyalty represents the emotional bond between a consumer and a brand, whereas behavioural loyalty is expressed in physical behaviours such as repeat purchasing behaviour and recommendation (Holloway, 2024; Losaura et al., 2022). Loyalty dimensions are established through high interactivity between e-satisfaction and e-trust, as satisfied and trust consumers tend to be loyal to the brand (Ellitan & Suhartatik, 2023; Hidayati & Anasis, 2020) and also advocate for the brands for others (Johnson & Bagdare, 2011). Finally, promotion of interactivity in e-commerce is crucial to stimulating e-trust and e-satisfaction in the sporting goods and apparel industries. The three factors of active control, bidirectionality and synchronicity jointly enhance the consumer experience by increasing the level of trust and satisfaction, which in turn leads to materialize loyalty. The latter emphasises the significance of designing interactive e-commerce systems to promote customer retention.
H1: Interactivity positively affects E-Satisfaction
H2: Interactivity positively affects E-Trust

C) E-Satisfaction

E-commerce e-satisfaction is an indispensable factor which shows the are customer's satisfaction with his/her online purchase behaviors. It involves a number of different features associated with product quality, the level of service, the download time and ease of navigating through pages and other details that may influence emotional reaction on the part of the consumer towards shopping (García-Fernández et al., 2020). In industries such as sports goods and clothing, where authenticity of the product and performance expectations are vital, knowing how to better e-satisfaction is essential for customer retention (Sánchez et al., 2020).

E-satisfaction has a direct impact on e-trust, reflecting consumer trust in the reliability and honesty of e-commerce transactions provided by the e-commerce site. Happy customers are satisfied that their requirements will be fulfilled, and the brand will provide what it promised in terms of quality products and services. Studies show that an increased e-satisfaction leads to a higher level of trust, which poses the importance for e-commerce companies to project their UX over all channels (Trail, 2024; Onete et al., 2023). Besides, e-satisfaction is fundamental for both constructs of e-loyalty: attitudinal loyalty and behavioral loyalty. Attitudinal loyalty is a customer's attachment sentiment to the brand, and with regard to behavioural loyalty, it is the number of actual repeat purchasing/ discussions made by customers. High levels of e-satisfaction have been empirically proven to be associated with both types of loyalty in various research (Rahayu et al., 2024; Nugraha et al., 2022). Happy customers are more likely to return for future sales and develop brand loyalty, which sets them apart from competitors in the future, affecting the long-term success.

Of particular interest is the association between e-satisfaction and the S-O-R (Stimulus-Organism-Response) theory. Within this model, e-satisfaction can be considered as an organism's reflection of stimulation issued from the e-commerce setting; such is user interface quality, service performance and product alternatives (Ferreira et al., 2021; Turkmani et al., 2022). Favourable cognitive and affective answers are evoked as positive stimulation, which increases e-satisfaction. In return, such positive feelings of satisfaction promote e-trust and strengthen loyalty behaviors because of a greater level of confidence when making purchases. To conclude, e-satisfaction is a crucial variable in the online shopping environment and directly affects e-trust and e-loyalty in the sports goods and apparel industry. Brand managers need to make an effort to strengthen determinants of e-satisfaction for building trust and sustaining customer loyalty. By incorporating e-satisfaction within the S-O-R framework, firms are able to enlighten the routes through which user experience influences consumers' perceptions and actions.
H3a: E-Satisfaction positively affects Attitudinal Loyalty
H3b: E-Satisfaction positively affects Behavioral Loyalty

D) E-Trust

E-commerce e-trust is a measure of the consumers' belief in internet-based retailers to provide dependable, secure and precise trading. This trust consists of the perception of integrity, ability and benevolence of the e-commerce platform (García-Fernández et al., 2020). In areas like sports goods and apparel, where product genuineness and customer experience are the key motives of buying, creating e-trust is necessary for long-term customer retention and competitive edge (Sánchez et al., 2020).

The vital role of e-trust also lies in the fact that it is a determinant for not only attitudinal but behavioural loyalty under the umbrella of an e-loyalty framework. Attitudinal loyalty is an emotional bond between consumer and brand, whereas behavioral loyalty entails repeat purchasing and word of mouth advocacy (Trail, 2024). There is a rich body of literature highlighting that the increase in e-trust has resulted in increased customer loyalty, indicating that when customers perceive an online seller to be trustworthy, then they are more likely to engage in repeated purchases and provide word-of-mouth recommendations (Onete et al., 2023). Accordingly, such hypotheses could be proposed, being that e-trust leads to positive attitudinal loyalty (H1) and behavioral loyalty (H2) (Rahayu et al., 2024).

If viewed from the perspective of the S-O-R (Stimulus-Organism-Response) theory, e-trust is a significant factor determining how consumers cognitively perceive and respond to environmental stimuli appearing in e-commerce environments. In such a model, website quality, service reliability and security measures act as stimuli for the organism (i.e., internal state of consumers), and contribute to emotional and cognitive responses to produce certain specific behaviors - loyalty vs purchase decision-making (Nugraha et al., 2022). For example, a well-constructed, trusted and secure user-friendly website affects emotional reactions of users, leading to a higher level of online trust that has an impact on e-loyalty as well by influencing how consumers feel about it and what they will do in the following (Jarvenpaa et al.

In addition, studies have revealed that effective communication systems, transparent policies and real customer service are important factors to enhance e-trust (Ferreira et al., 2021). While moving through an online store that emphasizes and promotes these dimensions, consumers build trust in their purchase decision, experience less perceived risk, and engage loyalty behaviors. This relationship between e-trust and the S-O-R model highlights a focus for evolution, indicating that e-commerce organisations need to develop environments that facilitate trust in order to form long-term relationships with customers (Turkmani et al., 2022). Finally, e-trust is a key construct that not just affects consumers' trust perception but also triggers the right way for attitudinal and behavioural Internet loyalty. By placing the e-trust construct into the S-O-R framework, online store managers would be able to gain a better grasp of how consumer trust and loyalty are formed in terms of experiences that eventually contribute to an increased chance for business success under mounting market pressure within sporting goods/apparel virtual shopping.
H4a: E-Trust positively affects Attitudinal Loyalty
H4b: E-Trust positively affects Behavioral Loyalty

E) E-Loyalty

The e-commerce market has made substantial changes to consumers' shopping behavior versus the traditional retail marketplace, which brought forth a new concept: e-loyalty. E-loyalty is a result of the emotional and behavioral attachment which consumers feel towards online brands, and it represents an increasingly important topic for businesses' activities in digital markets (Nasti et al., 2024). The relevance of e-loyalty emerges even more strongly in the competitive sporting goods and apparel industry, given that customers have plenty of options, and switching between suppliers is easy. Firms that are able to develop e-loyalty could generate greater customer loyalty and earn more profit in the long run (Widayat et al., 2023; Al-Adwan Horani, 2019).

E-loyalty can be divided into two key components: attitudinal loyalty and behavioral loyalty. Cognitive loyalty consists of emotional attachment and psychological connection that consumers develop with a brand, which is a result of their experience in terms of quality, satisfaction, and trust (Pane et al., 2018). In contrast, behavioral loyalty is manifested through concrete behaviors like purchase frequency and customer reference (Azizi et al., 2020). In the context of a highly competitive sporting goods market, where product differentiation plays an essential role in influencing consumer choices, retail firms should be aware of both types of loyalty when working to develop long-term relationships with their customers (Ledikwe et al., 2019; Sukendia, 2021).

The link between attitudinal and behavioral loyalty may be explained by the Stimulus-Organism-Response (S-O-R) model, which argues that external stimuli inducing internal responses (customer satisfaction and trust) will ultimately direct behaviors to be observed (Indrawati et al., 2024). When this theory is used to a sporting goods e-commerce context, it then follows that positive customer experiences will lead to loyal customers on an attitudinal as well as behavioral level. By increasing consumers' emotional attachment to a brand through good digital marketing and high-quality service, firms can instil loyalty from their customers (Foysal et al., 2021; Norley et al., 2023). The hypothesis, "attitudinal loyalty positively leads to behavioral loyalty," means that a perceivably meaningful emotional connection of a consumer to a product will lead those consumers to purchase, and someone who advocates the brand would make customer loyalty stronger during the competitive environment in the era of e-commerce.

In summary, e-loyalty is an important construct in the sporting goods e-commerce context , affecting customer retention. Competence of firms to strategically comprehend and develop attitudinal and behavioral dimensions of e-loyalty is indicative for businesses that wish to sustainably maintain the competitive edge and growth in a most toughening market. The S-O-R theory can offer useful information to those brands that seek to go beyond the satisfaction barrier with which they use customers and e-loyalty as a tool designed to build customer relationships and therefore increase profits.
H5: Attitudinal Loyalty positively affects Behavioral Loyalty

III. METHODOLOGY

By using SEM, the study systematically tested the interactions of website quality, e-satisfaction and loyalty constructs to achieve as much variance explained in endogenous variables as possible. Interactivity Six items were employed to assess interactivity (adapted from Bao et al. (2016). Electronic satisfaction was assessed with four items using constructs from Miguens et al. (2017). E-Loyalty was defined by two constructs, Attitudinal Loyalty and Behavioral Loyalty, derived from Al-Dweeri et al. (2018).

After establishing the model specification, CFA was used to test the construct validity, and this procedure tested for convergent and discriminant validity, ensuring that a measure actually reflects what it purports to measure. Fit statistics, namely Goodness-of-Fit Index (GFI), Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA) were computed to check the goodness of fit. A good fit was accomplished as the criteria in the literature imply through this output, which enables an assessment of the model's validity and reliability (Hair et. al, 2018).

The study used a purposive sampling method based on the following inclusion criteria for participation in the research: respondents who made at least one purchase from the visited e-commerce site. Use of an online survey allowed for cost-effective data collection from a large geographical area. The data for this study were collected using a Google Forms online survey. Two hundred twenty-nine responses were received. A total of 196 questionnaires were finally included for analysis after data screening, for sample representativeness and appropriateness for the objectives of this study. To reduce the risk of potential biases and to improve the quality of responses, participation was voluntary and confidential. Respondents were also promised that their data would be kept confidential and for academic purposes only.

IV. DATA ANALYSIS

The demographic patterns of the sample show a unique profile that is mostly dominated by respondents from Central Java (64.86 percent), which suggests that there is a geographical clustering pattern. The men: women ratio in the cohort was 60.14%, with a majority (64.86%) being aged between 23 and 28 years, indicating a young adult population. Employment Private business employees (27.03%) and students (21.62%) accounted for almost half of the sample, reflecting the economic and educational profile of this subset. Income distribution is also skewed towards middle levels, where a plurality of 33.78% receive in the Rp 3–5 million bracket, followed by those receiving between Rp 1–3 million at 27.70%. Regarding the buying behavior, 53.38% were one-time buyers and 27.03% frequent buyers (more than two times). The concentration of data from Central Java and younger age groups is also likely to be related to sampling bias or regional economic activity; however, we observed a pattern of income and occupation that correlated with the increasing number of private sector venues in Indonesia and the type of student population. The results indicate required marketing strategies for these regions aimed at young urban professionals and students in Central Java, based on the People area, but with follow-up research to explore underrepresented areas and older age groups.

Table 1: Respondent Demographics and Purchasing Behavior Summary

	Quantity	Percentage
Province		
Central Java	96	65%
Jakarta (Capital Region)	16	11%
East Java	10	7%
Yogyakarta (Special Region)	10	7%
West Java	9	6%
Banten	6	4%
Other Area	12	8%
Gender		
Male	89	60.14%
Female	59	39.86%
Occupation		
Private Enterprise Employee	40	27%
Student	32	22%
SOE Employee	19	13%
Government Employee	11	7%
Entrepreneur	10	7%
Freelance/Freelancer	7	5%
Teacher	5	3%
FnB Employee	4	3%
Other	12	8%
Age		
17-22	45	30.41%
23-28	96	64.86%
29-34	4	2.70%
35-39	2	1.35%
>40	1	0.68%
Monthly Income		
>Rp 3.000.000,00 - Rp 5.000.000,00	50	33.78%
>Rp 1.000.000,00 - Rp 3.000.000,00	41	27.70%
>Rp 7.000.000,00 - Rp 9.000.000,00	23	15.54%
>Rp 5.000.000,00 - Rp 7.000.000,00	17	11.49%
>Rp 9.000.000,00	12	8.11%
< Rp 1.000.000,00	5	3.38%
Purchasing Frequency		
1 Times	79	53.38%
More Than 2 Times	40	27.03%
2 Times	29	19.59%

A) Structural Model

The chi-square(χ^2) value is 280.821 with 145 degrees of freedom and a p-value of .000. A significant p-value indicates that the model does not perfectly reproduce the observed covariance matrix. However, Hair et al. (2019) note that the chi-square test is sensitive to sample size and should not be the sole basis for rejection. CMIN/DF: The ratio of chi-square to degrees of freedom is 1.937. Values between 1 and 3 (and sometimes up to 5) are generally considered acceptable, suggesting a reasonable fit. The RMSEA is .069 with a 90% confidence interval of .057 to .081. According to Hair et al. (2019), an RMSEA of .06 or less indicates a good fit, and values up to .08 represent a reasonable fit. In this case, the RMSEA suggests an acceptable fit. GFI (Goodness-of-Fit Index) and AGFI (Adjusted Goodness-of-Fit Index): The GFI is .868, and the AGFI is .827. Hair et al. (2019) suggested that GFI is sensitive to sample size. These values are below the common cutoff of .90, indicating a marginal fit. CFI (Comparative Fit Index) and TLI (Tucker-Lewis Index): The CFI is .927, and the TLI is .913. Values above .90 are generally considered indicative of good fit, suggesting acceptable model fit per Hair et al. (2019). NFI (Normed Fit Index): The NFI is .861. A value above .90 is generally desired, suggesting a less-than-ideal fit. Based on Hair et al. (2019), the model demonstrates a mixed fit. The CFI and TLI suggest a good fit, while the GFI, AGFI, and NFI indicate a marginal fit. The RMSEA is within the acceptable range. Given the sensitivity of the chi-square to sample size, it shouldn't be the primary concern. Researchers often consider a combination of these indices to make a holistic judgment on model fit.

Table 2: Model Fit Summary for Structural Equation Modeling (SEM)

Chi-Square	280.821
Probability	.000
DF	145
GFI	.868
AGFI	.827
TLI	.913
CFI	.927
NFI	.861
RMSEA	.069
CMIN/DF	1.937

B) Composite Reliability and Validity

Table 3: Confirmatory Factor Analysis Results: Factor Loadings, AVE, and CR

Variable	Item	Estimate	AVE	CR
Interactivity	INT1	0.566	0.545	0.875
	INT2	0.628		
	INT3	0.725		
	INT4	0.82		
	INT5	0.794		
	INT6	0.854		
E-Satisfaction	EST1	0.738	0.550	0.830
	EST2	0.743		
	EST3	0.728		
	EST4	0.759		
E-Trust	ETR1	0.717	0.521	0.765
	ETR2	0.726		
	ETR3	0.724		
Attitudinal Loyalty	ATL1	0.739	0.573	0.801
	ATL2	0.763		
	ATL3	0.769		
Behavioral Loyalty	BHL1	0.755	0.585	0.809
	BHL2	0.739		
	BHL3	0.801		

Composite Reliability (CR) was used to assess the internal consistency of the indicators for each construct. Hair et al. (2019) recommended a CR of 0.70 or above for good reliability. This condition is achieved for most constructs (Interactivity, ESatisfaction and Behavioral Loyalty). E-Trust is just one step down at .765. AVE is the proportion of variance due to the indicators of a latent construct. Hair et al. (2019) suggested an AVE of. 50 to support convergent validity. All constructs have AVEs higher than 0.5. The model comprises a full measurement model evaluation, where composite reliability (CR) is reported by construct. According to Hair et al. (2019), a CR value higher than 0.70 shows good internal consistency reliability; this test result indicates that all the constructs are well or better than that value. In addition, the standardized regression weights (factor loadings) for each indicator are reported. Hair et al. (2019) suggest that loadings > 0.60 are satisfactory , so these items are a good indicator of their construct. The indices demonstrate that all measures satisfy this requirement, and hence, the convergent validity of the measurement model is established.

C) Path Analysis

Table 4: Structural Model Path Coefficients and Significance Levels

			Estimate	S.E.	C.R.	P	Label
ESatisfaction	<---	Interactivity	.625	.108	5.770	***	par_1
ETrust	<---	Interactivity	.654	.117	5.572	***	par_2
AttitudinalLoyalty	<---	ETrust	.680	.138	4.918	***	par_3
AttitudinalLoyalty	<---	ESatisfaction	.418	.137	3.056	.002	par_6
BehavioralLoyalty	<---	ESatisfaction	.421	.121	3.489	***	par_4
BehavioralLoyalty	<---	AttitudinalLoyalty	.603	.118	5.111	***	par_5
BehavioralLoyalty	<---	ETrust	.451	.138	3.274	.001	par_7

The regression weights, or path coefficients, reveal the direction and strength of the relationships between the constructs. The regression weights indicate the strength and direction of the relationships between the constructs. Interactivity → ESatisfaction (.625, p < .001) and Interactivity → ETrust (.654, p < .001): Interactivity has a strong positive influence on both ESatisfaction and ETrust. The standardized coefficients (.611 and .599, respectively) also confirm this. ESatisfaction → AttitudinalLoyalty (.418, p = .002) and ETrust → AttitudinalLoyalty (.680, p < .001): Both ESatisfaction and ETrust significantly predict AttitudinalLoyalty, with ETrust having a stronger effect. ESatisfaction → BehavioralLoyalty (.421, p < .001), ETrust → BehavioralLoyalty (.451, p < .001), and AttitudinalLoyalty → BehavioralLoyalty (.603, p < .001): All three constructs significantly influence BehavioralLoyalty, with AttitudinalLoyalty showing the strongest relationship. The standardized indirect effects show the effect of one variable on another through a mediating variable. Interactivity has a substantial indirect effect on AttitudinalLoyalty (.486) through ESatisfaction and ETrust. The indirect effect of Interactivity on BehavioralLoyalty is .598, indicating that interactivity influences BehavioralLoyalty through ETrust, ESatisfaction, and AttitudinalLoyalty.

V. DISCUSSION

The results of the present study contribute to understanding the importance of e-commerce interactivity in forming sports goods consumer perceptions and behaviours in Indonesia. Consistent with the S-O-R framework, this study provides evidence that interactive stimuli (i.e., active control, two-way communication, and synchronicity) are strong antecedents of e-satisfaction and e-trust. These are in turn, responsible for attitudinal and behavioral loyalty. The weight of a game is higher for interaction (game weight =.290, β =. † The weak negative relationships between the control variables and mediating are fullmodel relations (at p <.60). 625, p <. 001; e-trust: β =. 654, p <. 001), which verify earlier investigations highlighting interactivity as the basis for immersive digital experiences (Hidayat & Anasis, 2020; Rita et al., 2019). Of particular interest was that e-trust was found to be a more powerful predictor of attitudinal loyalty (β =. 680, p <. 001) than to e-satisfaction (β =. 418, p =. 002), indicating that trustworthiness becomes the dominant factor to cultivate emotional brand attachment in markets where product reliability is critical (Sánchez et al., 2020).

Both dimensions of e-loyalty, attitudinal and behavioral, were positively affected by e-satisfaction and e-trust. Attitudinal loyalty, or emotional commitment, was an intermediary mechanism between satisfaction and actual repeated purchase behaviour with its strong direct impact on behavioural loyalty (β =. 603, p <. 001). This is in line with the argument of the S-O-R theory that internal (organism) states mediate to translate external stimuli (interactivity) into behavioral responses (loyalty behaviors) (Trail et al., 2023). It also contributes to prior literature by addressing the compounded mediated effects of interactivity on loyalty via e-satisfaction and e-trust, which calls for a comprehensive online platform design related to usability, transparency and responsiveness.

A) Research Implications

This study contributes to the use of S-O-R explanation in an e-commerce setting by using empirical evidence to confirm separate routes from interactivity to loyalty. Using the Stimulus-Organism-Response (S-O-R) theoretical model, this work sought to examine the interrelationships between e-commerce interactivity and both e-satisfaction and e-trust with attitudinal and behavioral dimensions of loyalty in Indonesia's sporting goods and apparel market. The results highlight the importance of e-commerce interactivity to model consumers' e-satisfaction and e-trust. Interactive elements, including active control, two-way communication and synchronicity enable not only the intuitive online shopping experience but also transparency and dependability needed to trust in digital exchanges.

An e-satisfaction mediator was crucial because it directly affected e-trust and the two types of e-loyalty. Satisfied customers tend to view e-commerce platforms as reliable, and are thus more willing to establish both attitudinal loyalty (emotional attachment) and behavioral loyalty (repurchase intention). The findings are consistent with previous research, indicating that a positive online experience stimulates loyalty by enhancing both the cognitive and affective bonds with the brand.

E-trust also had a strong direct influence on loyalty results. Trust is a key factor in retaining customers in a market characterized by mistrust of product credibility and transaction human security. The relationship featuring e-satisfaction and e-trust indicates a virtuous circle: as consumers are more satisfied, their trust is built up, subsequently developing loyalty.

B) Implication

In addition, it enriches e-loyalty literature by decoding its attitudinal and behavioral dimensions and provides an insight into explaining how emotional attachment manifests itself as repeat purchases. Implications for practitioners of the sporting goods industry, the findings support investment strategies in e-commerce interactive features. The addition of real-time communication, individual user interfaces, and visible transaction procedures may increase e-trust and satisfaction. With the sample being biased toward a younger demographic and urban professionals in Central Java, brands also need to develop marketing strategies targeted at these groups while finding ways to attract underrepresented areas as well as older generations. Policy makers and industry regulators could capitalise on these findings to proactively establish some e-commerce platform integrity standards that will support consumer protection conducive to trust as a pivotal loyalty loop for Indonesia's digital economy. Despite the informative findings, several academic limitations are present, such as the regional scope of Central Java, overrepresentation of younger consumers (64.86% were at age 23-28), which creates a possible deficiency in generalization. Further studies should broaden the sampling frame to encompass a wider geographic and age spread. Longitudinal research may also delve into changing trends of the digital age, like AI-based personalization.

VI. CONCLUSION

This research reveals that e-commerce interactivity has positively influenced e-satisfaction and e-trust, which subsequently affects both attitudinal and behavioral e-loyalty among Indonesian sporting goods consumers. These results support the robustness of the S-O-R framework in explaining how digital stimulus impacts consumer loyalty in e-commerce. Once brands understand the importance of satisfaction and trust, they will be able to develop better digital strategies that address the varying consumer motivations and ultimately build long-term loyalty. The study ultimately provides useful knowledge for scholars and practitioners who are looking to make sense of the dynamic digital surroundings in the sporting goods industry within Indonesia.

This study clarifies the rubric of digital interactivity on customer loyalty in the Indonesian sporting goods e-commerce industry. With the S-O-R model as the theoretical basis, this study explores how interactive online experience in the use of electronic shopping impacts consumer E-satisfaction and E-trust that are associated with attitude loyalty and behavioral loyalty. The results highlight the importance of affective-based attitudinal loyalty in promoting repeat purchase, suggesting that customers with emotionally-based attitudinal loyalty are very valuable for brands, even if transactional purchases prevail. For businesses, the key to winning in Indonesia's increasingly competitive digital economy is focusing on interactive platform design, transparency and having local demographics-specific strategies, experts believe. Finally, the present study fills the theoretical and pragmatic voids by providing tactical suggestions to promote continued consumer loyalty in an environment of rapid digital evolution.

VII. REFERENCES

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