Advance Journal of Econometrics and Finance
Vol-3, Issue-1, 2025

Advance Journal of Econometrics and Finance

Online ISSN
2959-8990
Print ISSN
2959-8982
https://ajeaf.com/index.php/Journal/About

Name of Publisher: SCHOLAR CRAFT EDUCATION & RESEARCH HUB

Review Type: Double Blind Peer Review

Journal Frequency: Quarterly Research Journal

The Impact of Achievement Related Features as Game Design Elements on Customer Purchase Intentions: Mediation of Consumer Motivation

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Abstract

The use of gamification is at its peak across various business sectors as companies look for innovative ways to engage and entertain customers online. This study examines the impact of achievement-related game design elements on customers' purchase intentions within e-commerce platforms. Guided by the Stimulus-Organism-Response (S-O-R) framework, the research focuses on the mediating role of consumer motivation in this relationship. Using quantitative survey data collected from 210 valid respondents, the analysis reveals a significant positive effect of achievement-related gamification features on customers' purchase intentions. These findings enhance our understanding of how integrating specific game design elements in online shopping apps and platforms can influence consumer behavior. Furthermore, the results offer marketers and researchers clearer insights into designing digital shopping experiences that leverage achievement-based gamification to increase customer interest and drive actual purchases. This research provides practical guidance for e-commerce businesses aiming to apply targeted gamification strategies to boost consumer motivation and purchase intentions, ultimately supporting sustained engagement and sales growth.

Keywords:

Advance Journal of Econometrics and Finance
Vol-3, Issue-1, 2025

Introduction

Gamification is the use of game design elements for non-gaming purposes such as online shopping services, to enhance overall value creation and realization (Huotari & Hamari, 2017). To differentiate themselves, many businesses incorporate gamification, game-inspired features added to websites or apps that are not actual games (F. Xu et al., 2017). Examples of these features include spinning wheels for discounts, earning points for referrals, participating in team deals, or playing mini-games to gain rewards (Huotari & Hamari, 2017).

For instance, TEMU, a rapidly expanding online shopping platform, employs gamification to increase customer excitement and connection with the site. Features such as spin-the-wheel discounts, referral rewards, and interactive challenges make shopping more game-like and encourage repeated visits (Kusumawardani et al., 2023) These game mechanics leverage innate psychological effects. Progress bars create a sense of progress motivating continued engagement, known as the "endowed progress effect" (Zhang & Huang, 2010). Limited time offers and discounts causes urgency and fear that the deal might run out. This induces a feeling like FOMO (fear of missing out), thus customers are more likely to take quick action and make a purchase. (Hwang, 2024). Some researches show that these elements increase level of enjoyment and involvement thus inducing a state of excitement and prolonged engagement that enhances user's motivation to interact with a specific platform (Hsu & Chen, 2018). The boost in motivation level leads to increased buying frequency because emotionally attached customers are more likely toper form repeated purchases.

Despite widespread adoption of gamification, there remains limited understanding of which specific game features truly drive purchasing behavior, and how internal feelings like motivation and enjoyment explain this influence (Xi & Hamari, 2019) This study applies the Stimulus-Organism-Response (S-O-R) model to explore how game features (stimulus) affect internal user states (organism) such as motivation and engagement, leading to behaviors like making purchases (response) (Bakker et al., 2014). This framework helps elucidate how gamification shapes shopping behavior and offers useful insights for e-commerce platforms and researchers.

Even though many online shopping sites add game-like elements such as spinning wheels, points collection, or group deals, it remains unclear which of these actually persuade consumers to buy. Most studies discuss gamification generally without detailing which features such as, rewards, challenges, leaderboards, are most effective at encouraging real purchases ((Elmashhara et al., 2024); (Costa et al., n.d.)

Furthermore, the psychological processes underlying this influence remain poorly understood. While game elements clearly increase enjoyment and involvement, there is limited evidence about whether this leads consumers to spend more money or simply spend more time on the site. Although the S-O-R model is often used to explain how external factors influence feelings and actions, few studies apply it to examine how gamification specifically changes purchasing behavior on e-commerce platforms (Elmashhara et al., 2024). Thus, a critical gap remains in understanding how game mechanics affect consumers' emotions and how those feelings translate into purchases.

Despite the growing use of gamification in e-commerce, empirical evidence is lacking to clearly identify which elements e.g achievement related features such as points, badges etc most effectively influence purchase intentions. Additionally, the mediating roles of consumer motivation connecting these elements to purchase decisions are not fully understood. Specifically, it is unclear whether platforms like TEMU effectively harness gamification to directly drive purchases or mainly boost user engagement without converting it into sales. This study addresses these gaps by investigating both the direct and indirect impacts of various gamification elements on purchase intention, aiming to provide practical guidance for e-commerce businesses to optimize their gamified marketing strategies and link game mechanics with meaningful consumer behavior outcomes.

Understanding how gamification operates in online shopping is vital for both businesses and scholars. Many e-commerce companies invest considerable resources in implementing game-like features such as rewards, points, and challenges but without solid evidence on which features actually promote buying, investments may not deliver expected results (Hamari et al., 2014). Identifying the specific gamification approaches that influence customer behavior is therefore crucial.

Equally important is understanding why these features work. Gamification can enhance fun and motivation in shopping, but it is necessary to grasp the underlying psychology, what motivates customers to feel engaged enough to complete purchases after interacting with these elements? (Ryan & Deci, 2000). This knowledge enables businesses to design more effective and satisfying shopping experiences (Sailer et al., 2017a)

Applying the Stimulus-Organism-Response (S-O-R) model creates a link between game features (stimulus), internal customer states such as motivation and excitement (organism), and actions like making purchases (response) (Pandey & Ansari, 2024) This connection moves research from theoretical understanding toward practical applications that marketers and platform designers can employ to create shopping environments that capture attention and translate it into sales. Finally, this research not only benefits businesses but also broadens academic knowledge by detailing how gamification interacts with consumer motivation and purchasing behavior. Its findings can guide further studies across diverse digital commerce domains.

This study therefore seeks to determine achievement related features, as the game design elements that most effectively persuade online buyers, clarify the roles of motivation in this process, and explain how this psychological state lead to actual purchases. These findings can help e-commerce platforms create better user experiences and support researchers in understanding the consumer behavior in digital settings. Specifically, the study aims to examine the impact of achievement-related game design elements on consumer purchase intention, analyze the mediating roles of consumer motivation between achievement-related elements (AREs) and customer purchase intentions, and evaluate the effectiveness of Daraz and TEMU's gamification strategies in driving purchase decisions. To guide this inquiry, the following research questions are posed:

How do achievement-related game design elements influence consumer purchase intention?

Does consumer motivation mediate the relationship between achievement-related elements and purchase intention?

How effective are Daraz and TEMU's gamification strategies in converting potential users into loyal customers?

1. LITERATURE REVIEW

Game design elements have a considerable influence on consumer decisions. E-commerce platforms use these elements to create game-like experiences that drive engagement. Such gamification is increasingly integrated into e-commerce platforms e.g., Daraz and Temu, (J. Xu et al., 2022), to encourage consumer engagement beyond transactions. The use of game-like elements has been widely applied across various disciplines, such as marketing(Santos et al., 2024). The application of game-like elements has become an area of interest for research and has enjoyed widespread prominence since around (Hamari & Koivisto, 2014) (Koivisto & Hamari, 2019a), (Nacke & Deterding, 2017) and (Seaborn & Fels, 2015).

Achievement and Its Influence on Motivation

According to (Xi & Hamari, 2019) Achievement Related game design elements is one of the most impactful categories of game design elements on satisfaction of user needs leading to user participation in online communities. Achievement-related elements fuel that unmistakable "I win!" feeling—the thrill of progress, recognition, and reward. On

TEMU, this is brought to life through cleverly designed mechanics like progress bars "Complete 3 tasks to unlock free shipping" and achievement badges ("Super Saver" for reaching savings milestones). These elements aren't just visual cues, they're deeply rooted in psychology. Cognitive Evaluation Theory (CET) explains that when external rewards, like discounts, make users feel competent, they enhance intrinsic motivation rather than undermine it (Deci et al., 1985). Whereas research conducted by (Bowen et al., 2020), shows that high rewarded items also help in encouraging users to take an action and recognize brands.

This theory plays out powerfully on TEMU. A study by (Hamari et al., 2014) found that users who earned badges spent 28% more than those who didn't, showing how recognition can directly drive spending. TEMU pushes this further with a tiered reward system: the more users buy, the better the deals they unlock. It's a cycle of accomplishment and incentive. And it works. According to surveys, 35% of users participating in this gamified structure made repeat purchases, compared to only 18% on non-gamified platforms.

What's remarkable is how this achievement mechanics transform ordinary shopping tasks, like filling a cart or checking out, into something more meaningful: quests. Structured goals keep users hooked, encouraging them to come back for that next win. This mirrors findings by (Zhou et al., 2023), who found that achievement-driven motives are a key factor in prolonged game involvement. Similarly, in e-commerce or consumer behavior, it can drive continued interaction with gamified platforms and enhance purchase intentions. Both contexts show that the desire to achieve goals, receive recognition, or reach milestones strongly influences customer behavior.

Consumer Motivation as a Mediator

Motivation can be internal (like enjoying the experience) or external (like earning rewards). (Kusumawardani et al., 2023) explained that both types of motivation are activated by gamification. Individuals are internally motivated to obtain stimulation at a specific expectation level (with the optimal stimulation level representing the amount of stimulation people prefer in life. (Richard & Chebat, 2016). Various studies like (Zhou et al., 2023) showed that customer motivation act as a mediator between achievement-related game design elements (the IV) and (customer behavior the DV) by explaining the psychological phenomena through which these game design elements influence consumer actions, such as purchase intentions.

The majority of studies and reviews of empirical studies on gamification indicate that in most cases, gamification has had a positive effect on motivations and behaviors (Hamari et al., 2014; Koivisto & Hamari, 2019b; Sailer et al., 2017b; Su & Cheng, 2015). However, more granular research on how different gamification features affect certain motivations has been slow to emerge (Hamari et al., 2014; Koivisto & Hamari, 2019a; Seaborn & Fels, 2015) Gamified systems include many design features that influence users. Specifically, medals and levels have been shown to provide affective feedback, thus encouraging continued usage (Hassan & Hamari, 2020) Points and levels can serve as feedback related to both competition and cooperation among users (Toda et al., 2019). The use of points, badges, and trophies likely forms flow experience and increases player engagement (Whittaker et al., 2021) This research stream has focused on gamified systems, while our research focuses on game design elements. Moreover, within this research stream, the existence (Whittaker et al., 2021), importance (Hassan & Hamari, 2020) and usefulness (Adnan et al., 2022) of gamified design elements have been examined. Gamification can thus play a potentially effective role here by impacting the user's motivation (Pandey & Ansari, 2024).

1 THEORETICAL FRAMEWORK AND CONCEPTUAL MODEL

This research builds important theoretical foundations to explain how gamification embedded in achievement related features such as rewards, bonuses etc influence consumer behavior and purchase decisions within e-commerce platforms. A central framework applied is the Stimulus-Organism-Response (S-O-R) model, which examines how external stimuli in this case, Achievement Related Elements (ARE) such as reward points, progress bars, or time-limited offers, affect consumers' internal emotional and cognitive states, ultimately shaping their behavioral responses like making a purchase (Suratmanto et al., 2025). Gamification introduces these stimuli, generating feelings of excitement, urgency, and engagement that are crucial for driving purchase intentions and subsequent buying actions (Soliman & Sharaf, n.d.)

Moreover, recent studies highlight that trust and reputation are essential factors interacting with gamification to encourage repeated purchases. For example, (Aparicio et al., 2021) found that gamification combined with strong vendor reputation enhances consumer trust, which in turn increases loyalty and repurchase intentions. This suggests that gamification does not operate in isolation but works alongside perceived reliability and user-friendly platform design to build consumer confidence and sustained engagement. (Hewei & Youngsook, 2022) also found that the model provides a strong conceptual basis and ties cognitive and emotional mediator such as motivation to behavioral outcomes clearly as purchasing behavior.

Guided by these theoretical foundations, the current study explores how specific game design elements affect motivation, and purchase behavior on e-commerce platforms such as TEMU, aiming to provide deeper insight into the mechanisms linking gamification to actual consumer purchases.

2. RESEARCH FRAMWORK AND HYPOTHESIS

In the research framework achievement related game design elements are focused out of other game design elements such as immersion related game design elements and social related game design elements.

The proposed framework examines how achievement related gamification elements affect customer engagement and consumer motivation, which in turn influence customer purchase intentions. It integrates that Achievement related Game Design Elements act as stimuli which derive internal willingness and motivates the potential customers which plays a role of mediator. This internal encouragement leads them to take a purchase decision.

The SOR model helps explain how external factors (stimuli) influence people's inner experiences (organism), which then shape their behaviors (response). In this study, the external factors are the gamified features (like achieving rewards, discounts etc), the inner experiences are things like customer motivation, and the behavior we're interested in is the intention to make a purchase.

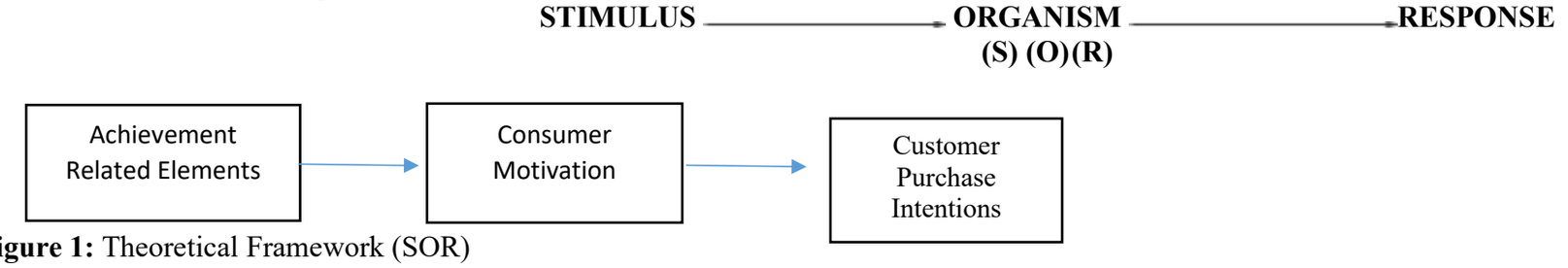

Figure 1: Theoretical Framework (SOR)

Within this model, stimulus refers to the gamified design element (e.g., achievement features). Organism involves internal state like consumer motivation and response is the consumer behavior namely, customer purchase intention. Gamification acts as a stimulus that influences internal psychological processes, which in turn determine user behavior. For instance, achievements related features tap into users' intrinsic and extrinsic motivations.

Several researchers have used this model to look at e-commerce and gamification. For example, (Gatautis et al., 2016) found that features such as rewards, challenges, and progress tracking can trigger emotional and mental responses in users. These responses make people more engaged and more likely to buy something. On the other hand (Pandey & Ansari, 2024) found a strong relationship between ARE and consumption behaviour of users, while mediating the role of consumer motivation. It also showed that mediating role of consumer motivation creates ease in measuring customer purchase intentions.

Hypothesis Development

Based on literature and conceptual model, the following hypotheses are proposed:

H1: Achievement-related game design elements positively influence consumer motivation.

H2: Consumer motivation positively influences customer purchase intention.

H3: Consumer motivation mediates the relationship between achievement related game design elements and customer purchase intention.

3. Research Design and Methodology

Many studies in past have used experimentation to explore the impact of Game design elements in various contexts (e.g., Hwang & Choi, 2020; Passalacqua et al., 2021; Wang et al., 2020). Game design elements have a considerable influence on consumer decisions. This research includes any person who uses online shopping platforms such as TEMU, Daraz, or other e-commerce sites. These users represent diverse groups across different countries, age ranges, and shopping behaviors, making them ideal subjects to study how gamification influences purchasing decisions.

By focusing on individuals who actively use these platforms, this research captured real consumer responses to specific gamified features, such as referral rewards, progress bars, and discount games. This broad unit of analysis helps ensure the study's findings reflect how diverse shoppers engage with gamification, their motivation levels, and ultimately, their buying behavior.

5.1 Instrument Development:

For this study, data was collected using a carefully designed structured questionnaire to ensure it was easy and engaging for users of e-commerce platforms like TEMU and Daraz. The questionnaire was divided into three clear sections to guide respondents smoothly through the process.

The first Section was Demographics portion, included simple multiple-choice questions that asked about basic information such as age, gender, income, and how often they shop online. This helped us understand the background of the participants.

The second section focused on Respondents' Shopping Habits and Brand Related Information, where questions explored their favorite brands, how much they typically spend, and their overall shopping patterns. This provided insights into consumer preferences and behavior.

The final section was the Measuring our Key Variables, where participants rated various statements related to their experience of gamified features using a 5-point Likert scale from strong disagreement to strong agreement. This section measured the key variables of the study, such as motivation, engagement, and purchase intention, in a straightforward way. Dividing the questionnaire like this made it user-friendly and helped gather reliable and meaningful data.

1.Achievement-Related Elements:

This construct was measured using 5 items (e.g., rewards, progress bars, badges) assessing users' motivation through achievement-based gamification features. The scale draws from Self-Determination Theory (Ryan & Deci, 2000), emphasizing competence and reward-driven behavior. Specific items were adapted from Hamari et al. (2014) to align with e-commerce contexts from the most authentic research paper published by (Pandey & Ansari, 2024).

2.Consumer Motivation:

A 5-item scale was designed to distinguish intrinsic (enjoyment) and extrinsic (rewards) motivation, a research performed by (Ryan & Deci, 2000). Items were sourced from Hamari et al. (2014) and Ryan & Deci (2000). This scale help us understand

3.Customer Purchase Intention:

Measured via 5 items (e.g., likelihood to buy), rooted in the research performed by Ajzen, 1991). Items were developed and validated by Hollebeek et al. (2014) and Xi & Hamari (2019). which predicts that a person's intention to perform a behavior—like making a purchase—is influenced by their attitudes, social pressure, and perceived control. In this study, purchase intention is the key outcome variable showing whether gamified features effectively convert user engagement into actual buying decisions (Hollebeek et al., 2014).

Each of these variables was measured by using five items in the questionnaire to reliably capture respondents' feelings, motivations, and behaviors. Together, they provide a comprehensive view of how gamification works from motivating users and creating enjoyable experiences to fostering emotional bonds and encouraging purchases

5.2 Survey Administration and Sample:

For this research, we gathered information by using an online questionnaire, which was shared with people who use e-commerce platforms like TEMU, Daraz, or others. The questionnaire was created with Google Forms, a simple and convenient tool that allowed respondents to answer questions from any location using their computers or smartphones. This approach made it easier to reach a wide variety of users quickly and safely.

A total of about 210 respondents participated in the survey. They voluntarily shared their experiences and opinions on how different game-like features on shopping websites influence their motivation, engagement, and purchasing decisions. The questions were designed in easy-to-understand language to encourage honest and thoughtful answers. Using an online questionnaire also helped ensure privacy and comfort for all participants, which tends to improve the quality of the data collected. This method was chosen because it fits well with the digital nature of the study since gamification happens online, it makes sense to collect feedback in an online environment too. It also allowed us to gather diverse responses from users across different age groups, regions, and shopping habits, which strengthens the overall findings and relevance of the study.

The population for this study comprises of individuals who use e-commerce platforms such as Temu and Daraz and are active users of social media platforms (e.g., Facebook, Instagram, TikTok) for making online purchases. These individuals represent the general consumer base of online shopping platforms in Pakistan. A non-probability convenience sampling technique was used to collect data for this research. The sample consists of 210 respondents who were selected based on their availability and willingness to respond. The inclusion criteria were that participants must have previously used Temu or Daraz and/or engaged with these platforms through social media channels.

6. Results:

We have used advanced statistical methods for data analysis which includes SPSS (Statistical Package for the Social Sciences) and Smart PLS analysis for structural equation modelling.

SPSS (Statistical Package for the Social Sciences):

Descriptive and inferential analyses were performed to summarize and explore the data. These analyses included calculating measures of central tendency such as the mean, mode, and median, which helped understand the average and most common responses from participants. Additionally, correlation analysis was used to examine the relationships between different variables, showing how one factor might be associated with another. For deeper insights into predictive relationships, regression analysis was conducted to identify the strength and direction of influences among variables. SPSS offers a user-friendly interface that handles both basic and advanced statistical procedures efficiently, making it ideal for managing data and running detailed statistical tests (Field, 2023; Pallant, 2024; RSIS International, 2024).

SmartPLS:

Smart PLS was used for more complex modeling involving latent variables and relationships that are not directly measurable. SmartPLS specializes in Partial Least Squares Structural Equation Modeling (PLS-SEM), which is particularly powerful for exploratory research and theory development, especially when the data may not meet the strict assumptions required by traditional covariance-based SEM tools (Hair, Henseler, Hubona, & Sarstedt, 2024; Ringle, Wende, & Becker, 2015). Using SmartPLS, the study conducted validity and reliability analyses to ensure that the measurement instruments accurately and consistently captured the intended constructs. Furthermore, Structural Equation Modeling (SEM) was applied to test the hypothesized relationships between variables simultaneously, allowing the researcher to assess both direct and indirect effects within a comprehensive framework (Henseler, Ringle, & Sinkovics, 2009).

Combining SPSS and SmartPLS allowed for a thorough examination of the data; SPSS provided robust descriptive statistics and preliminary analysis, while SmartPLS enabled sophisticated modeling of complex constructs and relationships. This dual approach strengthened the reliability and interpretability of the study's findings by leveraging the complementary strengths of both software packages (Hair et al., 2024; RSIS International, 2024).

Reliability and Validity Analysis:

Reliability analysis was conducted to assess the internal consistency of the measurement scales used in this study. Cronbach's Alpha was employed as the statistical indicator to evaluate reliability, where a value of 0.70 or above is considered acceptable for social science research (Nunnally & Bernstein, 1994).

Each construct in the questionnaire, achievement elements, customer motivation, and purchase intention—was measured using scales adapted from validated prior research (e.g., Ryan & Deci, 2000; Hamari et al., 2014; Xi & Hamari, 2019). The reliability coefficients (Cronbach's Alpha) for all constructs were found to be above the acceptable threshold, indicating a high level of internal consistency.

Table 01: Measurement Model Assessment (Construct Reliability and Validity)

Variables	Code	No of Items	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Achievement Related Elements	ARE	05	**0.851**	0.855	0.893	0.626
Consumer Motivation	CM	05	**0.82**	0.822	0.881	0.649
Customer purchase Intention	CPI	05	**0.769**	0.77	0.853	0.591

This confirms that the instrument used in this study is reliable and suitable for further analysis, such as regression and structural equation modeling (SEM). High reliability ensures that the results derived from the scales are consistent and replicable, adding credibility to the findings.

Discriminant/Divergent validity Analysis via FORNEL LARCKER Matrix:

The Fornell-Larcker matrix is a tool used to test discriminant validity in structural equation models (SEM). This test ensures that each construct in the model is measuring something unique and is distinct from other constructs. 1) The values on the diagonal (ARE = 0.791, CM = 0.805, CPI = 0.769,) represent the square roots of the Average

Variance Extracted (AVE) for each construct. 2) The other values are the correlations between the different constructs. 3) Discriminant validity is confirmed when each diagonal value is greater than all the other correlation values in its row and column, showing that a construct shares more variance with its own measures than with other constructs.

Table 02 : Measurement Model Assessment (FORNEL LARCKER Matrix)

	ARE	CM	CPI
ARE	0.791		
CM	0.737	0.805	
CPI	0.717	0.759	0.769

For each construct (ARE, CM, CPI), the diagonal value is greater than the correlation with every other construct. For example, ARE's diagonal AVE square root (0.791) is greater than its correlations with CM (0.737), CPI (0.717). This pattern holds for all constructs, indicating strong discriminant validity in the model. This means that each construct is distinct and reliably measured, which is important for valid research conclusions based on SEM. For all constructs, discriminant validity holds. Most constructs show good discriminant validity based on the Fornell-Larcker criterion.

7 Findings and Discussion

7.1 Hypothesis H1:

Achievement-related game design elements positively influence consumer motivation.

In our study, achievement-related elements (ARE) meaningfully increased motivation ($\beta = 0.381$, $p < 0.001$). This corroborates the findings of Varshney et al. (2024), who showed that badges, points, and challenges satisfy users' competence needs and significantly boost motivation in online shopping contexts

7.2 Hypothesis H2:

Consumer motivation positively influences customer purchase intention.

In our study, consumer motivation strongly predicts purchase intention (CM→CPI $\beta = 0.424$, $p < 0.001$). This is consistent with Liao et al. (2024), who found that gamification significantly elevates purchase intent, mediated by brand-related perceptions derived from user motivation

7.3 Hypothesis H3:

Consumer motivation mediates the relationship between achievement related game design elements and purchase intention.

Our mediation analysis reveals that consumer motivation mediates the pathways from achievement related game design elements to purchase intention (e.g., Templated indirect effects βIRE=0.133, βARE=0.161, βSRE=0.132). This matches Faganel et al. (2024), who confirmed that achievement elements operate through experience and motivation to influence loyalty and intent

Table 03: Hypothesis Supported/Unsupported Status

HYP.	**Statement**	**Status**
H1	Achievement-related game design elements positively influence consumer motivation.	Supported
H2	Consumer motivation positively influences customer purchase intention	Supported
H3	Consumer motivation mediates the relationship between achievement related game design elements and purchase intention.	Supported

8. Implications and Conclusions

This study provides significant theoretical implications by empirically validating the Stimulus-Organism-Response (S-O-R) model within the context of gamified e-commerce. It demonstrates that game design elements act as stimuli which trigger specific psychological states within the organism, subsequently driving purchase decisions as the response. This bridges a critical gap in the literature by directly linking concrete gamification mechanics, such as rewards, to behavioral outcomes. Furthermore, the findings advance the theoretical understanding of gamification's psychological mechanisms by revealing dual mediation pathways. Specifically, consumer motivation, which is rooted in Self-Determination Theory, and customer engagement, aligned with Flow Theory, operate as distinct yet complementary mediators. Regionally, the study contributes to the field by focusing on Pakistan's e-commerce market, thereby addressing a notable gap in gamification research that has predominantly centered on Western or East Asian contexts.

From a practical standpoint, the results offer actionable insights for e-commerce platforms and marketers. For platforms, it is recommended to prioritize achievement elements, as reward systems like badges and progress bars demonstrated the strongest direct and mediated effects on purchases. A practical application for TEMU would be to enhance tiered reward structures, such as unlocking VIP status after a set number of purchases. For marketers, the key is to segment users by their underlying motivation. Extrinsically motivated users can be targeted with offers like discounts and instant cashback via "spin the wheel" features, while intrinsically motivated users may respond better to challenges, such as completing quizzes to earn badges. Additionally, marketers are advised to leverage engagement metrics like session duration and repeat visits as reliable leading indicators of purchase intent.

Despite these contributions, the study acknowledges several limitations. A primary limitation is regional bias, as the sample predominantly consisted of Pakistani users, with 91.9% aged between 18 and 25, which limits the generalizability of the findings to older demographics or other cultural contexts, such as markets with low social commerce adoption. The platform-specific focus on TEMU's strategies also means the results may not be applicable to platforms with different design philosophies, such as Amazon's less

gamified interface. The use of cross-sectional data presents another constraint, as it only captures a snapshot in time; longitudinal research is needed to reveal how gamification effects evolve, for instance, potential reward fatigue over extended periods. Finally, the reliance on self-reported survey data introduces the possibility of self-report bias, where user perceptions may not align with actual behavior. Future studies could mitigate this by integrating behavioral data sources, such as clickstream analysis.

Final Conclusion

This research explored how game design elements (GDEs) like achievement features influence purchase intentions on e-commerce platforms, with a focus on the mediating roles of customer motivation. By analyzing survey data from 210 online shoppers in Pakistan using PLS-SEM, the study confirmed that these gamification strategies significantly impact buying behavior, aligning with the Stimulus-Organism-Response (S-O-R) framework. The findings revealed that achievement-related elements (e.g., rewards, progress bars) and social features (e.g., team purchases, leaderboards) primarily boosted consumer motivation, as seen in studies by Varshney et al. (2024) and Lesmana & Brilliana (2024). These elements tap into users' desire for recognition and social interaction, making shopping feel more rewarding. The study also addressed its research questions by demonstrating that motivation mediate the link between GDEs and purchase intentions. Motivation is impactful, works to drive decisions, as shown by Liao et al. (2024).

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