SUNTEXT REVIEWS

SunText Review of Economics & Business
ISSN: 2766-4775

Open Access
Research Article
Volume 6:1

Artificial Intelligence, Gamification and Neuromarketing: New Marketing Strategies that Shape Consumer Decisions

Durmaz Y[1,*] and Yetkin B[2]

[1]*Kilis 7 Aralık University, Faculty of Economics and Administrative Sciences, Department of Marketing, Kilis, Turkey*
[2]*Hasan Kalyoncu University, Gaziantep, Turkey*

[*]**Corresponding author:** Durmaz Y, Kilis 7 Aralık University, Faculty of Economics and Administrative Sciences, Department of Marketing, Kilis, Turkey; E-mail: yakup.durmaz@kilis.edu.tr

Received date: 20 March 2025; **Accepted date:** 22 April 2025; **Published date:** 04 May 2025

Citation: Durmaz Y, Yetkin B (2025) Artificial Intelligence, Gamification and Neuromarketing: New Marketing Strategies that Shape Consumer Decisions. SunText Rev Econ Bus 6(1): 227.

DOI: https://doi.org/10.51737/2766-4775.2025.127

Abstract

Technological developments are transforming marketing strategies and artificial intelligence, gamification and neuromarketing play an important role in shaping consumer decisions. Neuromarketing analyzes consumers' unconscious reactions and offers more effective strategies, while gamification increases interaction and strengthens brand loyalty. Artificial intelligence directs consumer behaviour by providing personalized customer experiences with big data analysis. This study aims to contribute to the development of more efficient and ethical approaches by examining the effects of these three innovative strategies on marketing processes.

Keywords: Neuromarketing; Consumer behaviour; Artificial intelligence and Gamification

Introduction

Today's marketing world is undergoing a radical transformation with the rapid advancement of technology. Innovative strategies such as artificial intelligence, gamification and neuromarketing play an important role in understanding and directing consumer behaviour. While traditional marketing methods base consumer decisions on rational and conscious processes, research shows that purchasing decisions are largely influenced by subconscious factors [1-3]. In this context, neuromarketing enables the development of more effective marketing strategies by analyzing consumers' unconscious reactions [4-6]. Similarly, gamification strategies are increasingly used to increase consumer interaction and strengthen brand loyalty. Integrating game dynamics into marketing processes makes consumers' purchasing experience more fun and motivating, thus establishing stronger emotional bonds with brands [7-9]. Studies have shown that gamification mechanisms have positive effects on consumer loyalty [10-12]. On the other hand, AI-supported marketing applications have become an important factor influencing consumer decisions by providing big data analysis and personalized customer experiences. AI algorithms analyze consumer behaviours and offer them personalized suggestions, making marketing strategies more targeted [13-15]. Marketing techniques created with the combination of AI and gamification have been shown to increase consumer engagement and loyalty [16,17]. This study examines the effects of artificial intelligence, gamification, and neuromarketing on consumer decisions and investigates how modern marketing strategies can be made more effective. First, neuromarketing and consumer behaviour will be discussed, then gamification theory and consumer interaction will be evaluated, and finally, the effects of artificial intelligence-supported marketing strategies on consumer decision processes will be examined.

Neuromarketing and Consumer Behaviour

Definition and importance of neuromarketing

Neuromarketing is defined as a field where neuroscience and marketing disciplines merge to understand consumer behaviour and optimize marketing strategies. Traditional marketing methods cannot fully explain the decision-making mechanisms that occur in the subconscious of consumers, and at this point, neuromarketing offers a new and effective approach.

Neuromarketing is a marketing discipline that examines brain activity and subconscious reactions to understand consumers' decision-making processes. This field analyzes how consumer preferences are formed at the subconscious level using technologies such as functional magnetic resonance imaging (fMRI), electroencephalography (EEG), and eye tracking [18]. Since traditional marketing techniques often fail to fully grasp consumers' subconscious decision-making mechanisms, neuromarketing plays a critical role as a field that enables in-depth analysis of consumer behaviour. Although consumers often think they make conscious decisions, in reality, a large part of their decision-making mechanisms occur subconsciously. By examining these subconscious processes, neuromarketing reveals how consumers' interests and preferences for a particular product or service are shaped. However, neuromarketing is also used to strengthen brand loyalty and establish deeper emotional connections with consumers. For example, it has been scientifically proven that certain colours, sounds, or smells can affect the consumer decision-making process. Nowadays, the use of neuromarketing in different sectors is becoming increasingly widespread. In the tourism sector, it is being investigated how neuromarketing techniques can be applied to understand consumer preferences. Measuring the sensory responses of consumers using sensor technologies allows brands to make their marketing strategies more efficient. At the same time, various studies are being conducted on how consumers make purchasing decisions, which factors affect them, and how neuromarketing methods can contribute to these processes.

Consumer decision processes

The consumer decision process can be defined as the process by which individuals choose, evaluate and purchase a product or service [19]. This process is affected by psychological, sociological and economic factors [20]. Understanding consumer behaviour is a critical factor for increasing the effectiveness of marketing strategies and gaining competitive advantage for companies [21].

Consumer decision process models

The consumer decision process is addressed within the framework of different models. Some of these are the Howard and Sheth Model, the Engel-Kollat-Blackwell Model and Fishbein and Ajzen's Theory of Planned Behaviour.

Howard and Sheth Model: This model examines the consumer's information acquisition and decision-making process in detail. The model suggests that the consumer makes decisions under the influence of perceived stimuli, past experiences and social factors (EMSS, 2024).

Engel-Kollat-Blackwell Model: In this model, the consumer's decision-making process is examined in five basic stages: problem definition, information search, and evaluation of alternatives, purchase and post-purchase evaluation [22].

Fishbein and Ajzen's Theory of Planned Behaviour: This theory suggests that individuals' intentions to perform a certain behaviour are determined by attitude, social norms and perceived behavioural control.

Factors affecting the decision process

Factors affecting consumer behaviour can be summarized as follows;

Psychological Factors; The consumer's perception, motivation, learning process and attitudes are the basic psychological factors affecting the decision-making process.

Social Factors; such as family, reference groups and social class play an important role in the consumer's decision-making process.

Economic Factors; Consumer income, price perception and economic conditions are factors that shape the decision-making process to a great extent (EMSS, 2024).

Gamification Theory and Consumer Interaction

What is Gamification?

Gamification is an approach that aims to increase the motivation and interaction of participants by using the basic elements of game design in non-game environments. This concept is used especially in fields such as education, business, health and finance, and aims to make the learning process more effective and fun.

Gamification is generally defined as the application of game mechanics and dynamics to non-game scenarios [23]. The basic components of gamification are:

Scoring and Badges: Recognizing participants' achievements by giving them points and badges when they achieve certain goals [24]. Leaderboards: Increasing motivation by creating friendly competition between users. Feedback and Progress Tracking: Providing continuous feedback to participants so that they can track their progress [25]. Storytelling: Offering meaningful stories for users to have a more engaging experience [26].

The effect of gamification mechanisms on consumer psychology

In recent years, with the spread of digital technologies, gamification strategies have begun to play a critical role in influencing consumer behaviour. Gamification aims to guide consumer loyalty, participation, and purchase decisions by integrating game dynamics into non-game areas [27].

Motivation and consumer behaviour

Gamification stands out as a factor that triggers both intrinsic and extrinsic motivations in consumer psychology. Intrinsic motivation

is related to the sense of pleasure and satisfaction that consumers get from using a gamified system. Extrinsic motivation is strengthened by reward mechanisms such as points, badges and leader boards [28].

Loyalty and brand loyalty

Gamification has an effect that increases consumers' loyalty to brands. Gamification elements in digital retailing make the shopping experience more interactive and fun, increasing consumer loyalty to a higher level. In this context, reward-based loyalty programs are one of the important factors that ensure that consumers constantly prefer a certain brand [29].

Emotional bond and social interaction

Consumers can establish a deeper emotional bond with brands through gamification mechanisms. The social interaction offered by gamification elements strengthens the sense of community by influencing consumers' purchasing decisions [30]. This plays a critical role in increasing consumer loyalty, especially on e-commerce platforms.

Decision-making process and purchasing behaviour

Gamification elements can accelerate consumers' decision-making process and increase the level of interaction in product selection. The use of point-based systems on various e-commerce platforms can encourage consumers to spend more.

Consumer loyalty and loyalty programs

Loyalty programs are one of the critical elements through which gamification mechanisms constantly direct consumers to the brand. Consumers are more likely to turn to a particular brand through motivational factors such as collecting points and earning badges.

Gamification from a Neuromarketing perspective

Today's marketing world is developing new approaches to understand the subconscious of consumers. Neuromarketing analyzes the unconscious reactions of individuals by using neuroscience techniques to understand consumer behaviour [31]. In this context, the integration of gamification methods with neuromarketing can increase the effectiveness of marketing strategies [32]. Neuromarketing examines consumer decision-making mechanisms using neuroscientific techniques such as EEG, fMRI and eye tracking [33]. Gamification, on the other hand, refers to the application of game dynamics in non-game environments and uses various reward systems, levelling and competition elements to increase user interaction [34]. Considering gamification within the framework of neuromarketing provides an understanding of how brain activity interacts with reward mechanisms and decision-making processes [35]. Studies show that gamification elements increase consumers' attention and improve brand loyalty [36]. Game mechanisms affect users' learning and decision-making processes, allowing for more permanent and effective strategies to be developed in the market [37]. Studies using EEG and fMRI have shown that gamification elements increase individuals' dopamine release and increase consumer motivation [38]. The interaction between neuromarketing and gamification will contribute to more individualized and effective marketing strategies in the future. In particular, AI-supported neuromarketing approaches will allow for in-depth analysis of consumer perception [39].

Gamification theory and marketing

Gamification is an approach that aims to increase participation, interaction and motivation by using traditional game elements in non-game environments [40]. In recent years, the effects of gamification in marketing strategies have been increasingly examined and it is seen that it plays an important role in shaping consumer behaviour [41]. Gamification includes elements such as points, badges, leader boards and stories, encouraging users to exhibit certain behaviours and increasing brand loyalty. In the field of marketing, gamification strategies are used as an effective tool to motivate consumers, increase brand loyalty and influence purchase intentions [42]. Especially on digital platforms, consumer participation is increased and interaction is provided with the use of gamification elements. Studies conducted in the mobile marketing and e-commerce sectors reveal that gamification has positive effects on customer feedback, loyalty programs and purchasing behaviours [43]. In the future, more research is needed on how gamification can be applied in different sectors.

Artificial Intelligence-Powered Gamification

Artificial intelligence (AI) and gamification are two innovative approaches that have been widely used in education, healthcare, business, and entertainment sectors in recent years to increase user engagement [44]. While gamification increases individuals' motivation and increases their interaction levels, AI makes these processes more efficient by supporting them with personalization, adaptive learning, and data analysis-based decision-making mechanisms. This study examines the basic components, application areas, and challenges of AI-enabled gamification. AI-enabled gamification systems can dynamically adapt game mechanics according to users' learning speed, interests, and feedback. For example, the gamified e-book platform Treasure Island is designed to improve students' AI literacy and increase their cognitive and emotional engagement. In mobile learning (m-learning) applications used in education, AI-supported gamification increases students' motivation by providing them with

personalized learning experiences [45]. In the business world, AI-supported gamification is used for various purposes such as increasing employee motivation, strengthening customer loyalty, and optimizing performance evaluations. Especially in the e-commerce sector, AI-based gamification systems analyze customer behaviours, provide personalized recommendations, and improve user experience. However, the development and implementation of AI-supported gamification systems also pose some challenges. Issues such as data privacy, ethical concerns, and impartiality of algorithms are among the biggest discussion topics in this field. How to protect users' motivation in the long term and how to optimize gamification elements are also among the topics that need to be investigated.

Gamification and Ethics

Gamification is an approach that aims to increase individuals' motivation and interaction by using the basic elements of game design in non-game environments, but the ethical dimension of these applications should not be ignored. From the perspective of Plato's "Allegory of the Cave", gamification systems can manipulate individuals' perception of reality and lead to over-valuation of digital achievements [46]. Mechanisms that encourage excessive competition can cause individuals to exhibit unethical behaviour [47]. The use of gamification in the business world is also open to ethical debate. According to a study conducted by Leite [48], constant monitoring and scoring of employees can increase pressure in the workplace. The compliance of gamification designs with ethical principles is a critical element in supporting the psychological well-being of users. Ethical gamification applications should help to sustainably increase individuals' motivation while also protecting individual and social values [49].

Discussion and Conclusion

This study examined how artificial intelligence, gamification, and neuromarketing strategies shape consumer decisions. Research findings show that consumer behaviour is largely influenced by unconscious processes and that neuromarketing techniques play a critical role in understanding these processes. Artificial intelligence-supported marketing strategies guide consumer decisions and increase interaction by offering personalized customer experiences with big data analysis. Gamification techniques emerge as an effective strategy to increase consumer engagement and strengthen brand loyalty. Integrating game mechanisms into marketing processes enables consumers to make the purchasing process more fun and motivating, allowing them to establish stronger emotional bonds with the brand. Studies confirm that gamification elements have positive effects on consumer loyalty. However, the ethical dimensions of gamification and AI-supported marketing strategies should also be taken into account. The impartiality of AI algorithms, data privacy, and the possibility of consumer manipulation are among the issues that need to be further investigated in the future. It is also emphasized that gamification can cause excessive competition and loss of motivation, and therefore should be implemented in a balanced way. As a result, the effects of neuromarketing, AI, and gamification on marketing strategies are increasing day by day. However, the implementation of these strategies in a sustainable and ethical framework is critical to maintaining consumer trust and brand loyalty in the long term.

References

1. Karabacak K. Neuromarketing approach in tourism sector. RIMAK Int J Humanities Soc Sci. 2024; 6: 375-394.
2. Pavlovska I. Requirements for the emergence and development of the neuromarketing concept. Eco' Horizons. 2023.
3. Lekshmi S, Joseph M, Simon B, Joseph S, Jacob G, Lukose A. A bibliometric analysis of the trends and impact of neuromarketing research: peering into the consumer brain. Cureus. 2024; 16: e69314.
4. Terenteva NV, Vovchenko DV. Features of the space of neuromarketıng sensory technologıes. Aktual'ni Problemy Ekonomiky= Actual Problems in Eco. 2023; 23-30.
5. Durmaz Y, Bakan A. A conceptual research on the relationship between consumer and advertisement of Neuromarketing. Adv Soc Sci Culture. 2023.
6. Balamurugana, Jeyalakshmi R. A study on exploring the role of neuromarketing in enhancing brand loyalty. Inter J Res Publ Rev. 2024; 5: 3584-3589.
7. Irwanto I, Wahyudiati D, Saputro AD, Laksana SD. Research trends and applications of gamification in higher education: A bibliometric analysis spanning 2013–2022. Inter J Emerging Technol Lear (iJET). 2023; 18: 19-41.
8. Ayaz A, Ozyurt O, Al-Rahmi WM, Salloum SA, Shutaleva A, Alblehai F, Habes M. Exploring gamification research trends using topic modeling. IEEE Access. 2023; 11: 119676-119692.
9. Trinidad M, Ruiz M, Calderon A. A bibliometric analysis of gamification research. IEEE Access. 2021; 9: 46505-46544.
10. Ramdhani N, Hussein AS. The impact of gamification on loyalty mediated by consumer engagement and brand awareness. Int J Res Bus Soc Sci. 2024; 13: 96-107.
11. Rizano SA, Salehudin I. Does gamifying the marketplace help in building consumer engagement? J Marketing Innovation. 2023; 3: 94-109.
12. Castellano-Tejedor C, Cencerrado A. Gamification for mental health and health psychology: Insights at the first quarter mark of the 21st century. Int j environ res pub health. 2024; 21: 990.
13. Modi T, Gochhait S. Impact of artificial intelligence on gamification: current applications. In 2023 International Conference on Innovative Data Communication Technologies and Application (ICIDCA). 2023; 287-290.

14. Ng DTK, Xinyu C, Lok Leung JK, Chu SKW. Fostering students' AI literacy development through educational games: AI knowledge, affective and cognitive engagement. J Computer Assisted Lea. 2024; 40: 2049-2064.
15. Prasad KDV. Gamification and its applications. J Bus Strategy Fin Manag. 2021; 3: 4-7.
16. Narayanan KS, Kumaravel A. Hybrid gamification and AI tutoring framework using machine learning and adaptive neuro-fuzzy inference system. J Adv Res App Sci Eng Technol. 2024; 42: 221-233.
17. Janson A, Schmidt-Kraepelin M, Schobel S, Sunyaev A. Adaptive and intelligent gamification design. AIS Transactions on Human-Computer Interaction. 2023; 15: 136-145.
18. Akbar S, Akbar N, Yosuf M. Neuromarketing; its significance in the marketing world. Global Soc Sci Rev. 2023; 8: 376-389.
19. Schmitt B. Consumer information processing and decision-making: Origins, findings, applications, and future directions. J Consumer Res. 2024; 51: 2-6.
20. Durmaz Y, Gunduz G. A theoretical approach to social factors influencing consumer behavior. Inter J Res GRANTHAALAYAH. 2021; 9: 252-257.
21. Leonov Y, Nakonechnyi O, Khalimanenko V, Nikolaiko H, Heraimovych V. Analysis of the influence of psychological factors on consumer behavior and the decision-making process. Eco Affairs. 2023; 68: 1643-1651.
22. Wardhana AS, Pawito P, Satyawan IA. Marketing communication analysis of the consumer decision making process. Marketing. 2023; 2.
23. Karsen M, Masrek MN, Safawi AR. Gamification in MOOC: A systematic literature review. Environment-Behaviour Proceedings J. 2022; 7(SI10): 111-119.
24. Rodriguez RAA, Rosado KA. Use of gamification as a pedagogical strategy to strengthen the understanding of application problems with rational numbers. Revista Minerva: Multidisciplinaria de Investigacion Cientifica. 2023; 6.
25. Nakiyemba S. Impact of gamification on knowledge acquisition. Eur J Information Knowledge Manag. 2024; 3: 1-12.
26. Bass GA, Chang CW, Sorce LR, Subramanian S, Laytin AD, Somodi R. Gamification in critical care education and practice. Critical Care Explorations. 2024; 6: e1034.
27. Sun Y, Xing J. The impact of gamification motivation on green consumption behavior. Sustainability. 2023; 15.
28. Zandi A, Sekhavat YA. Gamification in retail: enhancing grocery customer experience. Int J Serious Games. 2024; 11: 3107-3120.
29. Kadir MFIA, Sulaiman Z, Hasbullah NN, Tuan JLY. Preliminary study of perceived enjoyment, impulse buying tendency, gamification, and online purchase intention on e-commerce using stimulus-organism-response (S-O-R). Inter J Academic Res Bus Soc Sci. 2024; 14: 1543-1553.
30. Agrawal NA, Punwatkar S. Exploring the impacts of gamification in marketing on consumer's buying intention. Res Rev Inter J Multidisciplinary. 2023; 8: 145-153.
31. Royo-Vela M, Varga A. Unveiling neuromarketing and its research methodology. Encyclopedia. 2022; 2: 729-751.
32. Behl A, Jayawardena N, Shankar A, Gupta M, Lang LD. Gamification and neuromarketing: A unified approach for improving user experience. J Consumer Behavior. 2024; 23: 218-228.
33. Khondakar MFK, Sarowar MH, Chowdhury MH, Majumder S, Hossain MA, Dewan MAA, et al. A systematic review on EEG-based neuromarketing: recent trends and analyzing techniques. Brain Informatics. 2024; 11: 1-25. 17.
34. Ray DSS, Ota R, Rout D, Paricha P. Case: gamification as a marketing tool. Int J Manag Technol Eng. 2021; 11: 61-68.
35. Alsharif AH, Salleh NZM, Abdullah M, Khraiwish A, Ashaari A. Neuromarketing tools used in the marketing mix: A systematic literature and future research agenda. Sage Open. 2023; 13.
36. Anupama T, Rosita S. Unveiling the subliminal impact: exploring how neuromarketing advertisements resonate with youth audiences. South India J Soc Sci. 2024; 22: 304-313.
37. Duque-Hurtado P, Samboni-Rodriguez V, Castro-Garcia M, Montoya-Restrepo LA, Montoya-Restrepo IA. Neuromarketing: Its current status and research perspectives. Estudios gerenciales. 2020; 36: 525-539.
38. Zhu Z, Jin Y, Su Y, Jia K, Lin CL, Liu X. Bibliometric-based evaluation of the neuromarketing research trend: 2010–2021. Frontiers psychol. 2022; 13: 872468.
39. Deb A. A systematic literature review on neuromarketing-a new horizon of marketing. Int J Scientific Development Res. 2021; 6: 181-191.
40. Huseynli B, Uslu A. A qualitative study on the definition and concept of gamification. J Eco Sci: Theory Practice. 2024; 81: 40-50.
41. Fitriana RN, Abidin Z. Analysis of gamification implementation on the marketplace. J Adv Information Syst Technol. 2023; 5: 127-141.
42. Krishnaveni T, Shanthi V. Influence of gamification marketing on brand awareness. Manag. 2022; 10: 468-470.
43. Azizjon B. Improving the mechanism of sustainable development of the tourism sector in the regions. Gospodarka i Innowacje. 2024; 44: 104-108.
44. Gao L. A literature review: which, how and what for the use of artificial intelligence in gamification. In proceedings of the 18th European conference on games based learning. Academic Conf pub lim. 2024.
45. Kherazi A, Bourray M. Gamification and m-learning: An innovative approach to sustainable language learning. In E3s Web Conf. 2024; 477: 00066.
46. Karpouzis K. What would Plato say? Concepts and notions from Greek philosophy applied to gamification mechanics for a meaningful and ethical gamification. arXiv preprint arXiv:2403.08041. 2024.
47. Jacobides MG, Ma MD, Trantopoulos K, Vassalos V. The business value of gamification. California Manage Rev. 2024; 66: 91-107.
48. Leite RMC, Alves LRG, Cardoso LDSP, Neto HMM. How has gamification in the production sector been developed in the manufacturing and construction workplaces? Buildings. 2023; 13: 2614.
49. Makhrout S, Chouhbi A. Fundamental models of consumer purchasing behavior: an in-depth analysis since the 1960s. [RMd] RevistaMultidisciplinar. 2024; 6: e202419-e202419.