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Is Gamification Important for Service Systems Non-Users? A Study on Airline Loyalty Programs

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Abstract

Increasing use of social communication networks and mobile technology have caused the airline-passenger relationship to shift from traditional methods to more modern and technological infrastructure processes. The airline loyalty programs provide that permit more focused marketing, tailored services, and more accessibility for both members and non-members. Consumers are motivated by prizes, competition, and social engagement in gamified loyalty programmes. Gamification, which is effective in improving the results of innovation practices and their acceptance by consumers, plays an active role in this interaction. In this direction, the study aims to reveal the factors that affect the service system non-users behavioral intentions based on airline loyalty programs and its relationship between social influence, consumer innovativeness, and gamification. The research data were collected from air passengers who use air transportation at least once time and have no loyalty program membership. Data obtained from passengers were analyzed using the PLS-SEM model. The findings show that gamification processes will improve the participation process of new passengers, and in this direction, new consumer profiles can be added to the portfolio of service systems. In addition, it has revealed that gamification and social influence are effective on behavioral intention and gamification has a mediating role in the relationship between consumer innovativeness and behavioral intention.

1. Introduction

In the aviation business, information and communication technologies (ICTs) are essential for the functioning of airline service systems and passenger relationship management. Airlines can effectively handle flight scheduling, ticketing, baggage handling, and consumer services, among other activities, owing to these technologies. In addition, it enables real-time communication between ground employees and pilots, ensuring that passengers travel safely and on schedule. Airlines may collect and analyze consumer data using these technologies, which helps them better target their services and marketing to specific passengers and enhance their overall consumer experience (Polat, 2021). ICTs integration in the aviation industry has, all things considered, substantially increased productivity and consumer happiness, making it an essential part of contemporary air travel.

The development of airline loyalty programs, which aim to reward and retain consumers through a range of perks and advantages, has been significantly influenced by ICTs. Airlines can now gather and analyze data on consumer behavior and preferences, allowing them to customize their loyalty programs to better serve their consumers' needs and preferences. ICTs have made it possible for airlines to focus their marketing efforts more effectively on loyalty programs, which has improved consumer involvement and engagement (Lacey & Sneath, 2006). The ability to redeem rewards online or through mobile applications is just one example of how ICTs have allowed airlines to provide more convenient and individualized services to loyalty program participants (Ahn et al., 2015). Non-members have also been impacted by loyalty schemes. The exposure of loyalty program perks on social media sites might make non-members feel FOMO (fear of missing out), which can encourage them to sign up for the program. Airline loyalty programs' choices for membership and participation may make the program more appealing to non-members (Meyer-Waarden, 2008; Leenheer et al., 2007).

Airline loyalty programs have permitted more focused marketing, tailored services, and greater accessibility for both members and non-members. Consumers are motivated by prizes, competition, and social engagement in gamified loyalty programs. Gamification, the "application of game features and design concepts in non-game situations," has drawn more attention as a means of inspiring and energizing users of service systems (Deterding et al., 2011). Uncertainty exists over the efficiency of gamification in inspiring and involving non-users or those who are yet to accept or use a service system. Using ICT-based gamification approaches in airline passenger interactions has the potential to boost loyalty and the consumer experience. Gamification is the use of game-like components to engage and inspire people to complete desired tasks. These components included points, prizes, and challenges. Airlines may provide consumers with a more pleasurable and engaging travel experience by introducing

gamification into their interaction with passengers, which will eventually enhance consumer satisfaction and loyalty (Pasca et al., 2021).

In order to boost user engagement and involvement, gamification has been widely used in a variety of industries, including business, education, health, and government (Wanick & Bui, 2019; Rodrigues et al., 2019). By boosting non-users' motivation, enjoyment, and perception of the system's utility, gamification can have a beneficial effect on non-users of service systems and raise their desire to use them (Koivisto & Hamari, 2014). Gamification also increases a system's readiness to communicate with and share information with non-users (Yang et al., 2017). Gamification techniques encourage cooperation and social engagement among non-users, which may be strong motivations for some people (Deterding et al., 2011). This is important for service systems that rely on user-generated content or that require user cooperation to achieve a common objective. In summary, gamification is an effective way to engage and motivate non-users of a service system by providing a sense of purpose, competition, social interactions, and fun. It can also increase non-users' intentions to use the system and their willingness to share information and collaborate with others.

Self-Determination Theory (SDT) is relevant for understanding the effects of gamification on non-users of service systems (Suh et al., 2018). It is a psychological theory that explains how people's basic psychological needs for autonomy, competence, and relatedness influence their behavior, well-being, and motivation (Ryan & Deci, 2002). According to the SDT, people are more likely to be genuinely driven and enjoy a feeling of well-being when their fundamental psychological needs are met through their experiences and activities. On the other hand, if these fundamental wants are not addressed, people can become more extrinsically driven and feel out of control. An emerging field of study is the use of SDT for the gamification of service systems. Numerous areas, including education (Gagné & Deci, 2005), sports (Standage et al., 2005), and health care, have all been the subject of SDT research (Osei-Frimpong, 2017). In the context of service systems, gamification components such as badges and points can increase feelings of competence, relatedness, and autonomy (Richter et al., 2015).

This research suggests that SDT could be a useful framework for understanding the effects of gamification on non-users of service systems. The original value of this study is to reveal why gamification processes, which have been previously discussed in terms of different contexts and areas in the literature, are important for people who are not users of service systems. In addition, this study is expected to contribute to the literature in this field (in the aviation context). Organizations can motivate and engage non-users by designing service systems that support people's basic psychological needs such as autonomy, competence, and relatedness through gamification elements. In this context, this study examines the impact of gamification (especially airline loyalty programs), social influence, and consumer innovativeness on the behavioral intentions of non-users of service systems.

2. Conceptual Framework

2.1. Gamification and Non-users of Service Systems

According to extensive research in the field of psychology, gamification, the application of game design principles in contexts other than games, may have a variety of advantages, especially for behavior modification (Lin et al., 2018). The use of gamification to improve engagement and the adoption of service systems by non-users has been a prominent topic of research in this field (Lee, 2019).

For non-users of a service system, gamification may be crucial for a number of reasons (Novak et al., 2018; Xiao et al., 2021; Guo et al., 2022):

- ***Motivation:*** Gamification may provide users with a sense of success and purpose, which is especially useful for attracting non-users who may lack a clear driving force to utilize the system.
- ***Competition:*** Gamification may add a competitive component to the system, which can be a strong incentive for certain individuals.
- ***Social interaction:*** Gamification has the potential to encourage social engagement and teamwork, which may appeal to non-users who do not necessarily feel connected to the service system.
- ***Fun:*** Gamification helps to increase consumer satisfaction with the service system, which can be a major motivator for becoming less frequent users more active.

Based on SDT, three fundamental psychological needs—autonomy, competence, and relatedness—can affect why someone chooses to engage in a certain activity (Ryan & Deci, 2002). By giving users the ability to customize their experiences, offer clear goals and feedback, and foster a feeling of social connection through competition or cooperation, gamification can be utilized to meet these demands. The application of gamification to a service system improves user engagement and adherence to treatment regimens (Pramana et al., 2018). Gamification processes are effective tools for promoting sustainable behaviors, such as recycling or energy conservation (Douglas & Brauer, 2021), as well as increasing recycling rates and decreasing waste production (Santti et al., 2020). The literature suggests that gamification has the potential to increase the engagement and adoption of service systems, particularly among non-users, by addressing psychological needs and providing clear goals, feedback, and incentives.

In the context of service systems, SDT can be used to understand the motivations and behaviors of non-users or individuals who have not yet adopted or utilized a service (Lee, 2019). Literature has shown that people's basic psychological needs can influence their decision to use or not use a service system (Sheldon, 2005). A service system may be more likely to draw and retain non-users if it is built to fulfill people's fundamental psychological requirements for autonomy, competence, and relatedness.

2.2. Social Influence, Gamification & Behavioral Intention

Social influence is one of the main elements that affect how well gamification works. Social influence significantly affects how people behave and make decisions, especially in the setting of service systems (Li, 2013). The idea of social influence relates to how other people affect a person's attitudes, beliefs, and behavior (Abrahamse & Steg, 2013). Social influence is a powerful asset that may be used to inspire and include people in service systems, even those who do not. One strategy utilized to boost involvement among non-users is the gamification of service systems.

Gamification may increase social influence in various ways, including by promoting social contacts, establishing social norms, and providing social comparison data (Suh et al., 2018). For instance, gamified workout software may allow users to create exercise groups with their friends or display how their progress stacks up against their friends. These social

pressures might encourage users to continue using the app and succeed in their objectives (Pei-Shan & Hsi-Peng, 2014). The first hypothesis of this study is provided below.

H_1: Social influence influences service system non-users' gamification usage in a positive and significant way.

Additionally, social influence is a key idea in comprehending how consumers decide whether to use service systems. According to the notion of social influence, people are greatly affected by the behavior and attitudes of others around them (Hu et al., 2019). This can occur through various forms of social influence such as normative influence (conformity to group norms), informational influence (reliance on information from others), and interpersonal influence (direct persuasion from others). Friends and family members who use a certain service system can have a beneficial influence on a non-intentional user to utilize that system (Fischer-Preßler et al., 2022). Consequently, the second hypothesis is as follows:

H_2: Social influence influences service system non-users' behavioral intention in a positive and significant way.

2.3. Consumer Innovativeness, Gamification & Behavioral Intention

Consumer innovativeness is the willingness of consumers' willingness to try novel products, services, and concepts (Al-Jundi et al., 2019). It has been demonstrated that the idea of consumer innovativeness has a significant role in the acceptance and usage of new technologies and service systems. For consumers of service systems who are not users, consumer innovativeness is a key indicator of engagement in the gamification process (Chauhan et al., 2022). Consumer innovativeness often determines whether current non-users will start using the service system often (Dawi & Jalil, 2019). Even in the absence of monetary compensation, it serves as a significant predictor of involvement in service systems (Baswani et al., 2021). Therefore, this study proposes the following hypothesis:

H_3: Consumer innovativeness influences service system non-users' gamification usage in a positive and significant way.

Additionally, among non-users of service systems, consumer innovativeness is a highly significant predictor of behavioral intention. Innovative consumers are often more inquisitive, daring, and open-minded, which increases their likelihood of engaging in novel activities (Japutra & Hossain, 2021). They also frequently exhibit greater readiness to take chances and try new things, which raises the possibility that they will be open to experimenting with novel service models. Innovation increases the probability that people will frequently use a service (Kaur et al., 2020). Consumer innovativeness increases the possibility that non-users will become regular users of service systems, which has a significant impact on their behavioral intentions (Singh et al., 2022). Based on these justifications, the following theory is proposed.

H_4: Consumer innovativeness influences service system non-users' behavioral intention in a positive and significant way.

2.4. Gamification and Behavioral Intention

Gamification incorporating aspects such as feedback, competition, and choice can improve consumer demand (autonomy, competence, and relatedness) and boost consumers' behavioral intention to use a service system (Yang et al., 2017). Consumers' perceptions of competence and relatedness were dramatically boosted by gamification components, such as feedback and competition, which increased their propensity to utilize the service system (Suh et al., 2017; Tobon et al., 2020). Additionally, giving consumers a choice in gamified service systems boosted their perception of their independence, which raised their inclination to utilize the service (Zainuddin et al., 2020; Xu et al., 2022). The use of gamification can lead to certain behaviors, such as better learning outcomes or more knowledge (Lee, 2019). Gamification has been shown to have behavioral effects on users' pro-social behavior and continued service usage (Hamari & Koivisto, 2015a; 2015b; Harwood & Garry, 2015; Rai & Beck, 2017; Mulcahy et al., 2020; Whittaker et al., 2021). In this situation, service system non-users can experience the same consequences and motivator sources. To increase the behavioral intention of non-users to use a service system, it may be more beneficial to offer clear feedback and possibilities for competition and choice:

H_5: Gamification influences service system non-users' behavioral intention in a positive and significant way.

2.5. Gamification as a Mediator

Users' perceptions of other users' perceptions of the service's use are likely to be reflected in their social influence. By receiving "likes" and "comments," individuals can receive feedback on how well they live up to the expectations of other users (Hamari & Koivisto, 2013). Gamification is an effective technique for modifying the link between social influence and behavioral intentions by enhancing non-users' perceptions of behavioral control. Consumers are more inclined to engage in behavior when they believe that they have greater control over it. By increasing task transparency and providing users with visible feedback on progress, gamification components, such as points, badges, and leaderboards, can boost users' perceptions of behavioral control (Hamari, 2017; Alhammad & Moreno, 2020). Gamification may boost consumer motivation and engagement by encouraging social interaction between users and non-users. By enhancing the behavioral control, motivation, and social connections of service system non-users, gamification can serve as a mediator between social influence and behavioral intentions:

H_6: Gamification has a mediating role between social influence and behavioral intention.

The experience is made more enjoyable and engaging in game design components, such as challenges and prizes, which can motivate users to interact with the service system (Liu et al., 2011; Xu et al., 2013). When a service system incorporates gamification, consumers are encouraged to buy more services, which increases their behavioral intent to keep using the system (Hamari & Koivisto, 2015b; Hsu & Chen, 2021). In conclusion, by encouraging a sense of exploration and discovery, gamification can serve as a mediator between consumer innovativeness and the behavioral intention of service system non-users:

H_7: Gamification has a mediating role between consumer innovativeness and behavioral intention.

3. Materials and Methods

In this study, a questionnaire was developed from the literature to test the hypotheses that examine the relationship between social influence, consumer innovativeness, gamification, and behavioral intention for service system non-users. The research dataset was collected from air passengers who used air transportation at least once and had no loyalty program membership.There were two sections in the questionnaire. The first segment contained questions created using a 5-point Likert scale to assess the study's components, while the second section contained inquiries meant to ascertain the participants'

demographic details. Reliable measures were chosen after a thorough literature study to verify that the construct in the questionnaire was content-valid. Additionally, academics and travelers examined the content of the questions.

The conceptual model of the study is shown in Figure 1.

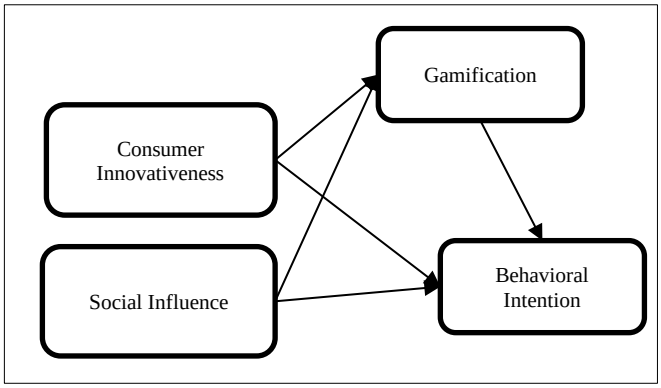

Figure 1. Conceptual Model

The questionnaire items were adapted from the literature:

- Social influence (3 items): Venkatesh et al., 2012,
- Consumer innovativeness (3 items); San Martín & Herrero, 2012,
- Gamification (3 items); Baptista & Oliveira, 2017,
- Behavioral intention (3 items); Venkatesh et al., 2012.

Data were gathered from an online survey of airline passengers from Turkey who had no loyalty program membership. The participants were primarily asked about their flight frequencies and airline preferences, and it was determined that they had previously performed at least one flight. For the next question, the target audience was assessed by asking whether they had any airline loyalty program membership. IP limitation was used to stop participants from completing numerous questions on the same computer. In total, there were 172 returns. There were 126 questionnaires left after incomplete and coherent questionnaires were removed for processing.

Participants' demographic statistics (gender, age, education, occupation, airline travel frequency, and airline choice) are presented in Table 1.

By clearly defining scale items, keeping questions short, labeling each point on the response scale to remove any potential for ambiguity, and using both positively and negatively worded measures to account for acquiescence and dis-acquiescence biases, procedural remedies were used to improve the scale items. Harman's single-factor methodology was applied to assess common method bias. The cut-off point for using Harman's single-factor test was that 50% of the variation was explained by the biggest factor (Podsakoff et al., 2003). All the scales that comprised the elements of the measurement model were compelled to create a single dimension using factor analysis (R^2=33,2%). The application of a one-factor solution demonstrated a lack of a common method bias (Arica et. al., 2022). The relationships between the variables in the study model were examined using the PLS-SEM approach (Ringle et al., 2015). Reliability was assessed using composite reliability (CR), Cronbach's alpha, and rho A. For these, a cutoff value of 0.7. Expectation constructions are a sub-item of the consumer innovativeness variable. "I am often the first to try new services among the people around me." was removed because the factor loading was lower (Table 2).

Table 1. Participants Demographic Statistics

	F	%		F	%
Gender			**Occupation**		
Male	60	48	Public	26	20.6
Female	66	52	Private	11	8.7
Total	126	100	Student	84	66.7
Age			Other	5	4.0
18-25	83	65.9	Total	126	100
26-32	18	14.3	**Travel Frequency**		
33-40	14	11.1	Once a Year	49	38.9
41-48	4	3.2	>2 times a year	53	42.1
>over 49	7	5.6	Once a month	4	3.2
Total	126	100	>2 times a month	2	1.6
Education			Once a week	18	14.3
Associate	33	26.2	Total	126	100
Bachelor's	78	61.9	**Airline Choice**		
Master	7	5.6	THY	73	57.9
PhD	8	6.3	Pegasus	29	23.0
Total	126	100	SunExpress	10	7.9
			AnadoluJet	14	11.1
			Total	126	100

Table 2. Measurement model statistics

Construct	Items	Loadings	α	rho_A	CR	AVE
Consumer Innovativeness	CIN1	0,874	.864	.864	.864	.761
	CIN2	0,871				
Social Influence	SOI1	0,865	.857	.860	.857	.668
	SOI2	0,822				
	SOI3	0,761				
Gamification	GAM1	0,831	.821	.850	.830	.624
	GAM2	0,627				
	GAM3	0,888				
Behavioral Intention	BI1	0,824	.914	.917	.914	.779
	BI2	0,881				
	BI3	0,940				

The average variance extracted (AVE) with a threshold of 0.5 explains convergent validity (Hair et al., 2014). By examining the heterotrait-monotrait ratio (HTMT), which has been referred to as a prognosis for factor correlations, discriminant validity is evaluated. According to Monte Carlo simulations conducted by Voorhees et al. (2016), HTMT outperforms more conventional measures of discriminant validity, and its value should be below the threshold of 0,9 (Henseler et al., 2015). Discriminant validity was guaranteed by all HTMT ratios (Table 3).

Table 3. Heterotrait-Monotrait Ratio (HTMT)

	Behavioral Intention	Gamification	Social Influence
Gamification	0.731		
Social Influence	0.700	0.666	
Consumer Innovativeness	0.520	0.670	0.459

4.2. Hypothesis Testing

Gamification, social impact, and consumer innovativeness variables all had variance inflation factor (VIF) values below the cut-off of 5. (Hair et al., 2017). As a result, Table 4 does not achieve the threshold level of the predictor constructs.

Table 4. Inner VIF values of the structural model

	Gamification	Behavioral Intention
Behavioral Intention		-----
Gamification	-----	2.588
Social Influence	1.267	1.811
Consumer Innovativeness	1.267	1.811

Following factor analysis and goodness of fit testing, the path coefficient with 5000 bootstrapping was used to examine the direct and indirect effects in the structural model. The direct and indirect effects of consumer innovativeness and social influence on behavioral intention via gamification are presented in Table 5.

Mediation takes place when a third mediator variable steps between two related constructs. Changes in the exogenous construct in the PLS path model result in changes in the mediator variable, which then result in changes in the endogenous construct. Therefore, a mediator variable controls the connection between the two constructs (Hair et al. 2017). A bootstrapping process of the particular indirect effects was used to examine the mediating impact of gamification on the relationship between consumer innovativeness and behavioral intention and social influence and behavioral intention. This was done in accordance with the method provided by Zhao et al. (2010) for identifying mediation effects.

The direct effects of consumer innovativeness (H_1; β=0.457, $p<0.001$), and social influence (H_3; β=0.458, $p<0.001$) on gamification were also significant and positive. While the direct effect of social influence (H_2; β= 0.389, $p<0.05$) on gamification were significant and positive, the relationship between consumer innovativeness on behavioral intention wasn't significant (H_4; β= 0.059, $p>0.05$). The direct effect of gamification (H_5; β= 0.415, $p<0.05$) on behavioral intention was significant and positive. Subsequently, the indirect effect of consumer innovativeness on behavioral intention through gamification is also positive and significant (H_7; β= 0.197, $p <0.05$). However, gamification had no mediation effect between social and behavioral intention relationships (H_6: β= 0.196, $p>0.005$). The results are presented in Table 5. The indirect effect of the gamification variable indicated that, the relational effect between consumer innovativeness and behavioral intention stems partially from the direct effect and partially from the indirect effect. This means that the gamification variable mediates the relationship between innovativeness and behavioral intention of consumers. Therefore, H_7 hypothesis is supported, but H_6 hypothesis isn't.

The structural model of the study is shown in Figure 2.

Table 5. Direct and indirect effects and hypothesis tests

Paths	Paths Coef.	STDEV	t Stats	f^2	p Val.	Conclusion
Social Influence -> Gamification (H_1)	0.457	0.112	4.086	0.266	0.000	Supported
Social Influence -> Behavioral Intention (H_2)	0.389	0.053	2.513	0.195	0.012	Supported
Consumer Innovativeness -> Gamification (H_3)	0.458	0.055	4.115	0.269	0.000	Supported
Consumer Innovativeness -> Behavioral Intention (H_4)	0.059	0.054	0.447	0.016	0.655	Not supported
Gamification -> Behavioral Intention (H_5)	0.415	0.049	2.401	0.141	0.017	Supported
Social Influence-> Gamification->Behavioral Intention (H_6)	0.196	0.104	1.833		0.067	Not supported
Consumer Innovativeness -> Gamification->Behavioral Intention (H_7)	0.191	0.090	2.123		0.034	Supported
$R^2_{Gamification}$=0.461; $R^2_{Behavioral\ Intention}$=0.503						

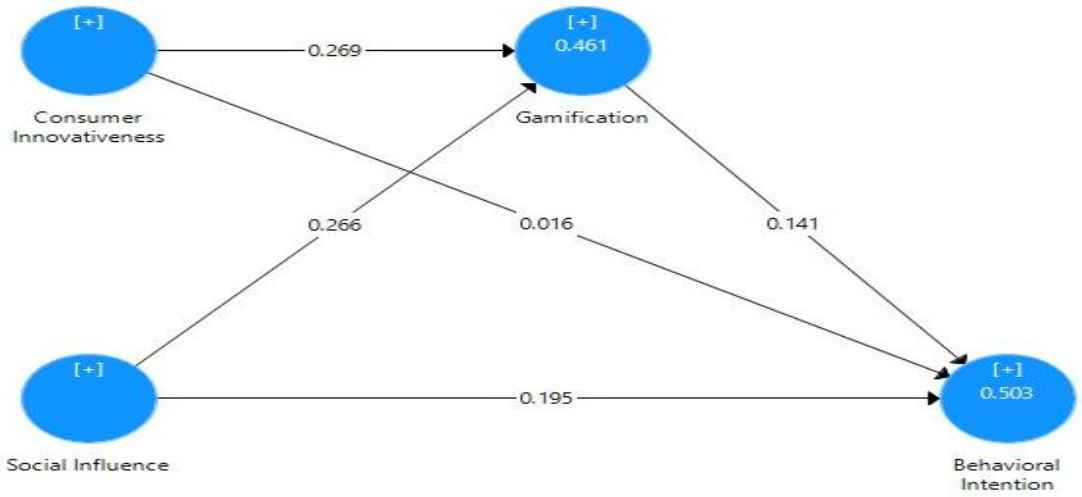

Figure 2. Structural Model

4. Conclusion

In this research, the relationships between service system non-users' behavioral intention to use the systems, and social influence, consumer innovativeness, and gamification have been analyzed within the context of airline passengers who did not have any membership in airline loyalty programs. Four different results were obtained within the context of this investigation.

First, the relationship between gamification and social influence and consumer innovativeness was tested. The analyses showed that social influence and consumer innovativeness affect the effectiveness of the gamification process for non-users. Based on social influence, those who do not utilize a service system or have not yet integrated it may be affected by the actions and attitudes of people who use the system, even in the absence of concrete benefits. As mentioned in the literature, social influence also contributes to non-users' experience of service systems by contributing to the operation of mechanics, which speeds up the processes of communicating the norms within the service systems to other community members and sharing and accepting them through game mechanics (Hamari & Eranti, 2011; Hamari & Koivisto, 2015a). Gamification practices, which lead to an increase in social interactions in the context of service systems, support value co-creation processes by enabling new members to participate in the system (Hamari & Koivisto, 2015a; Sesliokuyucu & Polat, 2021). On the other hand, consumer innovativeness enables people to identify and fulfill their needs and wants, match their activities with their beliefs, feel competent and independent, and interact with others. When exposed to novel sensations, experiences, messages, or things in their environment, consumers' cognitive and decision-making processes respond differently depending on how innovative the service is (San Martín & Herrero, 2012; Arica et al., 2022). It is a significant predictor of unplanned purchases (Floh & Madlberger, 2013; Yu et al., 2022). Consumers who are not innovators are more cautious and goal-focused when selecting new services than innovator consumers. Because they are aware of potential drawbacks and the loss that might follow from service risk, prevention-focused customers tend to avoid the risks connected with a service and its new qualities (Crowe & Higgins, 1997; Jin, 2016). As a result, consumer innovativeness could affect gamification process adoption and reduce the perceived risk of service system non-users while simultaneously raising their goal-focused behavior for the gamified service.

Second, the findings reveal that while social influence significantly affects behavioral intention, consumer

innovativeness does not. Social influence could be an effective tool to increase non-users of service systems' behavioral intention by affecting social comparison, and social validation. If consumers think that one or more significant referents agree that they should, then they can engage in a certain action (Yang et al., 2017). Consumers who have not yet used the service system can adopt new service systems by referencing close environments, and thus, the likelihood of non-users becoming regular users of the service system. Based on the literature another important and effective tool for behavioral intention is consumer innovativeness (e.g., Kim et al., 2017; Kamboj & Sharma, 2022). However, in this study consumer innovativeness had no significant effect on service system non-users' behavioral intentions. Depending on the service system's unique environment, the significance of consumer innovation may change. Consumer innovation may be less significant than practical factors in shaping behavioral intention in the case of service systems that are necessary for everyday living, such as transportation or healthcare. Except for customer innovativeness, other characteristics may be more significant predictors of behavioral intention among non-users. For instance, the determination of behavioral intention may be more significantly influenced by personal traits like age, wealth, and education. Since the service system is customized to the requirements and interests of the target audience, consumer innovativeness may not be a significant component in identifying behavioral intention in some service systems, such as an app created for older people.

Third, gamification has the potential to affect consumers' behavioral intention to utilize a service in the future or how likely they are to do so. The findings showed that gamification has a significant effect on the behavioral intentions of service system non-users. This result is in agreement with those of previous studies (García-Jurado et al., 2018; Uhm et al., 2022). Incorporating aspects such as feedback, competition, and choice can improve customer demand (autonomy, competence, and relatedness) and boost consumers' behavioral intention to use a service system. Consumers' perceptions of competence and relatedness were dramatically increased by gamification components, such as feedback and competition, which enhanced their propensity to utilize the service system. Additionally, giving customers a choice in gamified service systems boosted their perception of their own independence, which raised their inclination to utilize the service.

Finally, the study examined the mediating effect of gamification on the relationship between social influence and behavioral intention, consumer innovativeness, and behavioral intention. As a result, while the results showed that gamification mediates the relationship between service system non-users' consumer innovativeness and behavioral intention, it has no mediating effect on the relationship between social influence and behavioral intention. Gamification mediates the relationship between consumer innovativeness and behavioral intention by increasing non-users' motivation to engage in the service system. Challenges and incentives are examples of game design components that may enhance experience and motivate consumers to interact with the service system. Additionally, gamification can boost perceptions of behavioral control, which, in turn might affect behavioral intentions. By allowing consumers explicit feedback on their progress and increasing task transparency, game design components like points, badges, and leaderboards can improve users' perceptions of their ability to manage their behavior. Users are more inclined to engage in an activity when they believe that they have greater control over it (Hamari & Koivisto, 2015b; Hsu & Chen, 2021). In addition, gamification can mediate the relationship between social influence and behavioral intention in the presence of social interactions. However, the results showed that gamification had no mediating effect on this relationship. This result can be explained by the service system used in the study. These conclusions might be attributed to the fact that airline loyalty programs, such as leaderboards, are often created on an individual basis and do not include gamification aspects for comparison. Although social influence has a direct impact on gamification and intention to use, it is projected that because gamification procedures are not employed more efficiently, gamification does not mediate the link between social influence and behavioral intention. Loyalty programs permit more social benchmarking, which may help include most consumers in the airline service system.

This study's results have several practical implications. Gamification can significantly increase new passenger engagement, resulting in the inclusion of new consumer profiles. Managers can use this to increase their market share, bring in more revenue, and retain existing customers. Additionally, managers should concentrate on offering creative and entertaining gamification strategies to clients to influence their intentions to use the service favorably, as gamification mediates the relationship between consumer innovativeness and behavioral intention. They should also use social influence by enticing consumers to post about their gamification successes and experiences on social media to draw on new consumers and foster consumer loyalty. Integrating gamification techniques and social influence into the consumer service system can be a successful way to boost consumer engagement and loyalty and expand the market.

This study has several limitations. The major flaw of this research is that it only considers gamification from the standpoint of airline loyalty programs. The outcomes of various service systems may differ. In contrast, this research assessed people who did not use the service system. Future research could assess the impact of gamification on both users and non-users. As the data for this study were gathered from Türkiye, more data collection is necessary to make comparisons between various nations as well as to increase the scope of the sample in terms of age groups or cultural settings, which will help the findings be more broadly applicable. The results of this study were based on the information gathered through a survey. By adopting longitudinal and time-series research methods that provide further causal evidence, future research may supplement the findings of this investigation. Future research should use qualitative techniques to gain deeper insight and comprehension.

Ethical approval

The survey study was carried out with the approval number 2021/113-5 of Süleyman Demirel University Ethics Commission.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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