Spanish Journal of Marketing - ESIC

Playing to win: the impact of gamified loyalty programs in grocery retail

Paulo Rita
NOVA Information Management School (NOVA IMS) Universidade Nova de Lisboa, Lisboa, Portugal

Ricardo Ramos
Instituto Politécnico de Coimbra Escola Superior de Tecnologia e Gestão de Oliveira do Hospital, Oliveira do Hospital, Portugal; Research Center for Natural Resources Environment and Society, Coimbra, Portugal, and ISCTE-Instituto Universitario de Lisboa, Lisboa, Portugal

Pedro Miguel Oliveira
ISCTE-Instituto Universitario de Lisboa, Lisboa, Portugal, and Instituto Portugues de Administracao de Marketing de Lisboa, Lisboa, Portugal, and

Mariana Neves Simões
NOVA Information Management School (NOVA IMS) Universidade Nova de Lisboa, Lisboa, Portugal

Received 1 October 2024
Accepted 16 March 2026

Abstract

Purpose – This study aims to examine the effectiveness of gamified loyalty programs (GLPs) in the grocery retail industry, focusing on factors that influence their perceived benefits and their impact on customer satisfaction and loyalty.

Design/methodology/approach – Data was gathered from 203 users of a leading supermarket Card in Portugal's grocery sector via an online survey. The analysis used confirmatory factor analysis (CFA) and Structural Equation Modeling (SEM).

Findings – The study shows that monetary savings and convenience enhance perceived usefulness, while exploration negatively impacts it, likely due to the task-oriented nature of grocery shopping. Entertainment and social/recognition benefits are less influential.

Originality/value – The study establishes a positive link between ease of use, program satisfaction and customer loyalty. It pioneers the examination of GPLs in the grocery sector, using an adapted technology acceptance model (TAM) to provide new insights into the perceived usefulness and ease of use of gamified systems.

Keywords Grocery retail, Loyalty programs, Gamification, Technology acceptance model, Customer loyalty

Paper type Research paper

Funding: This work was supported by national funds through FCT (Fundação para a Ciência e a Tecnologia), under the project - UID/04152/2025 - Centro de Investigação em Gestão de Informação (MagIC)/NOVA IMS - https://doi.org/10.54499/UID/04152/2025 (2025-01-01/2028-12-31)

Spanish Journal of Marketing - ESIC
Emerald Publishing Limited
e-ISSN: 2444-9709
p-ISSN: 2444-9695
DOI 10.1108/SJME-10-2024-0276

Jugar Para ganar: El impacto de los programas de fidelización gamificados en el retail de alimentaci

Resumen

Objetivo – Este estudio examina la eficacia de los programas de fidelización gamificados (GLP) en el sector del retail de alimentación, centrándose en los factores que influyen en sus beneficios percibidos y en su impacto sobre la satisfacción y la lealtad del cliente.

Diseño – Los datos se recopilaron de 203 usuarios de la tarjeta de un supermercado líder en el sector de alimentación en Portugal mediante una encuesta online. El análisis se realizó utilizando Análisis Factorial Confirmatorio (AFC) y Modelización de Ecuaciones Estructurales (SEM).

Resultados – Los resultados muestran que el ahorro monetario y la conveniencia incrementan la utilidad percibida, mientras que la exploración la reduce, probablemente debido a la naturaleza orientada a la tarea de las compras de alimentación. Los beneficios de entretenimiento y los sociales/de reconocimiento resultan menos influyentes.

Originalidad/valor – El estudio establece una relación positiva entre la facilidad de uso, la satisfacción con el programa y la lealtad del cliente. Además, constituye una de las primeras investigaciones sobre GLP en el sector de alimentación, utilizando un modelo de aceptación tecnológica (TAM) adaptado para aportar nuevas perspectivas sobre la utilidad percibida y la facilidad de uso de los sistemas gamificados.

Palabras clave Retail de alimentación, Programas de fidelización, Gamificación, Modelo de aceptación tecnológica, Lealtad del cliente

Tipo de artículo Trabajo de investigación

为赢而玩：游戏化忠诚度计划在食品零售中的影响

摘要

研究目的 – 本研究探讨游戏化忠诚度计划（GLP）在食品零售行业中的有效性, 重点分析影响其感知收益的因素, 以及其对顾客满意度与忠诚度的影响。

研究设计 – 本研究通过在线问卷收集了葡萄牙食品零售行业某领先超市会员卡的203名用户数据, 并采用验证性因子分析（Cfa）和结构方程模型（ Sem）进行分析。

研究结果 – 研究表明, 金钱节省和便利性能够提升感知有用性, 而探索性则对其产生负向影响, 这可能与食品购物的任务导向特性有关。娱乐性以及社会/认同类收益的影响相对较弱。

研究价值 – 本研究发现, 易用性、项目满意度与顾客忠诚度之间存在显著的正向关系。此外, 本研究在食品零售领域率先探讨游戏化忠诚度计划, 并通过引入改进的技术接受模型（TAM）, 为理解游戏化系统的感知有用性和易用性提供了新的见解。

关键词 食品零售, 忠诚度计划, 游戏化, 技术接受模型, 顾客忠诚度

文章类型 研究型论文

1. Introduction

Customer loyalty is vital for success in any retail industry, including the grocery sector. However, grocery retailers face intense competition due to low switching costs and numerous factors influencing customer behavior, making it essential to enhance loyalty programs (LPs). This challenge is intensified by the static nature of many existing programs (Meyer-Waarden *et al.*, 2013). A growing innovative strategy is gamification, which integrates game elements into non-game contexts to engage and motivate consumers (Deterding *et al.*, 2011). Gamification has become a major driver of customer engagement, loyalty and retention, with its market expected to exceed USD 30 bn by 2026 (Bewicke, 2024) and triple by 2030 (Mordor Intelligence, 2025).

Retailers can strengthen consumer connection and loyalty by adding game-like features such as points, levels, challenges and rewards to the shopping experience

(Bauer *et al.*, 2020; Tobon *et al.*, 2020). This approach enhances engagement and drives sales by motivating purchases through rewards and recognition. For example, customers may earn points for each purchase, redeemable for discounts or offers, promoting repeat purchases and retention. Gamification also appeals to competitiveness and achievement, making shopping more exciting and personalized (Poncin *et al.*, 2017). Integrating game principles with retail strategies fosters an interactive, rewarding environment aligned with modern consumer expectations (Tobon *et al.*, 2020).

Extensive research has explored gamification across various sectors like service and brand (Hamari and Koivisto, 2015), product adoption (Müller-Stewens *et al.*, 2017), education (Putz *et al.*, 2020), online brand communities (Xi and Hamari, 2020) and retail (Hwang and Choi, 2020). Gamification positively influences brand attitude (Yang *et al.*, 2017), brand awareness (Lucassen and Jansen, 2014), brand engagement (Berger *et al.*, 2018), brand involvement (Nobre and Ferreira, 2017) and brand love (Hsu and Chen, 2018). However, while traditional LPs have been well studied, gamified versions remain less well understood (Hollebeek *et al.*, 2021). A research gap persists regarding the effects of gamification on LPs, especially in grocery retail. Prior studies often neglect customer perspectives and rely on experimental designs. The influence of gamified loyalty programs (GLPs) on satisfaction and loyalty in grocery retail remains underexplored (Xi and Hamari, 2019).

This study examines the perceived benefits of GLPs in grocery retail using the framework proposed by Mimouni-Chaabane and Volle (2010), which includes utilitarian, hedonic and symbolic benefits. It analyzes how these benefits influence satisfaction and loyalty. An online questionnaire was used and Covariance-based Structural Equation Modeling (CB-SEM) was used to test the hypotheses. The study aims to guide marketers in effectively applying gamification strategies for success.

2. Theoretical framework

2.1 Customer loyalty and grocery retail

Customer loyalty has attracted scholarly attention since the 1920s (Copeland, 1923). Although many academics have defined it, no single definition is universally accepted due to its complex, multifaceted nature. Conceptually, it is viewed from three angles: behavioral, attitudinal and composite perspectives (Cui *et al.*, 2023).

The grocery retail sector falls within the “always a share” category (Jackson, 1985), in which customers face low switching costs and shop across multiple stores depending on factors such as context, promotions and LPs (Meyer-Waarden and Benavent, 2009). This study adopts the attitudinal perspective, defining “loyal” customers as those who hold positive feelings toward a supermarket chain, recommend it to others and repeatedly purchase from it (Hallikainen *et al.*, 2022).

2.2 Loyalty programs and rewards

The likelihood of customers returning to a grocery store and making repeat purchases largely depends on satisfaction with prior experiences, often influenced by participation in a loyalty program (Rita *et al.*, 2023). LPs are marketing systems using diverse communication strategies to encourage repeat purchases and strengthen customer loyalty.

These programs offer various types of rewards, including economic, hedonistic, informational, functional and social or relational, while increasing switching costs (Meyer-Waarden *et al.*, 2013; Zhou *et al.*, 2023). Their main objectives are to create perceived benefits for customers, enhance economic decision-making and motivation and

boost preferred purchasing behaviors such as loyalty (Chaudhuri *et al.*, 2019; Meyer-Waarden *et al.*, 2013).

Card-based LPs are the most common in European grocery retailing (Sharp and Sharp, 1997) and globally, with 33% participation in 2024 (Statista, 2024). They usually operate by awarding points for purchases, recorded on a card and redeemable for rewards (Flacandji *et al.*, 2023). However, because most programs offer similar rewards, retailers face competitive parity (Uncles *et al.*, 2003) and must find new ways to differentiate. In 2023, Generation Z accounts for 55% of global consumers who benefit from grocery loyalty points, discounts or savings, while Millennials account for 57% (Statista, 2024). Moreover, 43% of Generation Z respondents joined a new loyalty program (Ozbun, 2024). A 2024 UK survey found that most shoppers owned a loyalty card or app, with 90% of those aged 18–34 reporting membership in supermarket LPs (Statista, 2024).

2.3 Perceived benefits of loyalty programs

Customers enroll in LPs only when perceived benefits outweigh costs (Zhou *et al.*, 2023). Initially, purchases may be driven by short-term "points pressure," while long-term loyalty develops through "rewarded behavior," as satisfaction from rewards reinforces buying habits (Taylor and Neslin, 2005). The perceived benefits of LPs are typically categorized as utilitarian, hedonic and symbolic (Loureiro *et al.*, 2025; Mimouni-Chaabane and Volle, 2010).

2.3.1 Utilitarian benefits: Monetary savings and convenience. Utilitarian benefits provide practical and functional value to customers (Bravo *et al.*, 2023). Researchers agree that customers highly value these benefits for their tangible nature, ease of understanding and evaluability (Kyguoliene *et al.*, 2017). Utilitarian motivation reflects a pragmatic, goal-driven orientation focused on functionality and efficient fulfillment of purchasing needs (Elmashhara *et al.*, 2024), described as "enabling the self" (Loureiro *et al.*, 2025). They include two key elements: monetary savings and convenience. A loyalty program's capacity to deliver monetary savings is a major incentive (Kim *et al.*, 2013). In grocery retailing, such benefits appear as discounts, coupons or cashback (Mimouni-Chaabane and Volle, 2010). Convenience benefits make shopping easier and more efficient by reducing search and decision costs through value-added services. Examples include quick payment counters, time-saving services and improved customer learning (Kyguoliene *et al.*, 2017).

2.3.2 Hedonic benefits: Exploration and entertainment. The second category, hedonic benefits, refers to the pleasurable aspects of exploratory consumer behavior, in which consumers seek stimulation that brings intrinsic gratification, arousal and emotion (Bravo *et al.*, 2023; Kim *et al.*, 2013). These benefits are expressed through exploration and entertainment dimensions and described as "enticing the self" (Loureiro *et al.*, 2025). They are linked to experience-oriented, sensory-rich shopping that involves imaginative and multisensory elements (Elmashhara *et al.*, 2024). Exploration benefits include trying new products and promotional offers, which may alter consumer behavior and habits (Kyguoliene *et al.*, 2017). Entertainment benefits stem from the enjoyment of rewards, such as collecting or redeeming points, participating in member-exclusive events or competitions and engaging in other activities (Kyguoliene *et al.*, 2017; Palamidovska-Sterjadovska *et al.*, 2024). Because humans are naturally drawn to entertainment, grocery retailers should provide sources of enjoyment to satisfy these desires (Kim *et al.*, 2019). Compared to utilitarian benefits, hedonic ones evoke stronger emotions and perform better in LPs with higher engagement requirements (Kaswengi

and Lambey-Checchin, 2019). LPs themselves can serve as entertainment, as customers gain pleasure from collecting and redeeming points and may experience self-fulfillment through participation (Agarwal *et al.*, 2022; Mimouni-Chaabane and Volle, 2010).

2.3.3 Symbolic benefits: Recognition and social relationships. The third and final category of benefits is symbolic benefits, which are intangible, extrinsic and unrelated to products. They satisfy customers' needs for recognition, personal expression, self-esteem and social approval (Agarwal *et al.*, 2022). When loyalty program members perceive belonging to a privileged group, their sense of social benefit and emotional engagement with the organization increases (Agarwal *et al.*, 2022; Mimouni-Chaabane and Volle, 2010).

Symbolic benefits can also be represented as "enriching the self" (Loureiro *et al.*, 2025), encompassing the self's temporal dimensions (past, present and future). Branded materials, such as apps, goals, stories or esthetics, provide symbolic benefits by fostering consumer–brand connection (Tseng *et al.*, 2021) and enabling self-expression and value alignment (Loureiro *et al.*, 2025). Product uniqueness often delivers these benefits (Calderón Urbina *et al.*, 2021) and motivates technology adoption (Raj *et al.*, 2024). Although less tangible, symbolic benefits are crucial for building brand trust and reputation (Raj *et al.*, 2024).

2.4 Gamification and customer loyalty

Gamification is the use of game design elements in non-game contexts (Deterding *et al.*, 2011). It is increasingly used in marketing as organizations seek to enhance the effectiveness of LPs through game-like features (Hollebeek *et al.*, 2021). To succeed, gamification must create a positive, meaningful and contextually integrated experience that satisfies intrinsic needs, leading to long-term benefits such as customer loyalty (Hollebeek *et al.*, 2021; Olsson *et al.*, 2016).

The context of application is crucial to the effectiveness of gamification (Hamari *et al.*, 2014). In grocery retail, largely experimental research has produced limited and mixed findings. Gaming does not always align with the utilitarian, task-oriented nature of grocery shopping, as it introduces unnecessary obstacles that may increase stress (Högberg, Ramberg *et al.*, 2019). The extra gamified tasks add to the overall stressfulness of the shopping experience. However, intrinsic motivation to play is positively related to satisfaction (Olsson *et al.*, 2016).

Despite gamification's rising popularity, research on GLPs remains limited, particularly concerning their characteristics, behavioral outcomes and overall effectiveness (Hwang and Choi, 2020).

2.5 Technology acceptance model and gamification

Davis *et al.* (1989) introduced the Technology Acceptance Model (TAM), an adaptation of the Theory of Reasoned Action, to examine users' attitudes and behavioral intentions toward software systems. TAM posits that technology adoption intention depends on two key factors: perceived ease of use and perceived usefulness. Perceived ease of use refers to the belief that using a system requires minimal effort, while perceived usefulness is the extent to which it improves task performance (Sipone *et al.*, 2023).

In this study, two technology acceptance variables are considered predictors of satisfaction in GLPs in grocery retail: (1) perceived usefulness which refers to the game's ability to deliver utilitarian, hedonic and symbolic benefits to the shopping experience and (2) perceived ease of use, which relies on the game's user-friendliness and simplicity of mechanics without complex instructions.

Although the original TAM proposed direct effects of ease of use and usefulness on attitudes (Davis, 1989), this study adopts an approach aligned with Alshammari and Babu (2025), integrating TAM with the Expectation-Confirmation Model (Bhattacherjee, 2001), which suggests that confirmation of technology usefulness drives user satisfaction.

2.6 Conceptual model and hypotheses

Monetary savings can foster intrinsic motivation by encouraging customers to engage in GLPs for personal benefit, such as optimizing their budget (Meyer-Waarden *et al.*, 2013), while the prospect of earning discounts generates extrinsic motivation. Thus, perceived usefulness reflects the extent to which customers believe gamification rewards, particularly economic ones, help achieve financial goals:

H1. Monetary savings positively influence the GLP's perceived usefulness.

Convenience benefits, such as effort reduction, can also create intrinsic motivation, prompting consumers to engage in GLPs for self-benefit (Meyer-Waarden *et al.*, 2013). Although grocery shopping is often stressful, introducing gamification can enhance satisfaction (Olsson *et al.*, 2016). When GLPs are implemented conveniently, making shopping less demanding, customers are more likely to perceive gamified features as useful:

H2. Convenience positively influences the perceived usefulness of gamified GLPs.

Exploration benefits from GLPs in grocery retail include useful information about new products, bargains and general offers. These benefits help customers feel more confident in their choices, fostering intrinsic motivation to engage with the games (Meyer-Waarden *et al.*, 2013). As they assist in making informed purchase decisions, exploration benefits are likely perceived as valuable:

H3. Exploration positively affects the GLP's perceived usefulness.

Research emphasizes entertainment as key to enhancing gamification effectiveness (Hamari *et al.*, 2014). Entertainment fosters emotional attachment between customers and the GLP, increasing its perceived usefulness. This link between entertainment and perceived usefulness has also been observed in other contexts, such as educational game design (Garris *et al.*, 2002):

H4. Entertainment positively influences the GLP's perceived usefulness.

Recognition and social benefits from GLPs make customers feel valued, fostering intrinsic motivation to participate and strengthening trust and commitment to the brand (Meyer-Waarden *et al.*, 2013). Thus, perceived usefulness reflects the extent to which users believe gamification features offer recognition and social status benefits, such as feeling privileged or appreciated as customers:

H5. Recognition and social factors positively affect the GLP's perceived usefulness.

GLP's success depends significantly on its ease of use; users are more likely to engage when rules and interfaces are intuitive and straightforward (Hamari and Koivisto, 2015). Prior studies confirm that perceived ease of use significantly influences perceived usefulness (Rodrigues *et al.*, 2016) and satisfaction (Tzavlopoulos *et al.*, 2019). In online shopping, ease of use enhances the overall customer experience and increases happiness (Nuralam *et al.*, 2024), consistent with findings by Calisir and Calisir (2004) in enterprise resource planning contexts:

H6. Perceived ease of use of the GLP positively influences perceived usefulness.

H7. Perceived ease of use of the GLP positively influences program satisfaction.

The perceived usefulness of a gamified loyalty program (GLP) is expected to positively influence satisfaction, as prior studies have shown that perceived usefulness can explain satisfaction in contexts such as mobile commerce (Lee and Jun, 2007). Perceived usefulness and customer satisfaction are key determinants of attitudes and behaviors in technology adoption (Chiu *et al.*, 2009; Martins *et al.*, 2014; Nuralam *et al.*, 2024) and are directly linked to users' perceived value (Revels *et al.*, 2010):

H8. Perceived usefulness of GLPs positively predicts program satisfaction.

When customers perceive a product or service as useful, it strengthens their relationship with it and encourages continued use, fostering loyalty (Coelho *et al.*, 2023). Conversely, if usefulness is not perceived, loyalty may decline. Thus, in the context of LPs, perceived usefulness plays a crucial role:

H9. Perceived usefulness of gamification positively influences customer loyalty.

Research has consistently shown that satisfaction is a major driver of loyalty (Pereira *et al.*, 2023). Meeting expectations increases satisfaction, which in turn boosts future purchase intentions (Parris and Guzmán, 2023). LPs in grocery retailing also demonstrate positive correlations between satisfaction and loyalty (Sreeram *et al.*, 2017). Customers satisfied with program rewards tend to be more loyal and less price sensitive. This satisfaction strengthens loyalty toward both the program and the store (Filipe *et al.*, 2017):

H10. Program satisfaction positively influences overall customer loyalty.

The hypothesized model is presented in Figure 1.

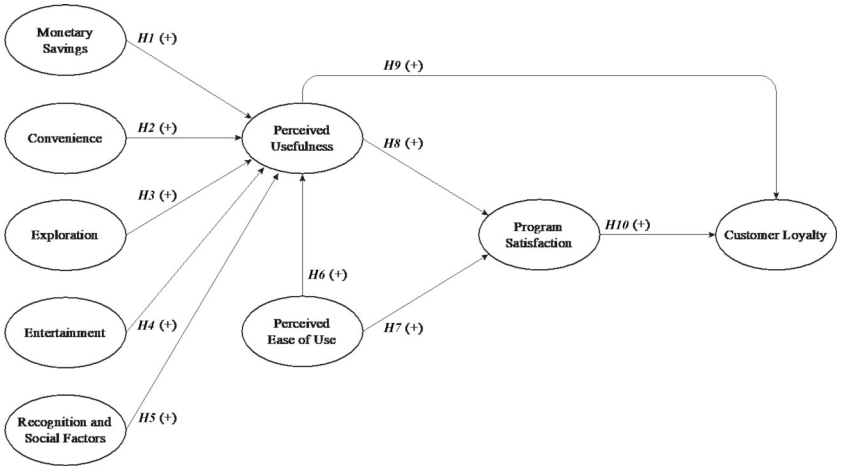

Figure 1. Conceptual model

3. Methodology

3.1 Research context

Continente is a leading Portuguese retail brand offering groceries, clothing, electronics and household goods. Its loyalty program, Cartão Continente (Continente Card), is the country's top loyalty card, with over 4 million active users (MC Sonae, 2022). Customers earn balances from purchases, which are redeemable for discounts. They can use a mobile app to track points, access personalized offers and find nearby stores.

The program integrates gamification through "Jogos da Poupança" (Savings Games), where customers complete challenges to earn rewards such as coupons. In 2022, more than 2.2 million customers used the Continente Card App and over 11 million prizes were distributed through the Savings Games (MC Sonae, 2023).

3.2 Sample and data collection

The target population for this study comprised adults aged 18 or older who held a Continente loyalty card, used the mobile application and participated in the Savings Games at least once. Accordingly, the questionnaire included screening questions to exclude individuals who did not meet these criteria.

Developed in Qualtrics, the questionnaire adapted measurement items from previous studies on perceived retail loyalty benefits (Kim *et al.*, 2013; Meyer-Waarden *et al.*, 2013; Mimouni-Chaabane and Volle, 2010), TAM (Davis, 1989; Hamari and Koivisto, 2015; Venkatesh and Davis, 2000), program satisfaction (Omar *et al.*, 2015) and customer loyalty (Meyer-Waarden *et al.*, 2013). All 32 items used a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree), consistent with research on loyalty and gamification (Kim *et al.*, 2013; Meyer-Waarden *et al.*, 2013). The complete questionnaire appears in Appendix.

It included an introduction outlining the study's objectives, data privacy, voluntary participation and assurances of anonymity. Participants confirmed informed consent, acknowledging voluntary participation and understanding of all provided details.

Before data collection, approval was obtained from the university's ethics committee. Data collection began only after receiving a favorable opinion.

A convenience sampling method was used, a common non-probabilistic approach for social media data collection (Vicente, 2023). The questionnaire link was shared via Facebook, Instagram and WhatsApp and respondents completed it independently.

Table 1 presents respondents' demographics ($n = 203$). The sample was gender-balanced, with 53.2% female and 45.3% male participants. Most respondents were under 35 years old, representing 86.7% of the total sample.

When a single instrument is used for data collection, variance may stem from the measurement method rather than from the constructs, a phenomenon known as common method variance (CMV) (Podsakoff *et al.*, 2003). Harman's single-factor test assesses CMV by performing an EFA, loading all observed variables onto a single unrotated factor. In this study, the single factor explained 40.041% of the variance, below the 50% threshold (Aguirre-Urreta and Hu, 2019). Thus, CMV is not considered a concern in this research.

3.3 Data analysis

This study used exploratory factor analysis (EFA), confirmatory factor analysis (CFA) and CB-SEM with maximum likelihood (ML) estimation, suitable for theory-driven and confirmatory research (Hair *et al.*, 2019, 2022). SEM assesses models in two stages: (1) the measurement model, using CFA to test factor specification and (2) the structural model, validating relationships among constructs (Dash and Paul, 2021; Sarstedt *et al.*, 2016). Data

Table 1. Composition of the sample ($n = 203$)

Variable	*N*	%
Gender		
Female	108	53.2
Male	92	45.3
Other	3	1.5
Age		
18–24	90	44.3
25–34	86	42.4
35–44	17	8.4
> 44	10	4.9

analysis was performed using SPSS 29, AMOS 29 and SmartPLS 4 (for preliminary data handling) (Ringle *et al.*, 2024).

4. Results

4.1 Measurement model

An EFA was conducted in SPSS 29 to confirm the factor structure (Hair *et al.*, 2019; Kautish *et al.*, 2025). The ML extraction method was used to ensure consistency with CFA and CB-SEM and the Promax oblique rotation allowed factor correlations. Bartlett's test of sphericity produced a chi-square (χ^2) of 4,164.45 with 378 degrees of freedom and p-value < 0.001, indicating suitability for factor analysis. The Kaiser-Meyer-Olkin (KMO) value was 0.911, above the 0.7 threshold, confirming sampling adequacy (Byrne, 2016).

CFA assessed the measurement model using ML estimation, testing construct reliability and validity (Hair *et al.*, 2019; Sivarajah *et al.*, 2024). Standardized factor loadings above 0.7 were required for reliability (Sarstedt *et al.*, 2022). Items PEOU2 and PEOU4 did not meet this criterion and were removed (Table 2). Internal consistency was confirmed, as Cronbach's alpha (CA) and composite reliability (CRρ_C) exceeded 0.7 (Hair *et al.*, 2019). Thus, the scales demonstrated good reliability for the underlying constructs. Validity was supported by average variance extracted (AVE) values above the 0.5 threshold for all latent variables (Hair *et al.*, 2019).

For discriminant validity evaluation, the Fornell–Larcker (FL) criterion was computed (Fornell and Larcker, 1981) and verified for all constructs, as the square root of every construct's AVE is higher than its correlation with the remaining constructs in a model (see Table 3). Additionally, the heterotrait-monotrait (HTMT) ratio of correlations, proposed by Henseler *et al.* (2015), was used to assess discriminant validity, given its robustness and reliability relative to the FL criterion (Franke and Sarstedt, 2019). According to Table 4, the HTMT method corroborated the FL criterion's conclusion regarding discriminant validity, as all HTMT ratios of correlations are below the recommended, more conservative threshold of 0.85 (Franke and Sarstedt, 2019).

The measurement model's goodness of fit was evaluated using absolute, incremental and parsimonious fit measures based on CFA (Dash and Paul, 2021). The absolute indexes evaluate the theoretical model against observed data, while incremental fit measures compare the hypothesized model to a baseline with no meaningful relationships between constructs. As for parsimonious indexes, they introduce the tradeoff between model fit and degrees of freedom, penalizing complex models with more parameters. According to Table 5, the

Table 2. Measurement scales validity and reliability results

Constructs	Item	Mean (SD)	Standardized loadings	CA	CR(ρ_C)	AVE
Convenience	CONV1	3.197 (1.183)	0.868	0.928	0.927	0.812
	CONV2	3.414 (1.058)	0.916			
	CONV3	3.241 (1.099)	0.919			
Entertainment	ENT1	4.163 (1.035)	0.847	0.863	0.863	0.676
	ENT2	4.182 (0.963)	0.823			
	ENT3	4.202 (0.949)	0.796			
Exploration	EXP1	3.507 (0.928)	0.889	0.877	0.872	0.676
	EXP2	3.389 (0.993)	0.791			
	EXP3	3.389 (0.921)	0.822			
	EXP4	3.507 (0.944)	+			
Customer loyalty	LOY1	4.414 (1.063)	0.822	0.826	0.824	0.704
	LOY2	4.399 (0.959)	0.855			
	LOY3	3.941 (0.991)	+			
	LOY4	4.015 (1.112)	+			
Monetary savings	MON1	4.158 (1.029)	0.811	0.878	0.878	0.707
	MON2	4.187 (1.019)	0.876			
	MON3	4.172 (1.039)	0.835			
Perceived ease of use	PEOU1	4.468 (0.984)	0.902	0.818	0.817	0.701
	PEOU2	4.015 (1.094)	*			
	PEOU3	4.177 (1.073)	0.766			
	PEOU4	3.946 (1.023)	*			
Perceived usefulness	PU1	3.897 (1.229)	+	0.739	0.740	0.588
	PU2	3.936 (1.110)	0.797			
	PU3	3.626 (1.144)	0.735			
	PU4	3.522 (1.124)	+			
	PU5	4.020 (1.027)	+			
Program satisfaction	SAT1	4.502 (0.850)	0.879	0.894	0.891	0.735
	SAT2	3.990 (0.993)	0.854			
	SAT3	4.089 (0.994)	0.839			
Recognition and social factors	SOC1	2.099 (0.666)	0.774	0.851	0.851	0.657
	SOC2	2.079 (0.638)	0.822			
	SOC3	2.099 (0.659)	0.834			

Note(s): *items removed as corresponding factor loadings were below the cutoff value of 0.70 (Hair *et al.*, 2022). + items were removed due to the significant standardized residual covariances between them.
CA = Cronbach's alpha; CR(ρ_C) = Composite Reliability ρ_C; AVE = Average Variance Extracted; SD = Standard Deviation

measures indicate reasonable model fit, as the index values fall within the recommended thresholds. Only the chi-square test is non-significant (p-value < 0.05) due to its sensitivity to sample size; therefore, model fit assessment should not rely solely on this test but should be complemented with other measures (Kline, 2023).

4.2 Structural model

A similar reasonable structural model fit was obtained (see Table 5). According to the R^2 values, the model demonstrated good explanatory power, accounting for 94.9% of the variability in perceived usefulness, 64.4% of the variability in program satisfaction and 69.4% of the variability in customer loyalty.

Table 3. Discriminant validity | Fornell-Larcker criterion

Construct	CONV	ENT	EXP	LOY	MON	PEOU	PU	SAT	SOC
CONV	*0.901*								
ENT	0.293	*0.822*							
EXP	0.824	0.383	*0.835*						
LOY	0.428	0.688	0.406	*0.839*					
MON	0.446	0.579	0.446	0.629	*0.841*				
PEOU	0.360	0.801	0.401	0.698	0.571	*0.837*			
PU	0.498	0.722	0.370	0.664	0.719	0.785	*0.767*		
SAT	0.476	0.606	0.354	0.801	0.622	0.681	0.747	*0.857*	
SOC	0.467	0.331	0.515	0.281	0.076	0.202	0.222	0.230	*0.810*

Note(s): (1) CONV = convenience; ENT = entertainment; EXP = exploration; LOY = customer loyalty; MON = monetary savings; PEOU = perceived ease of use; PU = perceived usefulness; SAT = program satisfaction; SOC = recognition and social factors. (2) values in the diagonal correspond to the square root of the construct AVE and the remaining values correspond to its correlation with the remaining constructs

Table 4. Discriminant validity | HTMT ratio of correlations

Construct	CONV	ENT	EXP	LOY	MON	PEOU	PU	SAT	SOC
CONV	–								
ENT	0.293	–							
EXP	0.812	0.375	–						
LOY	0.422	0.677	0.398	–					
MON	0.446	0.572	0.451	0.632	–				
PEOU	0.320	0.805	0.370	0.695	0.532	–			
PU	0.512	0.729	0.377	0.661	0.711	0.773	–		
SAT	0.474	0.601	0.349	0.798	0.622	0.670	0.745	–	
SOC	0.467	0.330	0.503	0.278	0.105	0.202	0.238	0.235	–

Note(s): CONV = convenience; ENT = entertainment; EXP = exploration; LOY = customer loyalty; MON = monetary savings; PEOU = perceived ease of use; PU = perceived usefulness; SAT = program satisfaction; SOC = recognition and social factors

A bootstrapping procedure with 10,000 resamples was conducted to estimate the model's path coefficients (β), determine their significance and relevance and evaluate explanatory power (Hair *et al.*, 2019). For the path's significance analysis, the p-values were determined using a two-tailed test and analyzed against a significance level of 5%.

Monetary savings ($\beta_1 = 0.365$, $p = 0.011$), convenience ($\beta_2 = 0.489$, $p = 0.005$) and exploration ($\beta_3 = -0.470$, $p = 0.019$) significantly affect perceived usefulness, supporting hypotheses *H1*, *H2* and *H3* (see Table 6). However, neither entertainment ($\beta_4 = 0.175$, $p = 0.461$) nor recognition and social factors ($\beta_5 = 0.110$, $p = 0.331$) were deemed significant. Hence, *H4* and *H5* were not supported in this study.

The path coefficient for the relationship between perceived ease of use and perceived usefulness ($\beta_6 = 0.500$, $p = 0.046$) was found to be positive and statistically significant, supporting *H6*. Inversely, *H7* was not supported as the relationship between perceived ease of use and program satisfaction was deemed not significant ($\beta_7 = -0.022$, $p = 0.948$).

Hypothesis *H8* was deemed positive and statistically significant ($\beta_8 = 0.821$, $p = 0.009$), validating the relationship between perceived usefulness and program

Table 5. Goodness of fit indexes

Index type	Index	Measurement model	Structural model	Ideal thresholds
Absolute fit measures	χ^2 (p-value)	348.987 (0.000)	343.350 (0.000)	p-value > 0.05 (Hair *et al.*, 2019)
	χ^2/df	1.616	1.675	≤ 5.0 (Schumacker and Lomax, 2010)
	SRMR	0.040	0.043	≤ 0.08 (Hu and Bentler, 1999)
	RMSEA	0.055	0.058	≤ 0.08 (Hooper *et al.*, 2008)
Incremental fit measures	TLI	0.950	0.948	≥ 0.90 (Hair *et al.*, 2019)
	NFI	0.906	0.902	≥ 0.90 (Hu and Bentler, 1999)
	CFI	0.961	0.958	≥ 0.90 (Schumacker and Lomax, 2010)
Parsimonious fit measures	PGFI	0.627	0.646	≥ 0.50 (Bentler and Bonett, 1980)

Note(s): CFI = comparative fit index; *df* = degrees of freedom; NFI = normed fit index; PGFI = parsimonious goodness of fit index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual; TLI = Tucker-Lewis index

Table 6. Structural model bootstrap results

Hypothesis	Paths	Std. β	p-value	Decision
H1	MON → PU	0.365	0.011*	Supported
H2	CONV → PU	0.489	0.005**	Supported
H3	EXP → PU	−0.470	0.019*	Partially supported
H4	ENT → PU	0.175	$0.461^{n.s.}$	Not supported
H5	SOC → PU	0.110	$0.331^{n.s.}$	Not supported
H6	PEOU → PU	0.500	0.046*	Supported
H7	PEOU → SAT	−0.022	$0.948^{n.s.}$	Not supported
H8	PU → SAT	0.821	0.009**	Supported
H9	PU → LOY	0.384	$0.119^{n.s.}$	Not supported
H10	SAT → LOY	0.493	0.048*	Supported

Note(s): *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; n.s. = not significant. CONV = convenience; ENT = entertainment; EXP = exploration; LOY = customer loyalty; MON = monetary savings; PEOU = perceived ease of use; PU = perceived usefulness; SAT = program satisfaction; SOC = recognition and social factors

satisfaction. Moreover, the direct effect of perceived usefulness on customer loyalty (*H9*) was not significant ($\beta_9 = 0.384$, $p = 0.119$), whereas the indirect effect mediated by program satisfaction was significant ($9 = 0.384$, $p = 0.119$). The relationship between program satisfaction and customer loyalty (*H10*) was positive and significant ($\beta_{10} = 0.493$, $p = 0.048$).

4.3 Discussion

Hypotheses *H1* and *H2* were deemed significant. The utilitarian benefits of monetary savings and convenience positively influence the perceived usefulness of GLPs, serving as significant drivers of perceived benefits in GLPs. This emphasizes the greater value customers place on utilitarian benefits (Kyguoliene *et al.*, 2017), which is justified by the product- and task-oriented nature of grocery shopping (Vieira *et al.*, 2018).

Regarding the hedonic benefits, only exploration was found to have a significant yet negative influence on the perceived usefulness of GLPs, partially supporting *H3*. Even though this hypothesis was found to be significant, the relationship between exploration and perceived usefulness is symmetric with the hypothesized relationship. This suggests that exploring and discovering new information through GLPs may not directly contribute to customers perceiving them as valuable, leading to the opposite reaction. It is plausible that the utilitarian nature of this retailer may not align with the exploration obstacles introduced by gamification (Högberg, Shams *et al.*, 2019), which can be perceived as barriers to achieving the shopping trip's goal. Nevertheless, the influence of entertainment on perceived usefulness was deemed not significant, failing to support *H4*. This indicates that customers may prioritize utilitarian aspects over entertainment in grocery retail settings, which aligns with prior research (Kyguoliene *et al.*, 2017). These findings are even more noteworthy, given that 86.7% of participants were under 35 years old. Contrary to previous studies indicating an inverse relationship between age and hedonic value (Carpenter and Moore, 2009), these young consumers demonstrated a higher preference for utilitarian benefits over hedonic ones.

The hypothesized relationship between recognition, social factors and perceived usefulness was not significant, which does not support *H5*. Therefore, a direct contribution to the perceived usefulness of gamified grocery retail LPs is absent, as was the case with entertainment. The grocery shopping context is predominantly utilitarian and task-oriented (Vieira *et al.*, 2018), where customers focus on completing their shopping efficiently rather than seeking social recognition or status through a loyalty program.

The significance of the relationship between the two key TAM constructs, perceived ease of use and perceived usefulness, confirms *H6* and corroborates the findings from extensive prior research (Davis, 1989; Rodrigues *et al.*, 2016). Therefore, the gamification of grocery retail LPs is effective when the system is also perceived as easy to use.

H7 (PEOU → SAT) was deemed not significant. Customer satisfaction with a service or technology tends to be positively influenced by perceived ease of use (Revels *et al.*, 2010). Still, it is also found to depend on how frequently a system is used (Nuralam *et al.*, 2024). In our study, the significant representation of young individuals in the sample, who tend not to use retailers' LPs, may strongly suggest a lack of alignment regarding the effect of perceived ease of use on program satisfaction.

The finding related to *H8* (PU → SAT) is aligned with other studies (Calisir and Calisir, 2004; Lee, 2012; Nuralam *et al.*, 2024). Consumers may become dissatisfied if they perceive that a gamified feature in a grocery retail program will not significantly improve their shopping experience (Sheetal *et al.*, 2023).

Hypothesis *H9* (PU → LOY) failed to be supported in our study but is still aligned with the findings by Al-Hattami *et al.* (2023). A possible reason for this result may be the unique context of grocery shopping, which is primarily driven by convenience, price, product quality and availability, rather than by the added value of gamification (Kaswengi and Lambey-Checchin, 2019).

Finally, *H10* (SAT → LOY) revealed a statistically significant, positive correlation, aligning with the literature (Manyanga *et al.*, 2022; Wilson *et al.*, 2021). This suggests that customers who are satisfied with the gamified loyalty program are more likely to exhibit higher loyalty toward the retailer (Sheetal *et al.*, 2023).

5. Conclusions

This research aimed to investigate the impact of GLPs on customer loyalty within the grocery retail industry. The study focused on elucidating the interplay among perceived

benefits, usefulness, ease of use, program satisfaction and customer loyalty. The findings confirmed 6 out of the 10 proposed hypotheses, providing overall validation of the research model. To sum up, the major contributions of this research are as follows:

First, this study represents a pioneering effort in the field by focusing on the perceived benefits that matter to customers in the context of GLPs. While previous studies have explored the concept of GLPs (Hwang and Choi, 2020) or the role of customer engagement in GLP performance (Hollebeek *et al.*, 2021), this study adopts a novel approach by examining the specific factors that influence program satisfaction and customer loyalty from the customer's perspective. Second, it filled a crucial gap by focusing on a very particular context: grocery retail. While LPs have been extensively studied and proven successful in this sector (Zhou *et al.*, 2023), the incorporation of gamification strategies has received limited attention. The results emphasize the significance of utilitarian benefits, such as savings and convenience, while underscoring the potential challenges of incorporating exploratory elements in this setting. Third, this study makes a valuable contribution to the existing body of knowledge by reinforcing the validity of the TAM framework. The findings underscore the importance of perceived usefulness and ease of use in shaping customer perceptions and promoting loyalty.

5.1 Theoretical implications

The study provides significant theoretical contributions to understanding GLPs in the grocery retail sector. It highlights the effectiveness of GLPs, emphasizing factors such as monetary savings and convenience that enhance their perceived usefulness, while noting the negative impact of exploration due to the task-oriented nature of grocery shopping. Additionally, it establishes a positive relationship between ease of use, program satisfaction and customer loyalty, underlining the importance of user-friendly interfaces. By adapting the TAM to this context, the study offers new insights into the perceived usefulness and ease of use of gamified systems. This research enriches the literature on gamification and customer loyalty in retail, providing practical implications for designing and implementing effective LPs in the grocery sector.

As digitalization increases, most retailers' LPs are shifting from the physical to mobile apps, strengthening the analogy between LPs and technology adoption.

Table 7 summarizes the research conclusions and implications.

5.2 Managerial implications

Our findings have significant implications for grocery retailers seeking to implement or effectively manage GLPs. First, managers should prioritize utilitarian benefits over hedonic or symbolic ones through the reward system (Behl and Pereira, 2021). While incorporating entertainment elements can enhance the program's appeal, it is essential to ensure that it effectively meets customers' needs, enhances their shopping experience and provides tangible benefits such as cost savings and convenience.

In addition, retailers should focus on optimizing the purchasing experience by streamlining the delivery of gamified information. It is crucial to provide relevant, tailored information that aligns with customers' preferences and needs, rather than overwhelming them with excessive or irrelevant information in a stressful scenario. When incorporating informational and exploratory elements, it is crucial to prioritize practicality and efficiency while providing individuals with personalized, engaging, gamified experiences. The focus should be on creating a seamless and user-friendly interface that caters to each user's needs and preferences. By balancing practicality and personalization, gamified experiences can be optimized to enhance program satisfaction and customer loyalty.

Table 7. Conclusions, theoretical and managerial implications

Conclusions	Theoretical and managerial implications
Utilitarian benefits (particularly monetary savings and convenience) significantly increase the perceived usefulness of gamified loyalty programs in grocery retail	Loyalty programs should prioritize tangible economic value and shopping efficiency, as these benefits are the primary drivers of perceived usefulness in utilitarian retail contexts
Exploration-based gamification negatively influences perceived usefulness in grocery shopping	Gamification features should be simple, goal-oriented and frictionless, avoiding mechanisms that disrupt efficient task completion
Entertainment and social recognition do not significantly influence perceived usefulness	In grocery retail, functional value outweighs hedonic and symbolic incentives, suggesting that gamification strategies must align with the utilitarian nature of shopping
Perceived ease of use increases perceived usefulness, which in turn strongly enhances program satisfaction	Retailers should invest in intuitive, user-friendly loyalty apps that seamlessly integrate gamified elements into the shopping journey
Program satisfaction is the key driver of customer loyalty, mediating the relationship between usefulness and loyalty	Managers should focus on creating useful and satisfying loyalty experiences, as satisfaction (not gamification alone) ultimately drives customer loyalty

5.3 Limitations and future research

Despite the valuable contributions of this study, several limitations should be acknowledged and addressed in future research. First, the study focused on a specific gamified loyalty program in grocery retailing, limiting the generalizability of the findings. Future research should consider incorporating competitor programs and measuring their relative performance.

Second, the study relied on self-reported data, which may have introduced response biases or social desirability effects. Future research should explore alternative methods and data sources to complement self-reported data and mitigate these biases.

Third, the data collected for this research predominantly consisted of individuals under 35, which may compromise the generalizability of the study's findings. The results and loyalty program adherence may differ somewhat with a more diverse sample, particularly with respect to age ranges. Additionally, no questions were included in the questionnaire to characterize participants' shopping behavior by retailer, channel/platform or frequency. Future research should include a more diverse and representative sample, using a random sampling technique that encompasses a broader age range, to ensure the validity and robustness of inferences for the population.

Moreover, the research excluded all individuals who did not participate in any retailer's loyalty program. Future research may compare individuals' perceptions of these programs, segmenting the sample by shopping behaviors and program adherence.

Finally, the study did not consider the customers' profiles (e.g. hedonic or utilitarian shoppers). Future research could explore how different customer profiles influence the effectiveness and perceived benefits of GLPs.

Statement of contribution

This research enriches the literature on gamification and customer loyalty in retail and provides practical implications for designing and implementing effective LPs in the grocery sector. It focuses on the effectiveness of GLPs, emphasizing factors such as monetary savings and

convenience that enhance perceived usefulness, establishes a positive correlation between ease of use, program satisfaction and customer loyalty and offers new insights into the perceived usefulness and ease of use of gamified systems.

References

Agarwal, R., Mehrotra, A. and Misra, D. (2022), "Customer happiness as a function of perceived loyalty program benefits - A quantile regression approach", *Journal of Retailing and Consumer Services*, Vol. 64, p. 102770.

Aguirre-Urreta, M.I. and Hu, J. (2019), "Detecting common method bias: Performance of the harman's Single-Factor test", *ACM SIGMIS Database: The DATABASE for Advances in Information Systems*, Vol. 50 No. 2, pp. 45-70.

Al-Hattami, H.M., Al-Adwan, A.S., Abdullah, A.A.H. and Al-Hakimi, M.A. (2023), "Determinants of customer loyalty toward mobile wallet services in Post-COVID-19: the moderating role of trust", *Human Behavior and Emerging Technologies*, Vol. 2023, pp. 1-13.

Alshammari, S.H. and Babu, E. (2025), "The mediating role of satisfaction in the relationship between perceived usefulness, perceived ease of use and students' behavioural intention to use ChatGPT", *Scientific Reports*, Vol. 15 No. 1, p. 7169.

Bauer, J.C., Linzmajer, M., Nagengast, L., Rudolph, T. and D'Cruz, E. (2020), "Gamifying the digital shopping experience: games without monetary participation incentives increase customer satisfaction and loyalty", *Journal of Service Management*, Vol. 31 No. 3, pp. 563-595.

Behl, A. and Pereira, V. (2021), "What's behind a scratch card? Designing a mobile application using gamification to study customer loyalty: an experimental approach", *Australasian Journal of Information Systems*, Vol. 25.

Bentler, P.M. and Bonett, D.G. (1980), "Significance tests and goodness of fit in the analysis of covariance structures", *Psychological Bulletin*, Vol. 88 No. 3, pp. 588-606.

Berger, A., Schlager, T., Sprott, D.E. and Herrmann, A. (2018), "Gamified interactions: whether, when, and how games facilitate self–brand connections", *Journal of the Academy of Marketing Science*, Vol. 46 No. 4, pp. 652-673.

Bewicke, H. (2024), "9 Excellent examples of gamification in retail | talon. One", Talon.One, available at: www.talon.one/blog/9-excellent-examples-gamification-retail (accessed 25 July 2025).

Bhattacherjee, A. (2001), "Understanding information systems continuance: an Expectation-Confirmation model", *MIS Quarterly*, Vol. 25 No. 3, p. 351.

Bravo, R., Catalán, S. and Pina, J.M. (2023), "The impact of gamified loyalty programs on customer engagement behaviors. A hotel industry application", *Journal of Hospitality and Tourism Technology*, Vol. 14 No. 5, pp. 925-940.

Byrne, B.M. (2016), *Structural Equation Modeling with Amos: Basic Concepts, Applications, and Programming*, 3rd ed. Routledge, Taylor and Francis Group, New York, New York.

Calderón Urbina, S.D., Stamatogiannakis, A. and Goncalves, D. (2021), "Consumers' choices between products with different uniqueness duration", *European Journal of Marketing, Emerald*, Vol. 55 No. 13, pp. 148-176.

Calisir, F. and Calisir, F. (2004), "The relation of interface usability characteristics, perceived usefulness, and perceived ease of use to end-user satisfaction with enterprise resource planning (ERP) systems", *Computers in Human Behavior*, Vol. 20 No. 4, pp. 505-515.

Carpenter, J.M. and Moore, M. (2009), "Utilitarian and hedonic shopping value in the US discount sector", *Journal of Retailing and Consumer Services*, Vol. 16 No. 1, pp. 68-74.

Chaudhuri, M., Voorhees, C.M. and Beck, J.M. (2019), "The effects of loyalty program introduction and design on short- and long-term sales and gross profits", *Journal of the Academy of Marketing Science*, Vol. 47 No. 4, pp. 640-658.

Chiu, C.-M., Lin, H.-Y., Sun, S.-Y. and Hsu, M.-H. (2009), "Understanding customers' loyalty intentions towards online shopping: an integration of technology acceptance model and fairness theory", *Behavior and Information Technology*, Vol. 28 No. 4, pp. 347-360.

Coelho, P., Rita, P. and Ramos, R.F. (2023), "How the response to service incidents change customer–firm relationships", *European Journal of Management and Business Economics*, Vol. 32 No. 2, pp. 168-184.

Copeland, M.T. (1923), "Relation of consumers' buying habits to marketing methods", *Harvard Business Review*, Vol. 1 No. 2, pp. 282-289.

Cui, L., He, S., Deng, H. and Wang, X. (2023), "Sustaining customer loyalty of fresh food e-tailers: an empirical study in China", *Asia Pacific Journal of Marketing and Logistics*, Vol. 35 No. 3, pp. 669-686.

Dash, G. and Paul, J. (2021), "CB-SEM versus PLS-SEM methods for research in social sciences and technology forecasting", *Technological Forecasting and Social Change*, Vol. 173, p. 121092.

Davis, F.D. (1989), "Perceived usefulness, perceived ease of use, and user acceptance of information technology", *MIS Quarterly*, Vol. 13 No. 3, p. 319.

Davis, F.D., Bagozzi, R.P. and Warshaw, P.R. (1989), "User acceptance of computer technology: a comparison of two theoretical models", *Management Science*, Vol. 35 No. 8, pp. 982-1003.

Deterding, S., Dixon, D., Khaled, R. and Nacke, L. (2011), "From game design elements to gamefulness: defining 'gamification", *Proceedings of the 15th International Academic MindTrek Conference: Envisioning Future Media Environments*, *presented at the MindTrek '11: Academic MindTrek 2011*, *ACM*, *Tampere Finland*, pp. 9-15, doi: 10.1145/2181037.2181040.

Elmashhara, M.G., De Cicco, R., Silva, S.C., Hammerschmidt, M. and Silva, M.L. (2024), "How gamifying AI shapes customer motivation, engagement, and purchase behavior", *Psychology and Marketing*, Vol. 41 No. 1, pp. 134-150.

Filipe, S., Marques, S.H. and Salgueiro, M.D.F. (2017), "Customers' relationship with their grocery store: Direct and moderating effects from store format and loyalty programs", *Journal of Retailing and Consumer Services*, Vol. 37, pp. 78-88.

Flacandji, M., Passebois Ducros, J. and Ieva, M. (2023), "Redesigning loyalty marketing for a better world: the impact of green loyalty programs on perceived value", *Journal of Service Theory and Practice*, Vol. 33 No. 4, pp. 465-487.

Fornell, C. and Larcker, D.F. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, Vol. 18 No. 1, pp. 39-50.

Franke, G. and Sarstedt, M. (2019), "Heuristics versus statistics in discriminant validity testing: a comparison of four procedures", *Internet Research*, Vol. 29 No. 3, pp. 430-447.

Garris, R., Ahlers, R. and Driskell, J.E. (2002), "Games, motivation, and learning: a research and practice model", *Simulation and Gaming*, Vol. 33 No. 4, pp. 441-467.

Hair, J.F., Black, W.C., Babin, B.J. and Anderson, R.E. (2019), *Multivariate Data Analysis*, 8th ed. Cengage, Andover, Hampshire.

Hair, J.F., Hult, G.T.M., Ringle, C.M. and Sarstedt, M. (2022), *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*, 3rd ed. SAGE, Thousand Oaks.

Hallikainen, H., Luongo, M., Dhir, A. and Laukkanen, T. (2022), "Consequences of personalized product recommendations and price promotions in online grocery shopping", *Journal of Retailing and Consumer Services*, Vol. 69, p. 103088.

Hamari, J. and Koivisto, J. (2015), "Why do people use gamification services?", *International Journal of Information Management*, Vol. 35 No. 4, pp. 419-431.

Hamari, J., Koivisto, J. and Sarsa, H. (2014), "Does gamification work? A literature review of empirical studies on gamification", *2014 47th Hawaii International Conference on System Sciences*, *presented at the 2014 47th Hawaii International Conference on System Sciences (HICSS)*, *IEEE*, Waikoloa, HI, pp. 3025-3034, doi: 10.1109/hicss.2014.377.

Henseler, J., Ringle, C.M. and Sarstedt, M. (2015), "A new criterion for assessing discriminant validity in variance-based structural equation modeling", *Journal of the Academy of Marketing Science*, Vol. 43 No. 1, pp. 115-135.

Högberg, J., Ramberg, M.O., Gustafsson, A. and Wästlund, E. (2019), "Creating brand engagement through in-store gamified customer experiences", *Journal of Retailing and Consumer Services*, Vol. 50, pp. 122-130.

Högberg, J., Shams, P. and Wästlund, E. (2019), "Gamified in-store mobile marketing: the mixed effect of gamified point-of-purchase advertising", *Journal of Retailing and Consumer Services*, Vol. 50, pp. 298-304.

Hollebeek, L.D., Sprott, D.E. and Brady, M.K. (2021), "Rise of the machines? Customer engagement in automated service interactions", *Journal of Service Research*, Vol. 24 No. 1, pp. 3-8.

Hooper, D., Coughlan, J. and Mullen, M. (2008), "Structural equation modelling: Guidelines for determining model fit", *Electronic Journal of Business Research Methods*, Vol. 6 No. 1, pp. 53-60.

Hsu, C.-L. and Chen, M.-C. (2018), "How gamification marketing activities motivate desirable consumer behaviors: Focusing on the role of brand love", *Computers in Human Behavior*, Vol. 88, pp. 121-133.

Hu, L. and Bentler, P.M. (1999), "Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives", *Structural Equation Modeling: A Multidisciplinary Journal*, Vol. 6 No. 1, pp. 1-55.

Hwang, J. and Choi, L. (2020), "Having fun while receiving rewards?: exploration of gamification in loyalty programs for consumer loyalty", *Journal of Business Research*, Vol. 106, pp. 365-376.

Jackson, B.B. (1985), "Build customer relationships that last", *Harvard Business Review*, Vol. 63, pp. 120-128.

Kaswengi, J. and Lambey-Checchin, C. (2019), "How logistics service quality and product quality matter in the retailer–customer relationship of food drive-through: the role of perceived convenience", *International Journal of Physical Distribution and Logistics Management*, Vol. 50 No. 5, pp. 535-555.

Kautish, P., Lim, W.M. and Lavuri, R. (2025), "Values, wellbeing, and job satisfaction in telework: Evidence from IT-enabled service firms", *Technology in Society*, Vol. 80, p. 102762.

Kim, H.-Y., Lee, J.Y., Choi, D., Wu, J. and Johnson, K.K.P. (2013), "Perceived benefits of retail loyalty programs: Their effects on program loyalty and customer loyalty", *Journal of Relationship Marketing*, Vol. 12 No. 2, pp. 95-113.

Kim, S., Ham, S., Moon, H., Chua, B.-L. and Han, H. (2019), "Experience, brand prestige, perceived value (functional, hedonic, social, and financial), and loyalty among GROCERANT customers", *International Journal of Hospitality Management*, Vol. 77, pp. 169-177.

Kline, R.B. (2023), *Principles and Practice of Structural Equation Modeling*, 5th ed. The Guilford Press, New York, New York.

Kyguoliene, A., Zikiene, K. and Grigaliunaite, V. (2017), "The influence of perceived benefits on the satisfaction with the loyalty program", *Engineering Economics*, Vol. 28 No. 1.

Lee, B.C.Y. (2012), "The determinants of consumer attitude toward service innovation – the evidence of ETC system in Taiwan", *Journal of Services Marketing*, Vol. 26 No. 1, pp. 9-19.

Lee, T. and Jun, J. (2007), "Contextual perceived value?: investigating the role of contextual marketing for customer relationship management in a mobile commerce context", edited by Schierholz, R", *Business Process Management Journal*, Vol. 13 No. 6, pp. 798-814.

Loureiro, S.M.C., Guerreiro, J., Friedmann, E., Lee, M.J. and Han, H. (2025), "Tourists and artificial intelligence-LLM interaction: the power of forgiveness", *Current Issues in Tourism*, Vol. 28 No. 7, pp. 1172-1190.

Lucassen, G. and Jansen, S. (2014), "Gamification in consumer Marketing - Future or fallacy?", *Procedia - Social and Behavioral Sciences*, Vol. 148, pp. 194-202.

Manyanga, W., Makanyeza, C. and Muranda, Z. (2022), "The effect of customer experience, customer satisfaction and word of mouth intention on customer loyalty: The moderating role of consumer demographics", *Cogent Business and Management*, Vol. 9 No. 1, p. 2082015.

Martins, C., Oliveira, T. and Popovič, A. (2014), "Understanding the internet banking adoption: a unified theory of acceptance and use of technology and perceived risk application", *International Journal of Information Management*, Vol. 34 No. 1, pp. 1-13.

MC Sonae (2022), "4 Million Portuguese took advantage of continente card benefits", MC Sonae, available at: https://mc.sonae.pt/en/news/continente-card-in-2021-4-million-portuguese-continente-card-users-saved-not-only-on-their-purchases-but-much-more/ (accessed 24 July 2025).

MC Sonae (2023), "Todos os clientes do cartão continente receberam um resumo personalizado do seu ano", MC Sonae, available at: https://mc.sonae.pt/noticias/todos-os-clientes-do-cartao-continente-receberam-um-resumo-personalizado-do-seu-ano/ (accessed 24 July 2025).

Meyer-Waarden, L. and Benavent, C. (2009), "Grocery retail loyalty program effects: self-selection or purchase behavior change?", *Journal of the Academy of Marketing Science*, Vol. 37 No. 3, pp. 345-358.

Meyer-Waarden, L., Benavent, C. and Castéran, H. (2013), "The effects of purchase orientations on perceived loyalty programs' benefits and loyalty", *International Journal of Retail and Distribution Management*, Vol. 41 No. 3, pp. 201-225.

Mimouni-Chaabane, A. and Volle, P. (2010), "Perceived benefits of loyalty programs: Scale development and implications for relational strategies", *Journal of Business Research*, Vol. 63 No. 1, pp. 32-37.

Mordor Intelligence (2025), "Gamification market size and share Analysis - Growth trends and forecasts (2025 - 2030)", Mordor Intelligence, available at: www.mordorintelligence.com/industry-reports/gamification-market (accessed 25 July 2025).

Müller-Stewens, J., Schlager, T., Häubl, G. and Herrmann, A. (2017), "Gamified information presentation and consumer adoption of product innovations", *Journal of Marketing*, Vol. 81 No. 2, pp. 8-24.

Nobre, H. and Ferreira, A. (2017), "Gamification as a platform for brand co-creation experiences", *Journal of Brand Management*, Vol. 24 No. 4, pp. 349-361.

Nuralam, I.P., Yudiono, N., Fahmi, M.R.A., Yuliaji, E.S. and Hidayat, T. (2024), "Perceived ease of use, perceived usefulness, and customer satisfaction as driving factors on repurchase intention: the perspective of the e-commerce market in Indonesia", *Cogent Business and Management*, Vol. 11 No. 1, p. 2413376.

Olsson, M., Hogberg, J., Wastlund, E. and Gustafsson, A. (2016), "In-Store gamification: Testing a Location-Based treasure hunt app in a real retailing environment", *2016 49th Hawaii International Conference on System Sciences (HICSS), presented at the 2016 49th Hawaii International Conference on System Sciences (HICSS), IEEE, Koloa, HI, USA*, pp. 1634-1641, doi: 10.1109/hicss.2016.206.

Omar, N.A., Mohd Ramly, S., Shah Alam, S. and Azrin Nazri, M. (2015), "Penilaian kesan manfaat program kesetiaan dalam hubungan Kepuasan-Kesetiaan: Bukti empirikal di Malaysia", *Jurnal Pengurusan*, Vol. 43, pp. 145-159.

Ozbun, T. (2024), "Supermarket loyalty programs - statistics and facts", Statista, available at: www.statista.com/topics/13067/supermarket-loyalty-programs/ (accessed 26 July 2025).

Palamidovska-Sterjadovska, N., Prodanova, J. and Ciunova-Shuleska, A. (2024), "Why do customers value m-banking apps? A stimulus-organism-response perspective", *Spanish Journal of Marketing - ESIC*, Vol. 28 No. 4, pp. 481-499.

Parris, D.L. and Guzmán, F. (2023), "Evolving brand boundaries and expectations: looking back on brand equity, brand loyalty, and brand image research to move forward", *Journal of Product and Brand Management*, Vol. 32 No. 2, pp. 191-234.

Pereira, F., Costa, J.M., Ramos, R. and Raimundo, A. (2023), "The impact of the COVID-19 pandemic on airlines' passenger satisfaction", *Journal of Air Transport Management*, Vol. 112, p. 102441.

Podsakoff, P.M., MacKenzie, S.B., Lee, J.-Y. and Podsakoff, N.P. (2003), "Common method biases in behavioral research: a critical review of the literature and recommended remedies", *Journal of Applied Psychology*, Vol. 88 No. 5, pp. 879-903.

Poncin, I., Garnier, M., Ben Mimoun, M.S. and Leclercq, T. (2017), "Smart technologies and shopping experience: Are gamification interfaces effective? The case of the smartstore", *Technological Forecasting and Social Change*, Vol. 124, pp. 320-331.

Putz, L.-M., Hofbauer, F. and Treiblmaier, H. (2020), "Can gamification help to improve education? Findings from a longitudinal study", *Computers in Human Behavior*, Vol. 110, p. 106392.

Raj, A., Shukla, D., Quadir, A. and Sharma, P. (2024), "What drives the adoption of digital technology in the micro, small, and medium enterprises sector in a developing economy?", *Journal of Business and Industrial Marketing*, Vol. 39 No. 9, pp. 1984-2002.

Revels, J., Tojib, D. and Tsarenko, Y. (2010), "Understanding consumer intention to use mobile services", *Australasian Marketing Journal*, Vol. 18 No. 2, pp. 74-80.

Ringle, C.M., Wende, S. and Becker, J.-M. (2024), *SmartPLS*, SmartPLS GmbH, Bönningstedt.

Rita, P., Borges-Tiago, M.T. and Caetano, J. (2023), "The theory-practice research gains from big data: evidence from hospitality loyalty programs", *International Journal of Contemporary Hospitality Management*, Vol. 35 No. 12, pp. 4486-4501.

Rodrigues, L.F., Oliveira, A. and Costa, C.J. (2016), "Does ease-of-use contributes to the perception of enjoyment? A case of gamification in e-banking", *Computers in Human Behavior*, Vol. 61, pp. 114-126.

Sarstedt, M., Hair, J.F., Ringle, C.M., Thiele, K.O. and Gudergan, S.P. (2016), "Estimation issues with PLS and CBSEM: Where the bias lies!", *Journal of Business Research*, Vol. 69 No. 10, pp. 3998-4010.

Sarstedt, M., Ringle, C.M. and Hair, J.F. (2022), "Partial least squares structural equation modeling", in Homburg, C., Klarmann, M. and Vomberg, A. (Eds), *Handbook of Market Research*, Springer International Publishing, Cham, pp. 587-632.

Schumacker, R.E. and Lomax, R.G. (2010), *A Beginner's Guide to Structural Equation Modeling*, 3rd ed. Routledge, New York, NY, USA.

Sharp, B. and Sharp, A. (1997), "Loyalty programs and their impact on repeat-purchase loyalty patterns", *International Journal of Research in Marketing*, Vol. 14 No. 5, pp. 473-486.

Sheetal, Tyagi, R. and Singh, G. (2023), "Gamification and customer experience in online retail: a qualitative study focusing on ethical perspective", *Asian Journal of Business Ethics*, Vol. 12 No. 1, pp. 49-69.

Sipone, S., Abella, V., Rojo, M. and Moura, J.L. (2023), "Sustainable mobility learning: Technological acceptance model for gamified experience with ClassCraft in primary school", *Education and Information Technologies*, Vol. 28 No. 12, pp. 16177-16200.

Sivarajah, U., Kumar, S., Kumar, V., Chatterjee, S. and Li, J. (2024), "A study on big data analytics and innovation: from technological and business cycle perspectives", *Technological Forecasting and Social Change*, Vol. 202, p. 123328.

Sreeram, A., Kesharwani, A. and Desai, S. (2017), "Factors affecting satisfaction and loyalty in online grocery shopping: an integrated model", *Journal of Indian Business Research*, Vol. 9 No. 2, pp. 107-132.

Statista (2024), *Supermarket Loyalty Programs*, Statista, p. 51.

Taylor, G.A. and Neslin, S.A. (2005), "The current and future sales impact of a retail frequency reward program", *Journal of Retailing*, Vol. 81 No. 4, pp. 293-305.

Tobon, S., Ruiz-Alba, J.L. and García-Madariaga, J. (2020), "Gamification and online consumer decisions: is the game over?", *Decision Support Systems*, Vol. 128, p. 113167.

Tseng, T.H., Hsieh, S.H. and Lee, C.T. (2021), "How gamified branded applications drive marketing effectiveness?", *Marketing Intelligence and Planning*, Vol. 39 No. 5, pp. 633-648.

Tzavlopoulos, Gotzamani, K., Andronikidis, A. and Vassiliadis, C., I (2019), "Determining the impact of e-commerce quality on customers' perceived risk, satisfaction, value and loyalty", *International Journal of Quality and Service Sciences*, Vol. 11 No. 4, pp. 576-587.

Uncles, M.D., Dowling, G.R. and Hammond, K. (2003), "Customer loyalty and customer loyalty programs", *Journal of Consumer Marketing*, Vol. 20 No. 4, pp. 294-316.

Venkatesh, V. and Davis, F.D. (2000), "A theoretical extension of the technology acceptance model: Four longitudinal field studies", *Management Science, Institute for Operations Research and the Management Sciences (INFORMS)*, Vol. 46 No. 2, pp. 186-204.

Vicente, P. (2023), "Sampling twitter users for social science research: evidence from a systematic review of the literature", *Quality and Quantity*, Vol. 57 No. 6, pp. 5449-5489.

Vieira, V., Santini, F.O. and Araujo, C.F. (2018), "A meta-analytic review of hedonic and utilitarian shopping values", *Journal of Consumer Marketing*, Vol. 35 No. 4, pp. 426-437.

Wilson, N., Keni, K. and Tan, P.H.P. (2021), "The role of perceived usefulness and perceived ease-of-use toward satisfaction and trust which influence computer consumers' loyalty in China", *Gadjah Mada International Journal of Business*, Vol. 23 No. 3, p. 262.

Xi, N. and Hamari, J. (2019), "Does gamification satisfy needs? A study on the relationship between gamification features and intrinsic need satisfaction", *International Journal of Information Management*, Vol. 46, pp. 210-221.

Xi, N. and Hamari, J. (2020), "Does gamification affect brand engagement and equity? A study in online brand communities", *Journal of Business Research*, Vol. 109, pp. 449-460.

Yang, Y., Asaad, Y. and Dwivedi, Y. (2017), "Examining the impact of gamification on intention of engagement and brand attitude in the marketing context", *Computers in Human Behavior*, Vol. 73, pp. 459-469.

Zhou, Y., Lu, C. and Yu, Y. (2023), "Reward me or charity: the impact of mobile e-commerce platforms' loyalty program reward types on participation intention", *Asia Pacific Journal of Marketing and Logistics*, Vol. 35 No. 9, pp. 2122-2144.

Appendix

Table A1. Measurement scales

Construct	Codes	Items	Sources
Monetary savings		Because I participate in cartão continente's games:	Adapted from Kim *et al.* (2013); Mimouni-Chaabane and Volle (2010)
	MON1	I shop at a lower financial cost	
	MON2	I spend less	
	MON3	I save money	
Convenience		Participating in cartão continente's games…	Adapted from Meyer-Waarden *et al.* (2013)
	CONV1	Allows me to find more easily my usually bought products	
	CONV2	Grants me additional services	
	CONV3	Makes purchases easier and more practical	
Exploration		Participating in continente's games…	Adapted from Kim *et al.* (2013); Mimouni-Chaabane and Volle (2010); Meyer-Waarden *et al.* (2013)
	EXP1	Allows me to discover good bargains and new products	
	EXP2	Allows me to discover products I would not have discovered otherwise	
	EXP3	Allows me to be well-informed about news and general information	
	EXP4	Makes me choose new products	
Entertainment	ENT1	Collecting my discount coupons after the games is entertaining	Adapted from Kim *et al.* (2013); Mimouni-Chaabane and Volle (2010)
	ENT2	Collecting my discount coupons after the games is enjoyable	
	ENT3	When I collect my discount coupons after the games, I feel good	
Recognition and social factors		Participating in continente's games…	Adapted from Meyer-Waarden *et al.* (2013)
	SOC1	It makes me feel like the store is paying more attention to me than others	
	SOC2	It makes me adhere to a group of privileged customers	
	SOC3	It makes the store treat me like a privileged customer	
Perceived usefulness	PU1	Participating in games makes it easier for me to do my grocery shopping	Adapted from Davis *et al.*, 1989); Hamari and Koivisto (2015)
	PU2	Participating in games is useful during my grocery shopping	
	PU3	Participating in games allows me to accomplish more regarding my grocery shopping	
	PU4	I feel more effective concerning grocery shopping when participating in games	
Perceived ease of use	PEOU1	Participating in games while grocery shopping is clear and easy to understand	Adapted from Venkatesh and Davis (2000); Hamari and Koivisto (2015)
	PEOU2	I find that participating in games while grocery shopping is easy	

(*continued*)

Table A1. Continued

Construct	Codes	Items	Sources
	PEOU3	Participating in games while grocery shopping does not require much mental effort	
	PEOU4	I find it easy to follow the procedures of the games while grocery shopping	
Program satisfaction	SAT1	I am satisfied with cartão continente	Adapted from Omar *et al.* (2015)
	SAT2	Cartão continente always meets my expectations	
	SAT3	My experience with cartão continente is excellent	
Customer loyalty	LOY1	I visit continente more frequently than other retail stores	Adapted from Meyer-Waarden *et al.* (2013)
	LOY2	In the near future, I will surely purchase from continente	
	LOY3	I would recommend continente to others	
	LOY4	I make most of my purchases from continente	

Corresponding author
Paulo Rita can be contacted at: prita@novaims.unl.pt