

GAMIFIED CUSTOMER EXPERIENCE IN MOBILE APPLICATIONS: INSIGHTS FROM CONTENT AND SENTIMENT ANALYSIS

Magdalena BRZOZOWSKA-WOŚ

Gdańsk University of Technology; magdalena.brzozowska-wos@zie.pg.edu.pl, ORCID: 0000-0002-8433-0685

Purpose: This paper investigates the role of gamification in shaping user engagement, satisfaction, and loyalty in mobile applications. Using the Żappka app, a leading gamified loyalty platform in Poland, as a case study, it explores how users perceive and respond to game-based features across digital environments.

Design/methodology/approach: The study employs a qualitative case study methodology, analysing 1900 user-generated comments collected between January 2023 and June 2025 from five platforms: Google Play, App Store, Facebook, Instagram, and TikTok. The dataset was manually curated, thematically coded using TAGuette, and evaluated for sentiment using MonkeyLearn and interaction-based signals (e.g., reactions, likes). The analysis was grounded in Self-Determination Theory and supported by principles of content analysis.

Findings: Gamified elements, such as personalized missions, points, and surprise rewards, consistently elicited positive emotional responses, enhanced perceived value, and increased interaction frequency. Negative sentiment clustered around app instability, reward errors, and customer support issues. User feedback varied by platform, with app stores highlighting functional concerns, while social media revealed emotional and relational dynamics.

Research limitations and implications: The findings are context-specific, as they are based on a single national market and a single loyalty application. Future research should extend the analysis to other sectors, markets, and include behavioral or longitudinal data to examine changes over time.

Practical implications: The results demonstrate that clearly structured and emotionally rewarding gamification can strengthen user engagement and brand trust. The Żappka case offers actionable guidance on integrating gamification into app UX design, customer communication, and loyalty strategy.

Social implications: User-generated feedback on gamified platforms reflects a shift toward participatory, co-created brand experiences. The study highlights how digital consumers actively shape service quality and brand perception through discourse and emotional signaling.

Originality/value: By combining sentiment and thematic analysis across app stores and social media, this research offers a holistic, user-centered perspective on gamification in real-world digital ecosystems. It contributes to the literature on loyalty programs, UX, and digital co-creation by mapping how users experience, evaluate, and communicate gamified features.

Keywords: gamification, user engagement, mobile loyalty app, customer experience, user-generated content, digital retail.

Category of the paper: Research paper.

1. Introduction

In recent years, the evolution of mobile technologies and data-driven personalization has led to a transformation in how brands engage with consumers. Loyalty applications, once limited to point collection and basic discounts, now serve as interactive ecosystems that integrate user experience (UX), real-time feedback, and gamification. This shift reflects a growing emphasis on relational loyalty, where emotional engagement and the co-creation of long-term value become key competitive advantages (Morgan, Hunt, 1994; Hwang, Choi, 2020).

At the heart of this transformation lies gamification, defined as the use of game design elements in non-game contexts to influence behaviour and increase motivation (Deterding et al., 2011). When aligned with users' psychological needs, gamification significantly enhances engagement, satisfaction, and loyalty (Hamari, Koivisto, Sarsa, 2014). This effect is often explained through Self-Determination Theory (SDT), which posits that motivation improves when systems support autonomy, competence, and relatedness (Deci, Ryan, 2013). For example, progress bars and levels foster a sense of competence. Personalized missions support autonomy. Social challenges or leaderboards strengthen feelings of relatedness (Sailer et al., 2017; Tondello et al., 2016).

Empirical studies further support these mechanisms. Mekler et al. (2017) demonstrated that points and badges increase motivation primarily when they align with meaningful tasks. Paschmann et al. (2025) showed that reward-based gamification outperforms traditional price promotions in mobile apps. Ramdhani and Hussein (2024) found that gamification mediates loyalty through increased brand awareness.

Despite growing academic interest in gamification, much of the existing research focuses on experimental designs or survey data, rather than on actual game implementations. There is limited understanding of how users spontaneously describe and evaluate gamified features in natural digital environments. Platforms such as TikTok, Instagram, or Facebook offer valuable insights into user behaviour, emotional reactions, and brand interactions through public discourse and user-generated content (Li et al., 2022; Naeem, Okafor, 2019).

This study aims to address this gap by analysing the Żappka mobile application, a gamified loyalty app developed by the Żabka retail chain in Poland. Żappka incorporates a wide array of gamification features—point systems (Żappsy), narrative missions, interface personalization, and surprise rewards—making it one of the most advanced retail apps in Central and Eastern Europe. Its extensive user base and strong presence across social media platforms make it a compelling subject for examining the real-world applications of gamification.

The goal of this paper is to investigate how gamified features in Żappka affect user engagement and customer experience. Using a qualitative case study approach, this analysis examines 1496 user comments retrieved from Google Play, App Store, Facebook, Instagram,

and TikTok, posted between January 2023 and June 2025. The comments were analysed using content and sentiment analysis techniques. The study draws upon Self-Determination Theory and Relationship Marketing Theory as its interpretive frameworks.

The paper is structured as follows. It begins with a theoretical overview of gamification and motivational psychology, followed by a case description of the Žappka mobile application. The following section outlines the research methodology, including data sources, sampling strategies, and analytical procedures. A presentation of the key findings from the sentiment and content analysis follows this. The discussion section interprets these results in light of existing literature. The article then addresses limitations and proposes directions for future research. It concludes with a summary of key insights and practical implications.

2. Literature Review

Gamification has become a widely adopted strategy across digital platforms, particularly in the retail and mobile application sectors. It draws upon psychological theories to increase user engagement, motivation, and loyalty. Among the most influential theoretical frameworks is the Self-Determination Theory (SDT), which identifies autonomy, competence, and relatedness as fundamental psychological needs (Deci, Ryan, 2000; Ryan, Deci, 2000). When these needs are satisfied, individuals are more likely to exhibit sustained motivation and commitment.

Huotari and Hamari (2017) offer a foundational definition of gamification, describing it as “a process of enhancing a service with affordances for gameful experiences to support users’ overall value creation”. Their approach shifts the focus from isolated game elements to the broader experiential and service-oriented outcomes of gamification. This perspective is instrumental in the context of mobile applications, where user engagement is driven not only by external rewards but also by immersive and meaningful experiences.

In marketing and customer engagement, gamification has been shown to influence both short-term behaviors (e.g., increased app visits) and long-term loyalty outcomes (Hamari, Koivisto, 2015; Mekler et al., 2017). Hamari, Koivisto, and Sarsa (2014) provide strong empirical support for the effectiveness of gamification across multiple domains in their comprehensive literature review. Werbach and Hunter (2012) also emphasize how basic game mechanics, such as points, levels, and feedback loops, can create compelling value propositions for both users and businesses.

Recent empirical work by Paschmann et al. (2025) further refines our understanding of mobile gamification, showing that specific design choices can significantly impact user engagement metrics. Their findings highlight how integrating gamification within loyalty apps can influence both emotional connection and transactional behavior.

Research by Sailer et al. (2017) highlights the correlation between specific game elements, such as points, badges, leaderboards, and missions, and the satisfaction of psychological needs. For example, badges can reinforce competence, while missions can foster autonomy and independence. These design elements, when aligned with psychological foundations, contribute to a more meaningful and motivating user experience.

Table 1 below synthesizes core gamification elements and their associated psychological mechanisms and marketing outcomes. These elements were selected based on their prominence in the academic literature, relevance to mobile loyalty programs, and empirical support for their motivational effects. The framework not only provides theoretical clarity but also operational guidance for the study's empirical phase. It informs the thematic and sentiment analysis by linking observable user reactions to the psychological and strategic functions of each gamified feature.

Table 1.

Core Gamification Elements, Psychological Foundations, and Marketing Outcomes

Gamification Element	Psychological Basis (SDT / Motivation)	Expected Marketing Outcome	Sources
Points & Levels	Competence	Increased engagement and repeat usage	Werbach, Hunter (2012); Hamari et al. (2014)
Badges & Rewards	Competence, Extrinsic Motivation	Short-term satisfaction and motivation	Mekler et al. (2017); Paschmann et al. (2025)
Leaderboards	Relatedness, Competition	Competitive drive, peer comparison, and brand attachment	Tondello et al. (2016); Koivisto, Hamari (2019)
Narrative & Challenges	Autonomy, Flow	Deep immersion, emotional resonance	Deterding et al. (2011); Sailer et al. (2017)
Personalized Recommendations	Autonomy, Relevance	Perceived value and user satisfaction	Xu et al. (2015); Hwang, Choi (2020)
Feedback / Progress Indicators	Competence	Visible growth, motivation through clarity	Hamari et al. (2014); Högberg et al. (2019)
Social Sharing / Community	Relatedness	Word-of-mouth, social bonding, viral app growth	Ramdhani, Hussein (2024); Pagano, Maalej (2013)

Source: own elaboration.

This theoretical foundation helps to contextualize the empirical analysis of the Żappka app. By linking design features to established motivational theories and behavioral outcomes, the study provides a framework for interpreting user responses to gamified features across digital and social platforms.

3. Case Description: The Żappka Mobile Application

Żappka is the proprietary mobile application of Żabka, one of Poland's largest convenience store chains, with over 9000 locations nationwide (Żabka Group, 2023). Introduced in 2019, the app rapidly became a central component of the brand's digital transformation strategy, reaching over 10 million downloads by 2024 (Google Play, n.d.; App Store, n.d.). It is consistently ranked among the top retail apps in the Polish market (Android.com.pl, 2024).

From its inception, the Żappka app was designed not only as a functional tool for managing purchases and loyalty but also as an engagement-driven platform that reflects gamification principles. Its core functionalities include digital receipts, personalized offers via the "Żappka Post" feature (Żabka Polska, 2020), product search, store locator, and a loyalty system built around Żapps points accumulated through purchases and interactions. These points can be exchanged for discounts or exclusive rewards.

A key gamified feature is the "Misja Żappka" (Mission Żappka) module, which assigns users voluntary tasks such as "Buy two drinks this week" or "Try a vegetarian product." Completion of these missions yields bonus Żapps and access to new reward tiers (Tabletowo.pl, 2024). The missions are dynamic and time-sensitive, resetting weekly to encourage regular interaction and behavioral reinforcement.

Additional mechanisms include progressive levels, visualized through status tiers and progress bars, which signal advancement and offer symbolic recognition. Visual and audio feedback, such as animations, confetti bursts, and sound cues, accompany task completion. These elements foster a sense of competence and achievement, aligning closely with the motivational needs described in Self-Determination Theory (Deci, Ryan, 2013).

Further gamified components include badges for milestones, daily log-in bonuses, and personalized "Żappka Post" offers that simulate surprise-and-delight dynamics. Push notifications are used to maintain engagement, often framed in playful, friendly language consistent with the brand's youthful tone (Żabka Polska, n.d.-a). Interface design features bold visuals, avatars, and micro interactions that reinforce game-like cues (Wiadomości Handlowe, 2024).

Żappka's ecosystem extends beyond the app. The brand maintains an active omnichannel presence on TikTok, Instagram, Facebook, and YouTube, where it promotes challenges, influencer content, and user-generated memes (Żabka Polska, n.d.-b; Żabka Polska, n.d.-c). These platforms act as extensions of the app's gamified environment, cultivating emotional bonds and social engagement. For instance, viral TikTok posts often reference Żappka missions or joke about status levels, indicating cultural resonance beyond functional use.

Importantly, the Żappka app is also essential for accessing Żabka Nano stores – automated, staffless convenience locations that require app-based entry and digital payment. These stores extend the gamified customer journey into the physical retail environment while enhancing brand identity as an innovator in retail technology (Nano.Żabka.pl, 2025).

This case was selected due to several distinctive features: (1) Żappka's comprehensive integration of gamification into both app design and brand communication, (2) the availability of diverse, spontaneous user-generated content (UGC) across digital platforms, and (3) its relevance as an example of digital retail innovation in Central and Eastern Europe. Moreover, Żappka's gamification strategy reflects both extrinsic incentives (rewards, discounts) and intrinsic motivators (autonomy, mastery, relatedness), offering a fertile ground for examining how gamified loyalty programs are received and interpreted by users in real-world settings.

4. Methodology

This paper adopts a qualitative case study approach to investigate user perceptions of gamified features in the Żappka mobile application and their impact on customer experience. The study relies on natural language data, specifically user-generated content (UGC), which reflects real-time opinions, emotions, and expectations.

The dataset includes 1900 user comments collected between January 2023 and June 2025 from five platforms: Google Play and App Store (400), Facebook (200), Instagram (600), and TikTok (800). These channels were selected due to their popularity and complementary communication dynamics. App store reviews tend to focus on technical and functional aspects, while social media platforms offer more emotional and interactive feedback. The combination supports data triangulation, enhancing the reliability of findings.

For app store reviews, 200 comments were randomly selected from each platform (Google Play and App Store), using a simple random sampling method within the defined time frame (January 2023 – June 2025). Sampling was limited to Polish-language reviews only. Despite the significant difference in total review volume between platforms (approximately 188,000 reviews on Google Play vs. 64,000 on the App Store as of June 2025), the sample was intentionally balanced (50% per platform).

This proportional decision was informed by prior studies in software engineering and app store mining (Pagano, Maalej, 2013; Martin et al., 2017), which demonstrate that smaller, balanced qualitative samples can still yield meaningful comparative insights. Equal distribution also helped control for overrepresentation bias and facilitated thematic symmetry across platforms, which was essential for sentiment analysis and theory-driven coding.

After initial retrieval, all user comments were manually screened and filtered for relevance. From the original 400 app store reviews, 260 were retained after removing duplicates, blank entries, off-topic remarks, and content lacking evaluative language. A similar data-cleaning process was applied to social media content. The resulting corpus was then organized thematically and prepared for two-stage analysis.

The selection criteria across all platforms included originality, relevance to app usage, and references to gamification-related elements (e.g., points, missions, rewards, challenges). Duplicated posts, brand-generated content, emoji-only comments, spam, and advertisements were excluded to ensure thematic consistency. All comments were manually collected from public sources and exported into a comma-separated values (CSV) format for cleaning and organization.

In the first stage, comments were coded using TAGuette, a qualitative data annotation tool. Coding followed principles of inductive content analysis (Krippendorff, 2018), supplemented by the thematic analysis framework outlined by Braun and Clarke (2006). This involved open coding, category generation, and axial mapping. Emerging codes were aligned with key constructs from Self-Determination Theory (Deci, Ryan, 2013), especially autonomy, competence, and relatedness, as well as Relationship Marketing Theory (Morgan, Hunt, 1994), which emphasizes trust, value co-creation, and emotional engagement.

In the second stage, sentiment analysis was conducted using MonkeyLearn, a no-code machine learning platform for text classification. Comments were automatically labelled as positive, neutral, or negative. Where the classification algorithm showed low confidence or ambiguity, results were manually reviewed and reclassified to maintain interpretive accuracy.

For social media data, platform-specific filtering and sampling protocols were applied:

- On Facebook, 177 comments were selected from public threads on the Żabka Polska page. In addition to textual analysis, reaction types (e.g., "like", "heart", "angry") were interpreted as auxiliary sentiment cues, especially for ambiguous or emotionally implicit statements.
- On Instagram, 204 comments were chosen from over 600 responses to official posts and story interactions. Since Instagram does not support comment reactions, the number of likes per comment served as a proxy for resonance and peer approval.
- On TikTok, 772 comments were selected from the brand's 30 most popular videos. Like counts were again used as indicators of resonance. Thematic areas included tutorial responses, feature feedback, and brand–user interaction (e.g., public replies and Q&A formats).

A single researcher conducted all coding and interpretation. To enhance analytical rigor, the process was carefully documented through memoing, iterative coding, and refinement of the codebook. Although no formal inter-rater reliability analysis was conducted, emphasis was placed on internal consistency, methodological transparency, and the traceability of interpretive decisions.

No personal data was processed. All comments were public, anonymized, and analysed under ethical guidelines for non-intrusive digital research (Townsend, Wallace, 2016), while adhering to each platform's terms of service.

5. Results of the Analysis

This section presents the key findings from the thematic and sentiment analysis of user-generated content related to the Żappka mobile application. The analysis was conducted in two stages: first, a content and sentiment analysis of app store reviews (Google Play and App Store), and second, an evaluation of user feedback posted on Żabka’s social media platforms, including Facebook, Instagram, and TikTok. Each phase of the analysis revealed dominant themes related to user engagement, perceived value, and the outcomes of gamification.

5.1. Content and Sentiment Analysis of App Store Reviews (Google Play & App Store)

The dataset comprised public reviews from the Google Play and App Store platforms posted between January 2023 and June 2025. Although 400 user reviews were initially selected – 200 from each platform using simple random sampling – only 260 were retained for final analysis after filtering out duplicates, blank entries, and comments unrelated to gamification, UX/UI, or loyalty features. This selection ensured relevance and analytical focus while maintaining a balanced platform.

The retained comments were organized in .csv format and served as input for a two-stage analysis. Thematic coding was conducted using TAGuette, an open-source tool for qualitative data annotation. Sentiment classification was performed using MonkeyLearn, a machine learning platform trained to identify polarity (positive, neutral, negative) in short textual content.

Previous studies show that app store reviews are valuable for assessing UX quality and identifying user needs (Pagano, Maalej, 2013; Martin et al., 2017). The thematic focus of this study included app performance, UX/UI quality, loyalty rewards, and gamification features.

Table 2.

Summary of Żappka App User Reviews (January 2023–June 2025)

Thematic Category	Number of Comments	Sentiment (Positive / Neutral / Negative)	Example Quotes (Source)
App Performance Stability	84	22 / 10 / 52	“App freezes constantly.” (Google Play); “Can’t log in for a week.” (App Store)
UX/UI and Feature Access	63	38 / 12 / 13	“After update, it’s more intuitive.” (Google Play); “Layout improved!” (App Store)
Coupons and Discounts	71	50 / 13 / 8	“Love the discounts – save a lot!” (App Store); “Great personalized offers.” (Google Play)
Gamification and Missions	42	36 / 3 / 3	“Missions motivate shopping – great idea.” (Google Play)

Note: only comments relevant to key thematic categories were included in the table.

Source: own elaboration based on Google Play (n.d.); App Store (n.d.).

Analysis of the comments concerning gamification and engagement revealed that many users perceived the Żappka Missions as motivating and enjoyable. Statements such as “Thanks to the missions, I check Żappka more often and try new products” and “Collecting Żappsy is

now a fun daily habit” indicated that gamified tasks encouraged frequent interaction with the app and enhanced the overall brand experience. These findings align with Self-Determination Theory (Deci, Ryan, 2013), particularly the dimension of competence, as missions enable users to complete achievable tasks and receive meaningful feedback, thereby fostering a sense of mastery.

In contrast, some users expressed dissatisfaction with the reward system, particularly when technical failures disrupted the expected benefits. Complaints such as “Scam! Points didn’t register – lost my coupon” or “After the update, all my points disappeared” reflected a loss of trust, especially when the system failed to deliver on promised incentives. These instances highlight the fragile balance between motivation and frustration, underscoring the importance of stable and transparent point redemption mechanisms. From an SDT perspective, the violation of autonomy (lack of control) and competence (inability to achieve rewards) may lead to disengagement.

Regarding UX and interface design, the majority of user feedback was positive, particularly following updates that enhanced layout and navigation. Users appreciated the app’s visual clarity, calling it “clean and modern” and noting that Zappka is “one of the few apps I enjoy using”. However, specific comments reflected frustration with forced updates or delayed loading times at checkout, which interrupted the shopping experience.

Sentiment toward customer support was mixed. Some users noted responsive service and quick bug resolution (“After reporting a bug, the app was updated within days”). In contrast, others criticized the lack of reply or inefficient handling of point-related issues (“Wrote via the form, but no reply – how do I recover points?”). These mixed sentiments suggest that consistency in service delivery remains a key determinant of overall satisfaction. A lack of supportive interaction may threaten users’ sense of relatedness, another core SDT component.

The findings confirm the potential of gamified elements in driving engagement, but also emphasize the need for clarity, reliability, and a seamless user experience. Misunderstandings regarding mission rules and reward mechanics – evident in statements such as “The mission system is confusing, I don’t understand how points are earned” – suggest a need for better onboarding or in-app explanations.

As shown in Table 2, the most negative feedback (over 60%) pertained to app stability and technical issues. The highest share of positive feedback (70%) related to coupons and discounts, reflecting intense satisfaction with loyalty functions. UX and gamification features also received favorable reviews, particularly for their clarity and motivational impact. The results serve as a foundation for comparing perceptions gathered through social media platforms in the next phase of the analysis.

These findings provide a foundation for the next phase of analysis, which involves user feedback from social media platforms (Facebook, Instagram, TikTok), enabling a cross-channel sentiment comparison.

5.2. Content and Sentiment Analysis of Facebook Feedback

The analysis was conducted based on classic content analysis methodology (Krippendorff, 2018) and digital user research practices (Li et al., 2022; Naeem, Okafor, 2019). User comments from the official Żabka Polska Facebook profile (Żabka Polska, n.d.-a) were analyzed using open coding, sentiment tagging, and interpretation of reaction types. Data was drawn from public posts and their comment threads published between January 2023 and June 2025. From an initial corpus of 50 posts containing over 900 user comments, approximately 200 were identified as referring to the Żappka mobile application. Of these, 177 comments were retained for in-depth coding and analysis. Entries that were off-topic, duplicates, or provided no evaluative content were excluded to maintain analytical consistency.

Open coding and sentiment categorization (positive, neutral, negative) were applied to the retained comments. In addition, Facebook reaction types – such as "like", "heart", "angry face", "sad face", and "wow face" – were used as supplementary indicators of sentiment, particularly in brief or ambiguous posts.

Many users expressed strong enthusiasm toward promotions and missions such as Żappsy, special challenges, or surprise rewards. For example, celebratory reactions followed in-app campaign announcements: one user shared, “Today I got a free hot dog with a coupon :D”, which received over 100 heart reactions and several dozen likes. Others praised recurring events, writing, “It’s worth checking daily – there are always new missions”, or appreciated seasonal gamified experiences, such as “Fun pumpkin challenge – more events like this, please!” which drew numerous affirmative reactions. Surprise bonuses were also positively received, with comments such as, “I like that there are surprise bonuses – yesterday I got 500 Żappsy!”

Neutral and informative comments were also common, with users sharing discoveries or seeking clarification. For instance, some users wrote, “Didn’t know I could transfer points – thanks for the info!” or asked, “How can I recover points that weren’t credited?” These posts reflected both curiosity and knowledge exchange among users.

In contrast, negative sentiments often centered around technical difficulties, reward loss, and dissatisfaction with customer support. Users described problems such as: “After the update, the app won’t launch – how am I supposed to use the coupons?” which received multiple sad and angry face reactions. Others criticized the reward system: “My points disappeared after a purchase – Żappka scammed me”. Complaints about ineffective support were also frequent: “Why ask us to use the form if no one replies?” These expressions reflected mounting frustration when communication remained unaddressed.

In some cases, Żappka Support replied publicly to resolve issues. For example, in response to scanning problems, the brand commented: “We’re sorry to hear that. Please get in touch with us via the in-app form – we’ll investigate”. When a user’s account was blocked after activating a promotion, Żappka responded: “Please message us privately with more details – we’ll try to

help quickly”. While such messages demonstrated an effort to address concerns, several users criticized the frequent use of identical replies, questioning their sincerity: “Why do you copy-paste the same reply every time, when the problem keeps happening?”

Table 3.

Distribution of Sentiment and Reaction Types in Facebook Comments

Thematic Category	Number of Comments	Sentiment (Positive / Neutral / Negative)	Most Common Facebook Reactions
Positive coupon experiences	48	44 / 2 / 2	Heart, Like
Technical issues and updates	42	5 / 3 / 34	Sad face, Angry face
Point transfer feature	27	19 / 2 / 6	Heart, Wow face, Angry face
Criticism of support/messaging	34	4 / 6 / 24	Angry face, Sad face
Special campaign appreciation	26	23 / 1 / 2	Heart, Wow face, Like

Source: own elaboration based on Żabka Polska (n.d.-a).

As shown in Table 3, sentiment distribution on Facebook revealed divergent user experiences depending on the topic. The most positive responses were associated with coupon-related posts, which elicited gratitude and engagement. These comments typically received high volumes of heart and like reactions.

In contrast, discussions around technical malfunctions and customer service elicited predominantly negative sentiment, with angry and sad face reactions prevailing. These patterns reflect the emotional weight of functionality breakdowns, particularly when they disrupt point redemption or access to coupons.

Comments concerning the point transfer feature were mostly favorable but included instances of confusion or dissatisfaction, as evidenced by mixed reactions (e.g., heart and wow faces alongside angry faces). Posts criticizing customer support and communication practices were met with emotional disappointment and skepticism, highlighting an area for potential improvement.

Content related to special campaigns (e.g., seasonal missions, bonus events) consistently elicited positive reactions, reinforcing the role of gamified promotions in driving emotional engagement. The wide range of responses demonstrates how Facebook functions as both a feedback channel and a barometer of collective sentiment, enabling brands to monitor user emotions in real-time.

Overall, the Facebook discourse revealed a dynamic spectrum of sentiment, from enthusiasm to frustration. Users not only shared feedback but also interacted with one another, making this platform a meaningful source of community insight. While public replies from the Żabka team supported brand presence, overreliance on templated messages was viewed critically.

These findings can be interpreted through the lens of Self-Determination Theory (Deci, Ryan, 2013), particularly in terms of the psychological needs of competence, autonomy, and relatedness. Gamified content, such as missions and challenges, addressed users' need for competence through achievable goals. Comments praising point transfers and surprise bonuses indicated satisfaction with autonomy and perceived control over their work. Conversely, unresolved technical or support issues were seen as threats to relatedness, as users sought more authentic and reciprocal engagement from the brand.

5.3. Content and Sentiment Analysis of Instagram Feedback

User comment analysis from the official @zabkapolska Instagram profile (Żabka Polska, n.d.-b) was conducted analogously to the Facebook analysis, drawing on data published between January 2023 and June 2025. A total of over 30 posts were reviewed, yielding more than 600 user comments related to the Żappka mobile application, including its features, interface updates, and brand interactions.

From this initial dataset, 204 comments were retained for in-depth analysis. Entries were excluded based on redundancy, irrelevance, or lack of substantive reference to app-related functions or experiences. The selected comments were imported into a spreadsheet and analyzed using open coding and manual sentiment tagging (positive, neutral, or negative).

Unlike Facebook, Instagram does not support direct reaction types per comment. Therefore, the number of likes each comment received was used as a proxy indicator of community resonance and perceived relevance.

The analysis revealed four dominant thematic areas in the Instagram discourse. First, many users reacted positively to the redesign of the app, emphasizing improved layout clarity and ease of navigation. Statements like “The new layout looks cleaner, and it is much easier to find promotions now” (20 likes) suggest that interface improvements contributed to enhanced usability and satisfaction. These comments reflect the SDT principle of competence, as users felt more confident in exploring app features.

A second theme centered around Q&A interactions in Instagram Stories, through which users discovered new functionalities, most notably, the point transfer option. Feedback such as “Thanks for the help! I didn’t know I could transfer points” (15 likes) highlighted the informational value of interactive brand communication and its role in reinforcing users’ sense of autonomy.

While less frequent, critical comments addressed technical errors or issues with customer support. For example, complaints like “I’m having trouble with coupons after the update” (5 likes) reflected frustration with app instability. Although these comments were in the minority, they underscore the importance of reliability in preserving user trust.

Finally, many users expressed enthusiasm for new in-app services, such as integration with Dietly, praising time-saving benefits and functional expansion. Statements like “Diets in the app? Awesome – saving time and money” (17 likes) point to the perceived practical value of

these additions. Such reactions are consistent with extrinsic motivation under SDT, where external rewards (e.g., convenience, financial savings) promote continued engagement.

Table 4.

Summary of Instagram Comment Categories and Sentiment

Thematic Category	Number of Comments	Avg. Likes	Sentiment (Positive / Neutral / Negative)	Sample Comment
App Redesign	65	15	55 / 5 / 5	"The new layout looks cleaner, and I can browse deals faster."
Q&A-related Comments	40	12	34 / 4 / 2	"Thanks for the help! Didn't know I could transfer points."
Criticism of App Performance	48	7	6 / 4 / 38	"I'm having issues with coupons after the update."
Reception of New Features	51	14	46 / 3 / 2	"Daily in the app? Awesome – saving time and money."

Source: own elaboration based on Żabka Polska (n.d.-b).

As shown in Table 4, the Instagram feedback reflected predominantly positive sentiment across most thematic areas. The redesign of the app received particularly favorable feedback, with 85% of related comments expressing approval. These reactions emphasized visual clarity and improved navigation, supporting the idea that thoughtful interface updates contribute to perceived ease of use.

Comments related to story-based Q&A content also revealed strong engagement. Users appreciated the direct and helpful tone of communication and often expressed gratitude for discovering previously overlooked app features.

In contrast, negative feedback, though less frequent, focused on technical instability and limited responsiveness from support. These comments tended to receive lower average engagement, suggesting that critical voices, while present, were not broadly amplified by the community.

Comment-level engagement metrics (e.g., like counts) offered valuable supplementary insight into the resonance and visibility of user sentiment. The analysis confirms that Instagram serves as both a promotional and support-oriented platform. It shows that visual communication, responsiveness, and feature education play an essential role in maintaining positive perceptions of the Żabka app.

Applying Self-Determination Theory (SDT) to this dataset helps clarify the motivational dynamics at play. Competence was supported through improved usability and clarity. Interactive Q&A exchanges and precise control over app functions reinforced autonomy. Extrinsic motivation was evident in comments that valued functional rewards, such as time savings or added convenience, underscoring the multidimensional nature of app engagement on Instagram.

In summary, the findings from the Instagram analysis confirm that this platform serves not only as a marketing channel but also as a valuable source of feedback. While the format limits reaction types compared to Facebook or TikTok, likes remain a meaningful proxy for

community endorsement. Instagram thus continues to offer helpful insight into user experience, emotional tone, and brand interaction surrounding the Żappka app.

5.4. Content and Sentiment Analysis of TikTok Feedback

An analysis of posts published on the official @zabkapolska TikTok profile (Żabka Polska, n.d.-c) covered the 30 most popular videos uploaded between January 2023 and June 2025. The dataset included a range of content types, including technical tutorials, interface announcements, promotional campaigns, and brand communications related to Żappka app features.

Although over 800 user comments were initially retrieved, 772 were retained for final analysis after excluding duplicates, spam, or off-topic replies. Each comment was imported into a spreadsheet, thematically coded, and categorized by sentiment (positive, neutral, negative). As TikTok does not support reaction types under comments, the number of likes per comment was used as a proxy indicator of engagement and resonance.

Technical tutorial videos – such as “Troubleshooting the Żappka App” – generated particularly high engagement, with 199 comments that showed a predominantly positive tone. Users appreciated the clarity and practical value of these tutorials. Comments like “Worked after reinstalling – thanks!” and “Really helpful tutorial” received significant support (53 and 41 likes, respectively). These reactions suggest that educational content enhances brand credibility and user trust, reinforcing the SDT concept of competence by helping users feel effective in managing app issues.

Similarly, videos introducing the app redesign prompted both praise and constructive critique. While many users applauded the improved visuals – e.g., “Looks clean and stylish” or “It’s more professional now” – others noted issues, such as “The icons are too small” or “Finding coupons is harder”. These mixed responses illustrate that interface changes, although positively intended, may enhance or hinder users’ sense of autonomy, depending on usability and accessibility.

TikToks featuring merchandise or new service rollouts (e.g., integration with Jush or Dietly) were also well received. Reactions such as “Cool hoodie – I’m in!” or “Dietly in the app? Awesome – saving time and money” demonstrate that utility-based innovations can enhance brand loyalty, particularly when tied to tangible benefits. Such comments reflect extrinsic motivation within the SDT framework, where functional value encourages ongoing engagement.

A unique aspect of TikTok discourse was the platform’s real-time interaction model. Żappka’s strategy of responding to user comments – either directly in threads or through dedicated Q&A videos – was often praised. For example, “They read and respond to comments – props to the social media team!” illustrates how reciprocal communication fosters a sense of connection. These moments fulfill users’ need for relatedness, the third core SDT dimension, by making them feel seen, heard, and acknowledged.

Table 5.*Summary of TikTok Comment Categories and Sentiment*

Thematic Category	Number of Comments	Avg. Likes	Sentiment (Positive / Neutral / Negative)	Sample Comment
Technical Tutorials	199	34	155 / 30 / 14	“Worked after reinstalling – thanks!”
App Redesign	276	31	180 / 60 / 36	“Menu is fine, but the icons are too small.”
Merch and Promotions	41	26	30 / 6 / 5	“Diets in the app? Awesome – saving time.”
Interactivity & Feedback	256	38	180 / 50 / 26	“They actually read and respond to comments!”

Source: own elaboration based on Żabka Polska (n.d.-c).

As shown in Table 5, TikTok feedback was largely positive, especially for educational content and brand interaction. Tutorials were the most highly endorsed category, confirming the platform’s potential for value-driven engagement.

While the app redesign drew positive attention for aesthetics, some usability concerns reveal the importance of continuous UX iteration. Negative sentiment was modest overall but focused on technical or navigation barriers.

TikTok’s short-form, interactive format also enabled brand responsiveness. User appreciation for two-way communication suggests that platform authenticity and responsiveness are potent tools for fostering emotional connection and loyalty.

Overall, TikTok emerged as a key medium in Żappka’s multichannel strategy—not only as a marketing space but also as a real-time feedback loop. The lack of comment-level reactions was effectively offset by using like counts to assess public response.

When viewed through the lens of Self-Determination Theory (SDT), the platform’s success lies in its support of all three motivational pillars: competence (via problem-solving content), autonomy (through interface personalization), and relatedness (via dialogue and user acknowledgment). TikTok thus functions as both a community space and a barometer of digital brand perception.

5.5. Summary of Key Findings

Across the five content sources – Google Play, App Store, Facebook, Instagram, and TikTok – user-generated feedback revealed consistent patterns in perceived value and engagement with Żappka’s gamified features. Positive sentiment was strongly associated with ease of navigation, rewarding loyalty mechanisms (such as coupons, Żappsy, and missions), and engaging challenges, reflecting the fulfilment of competence and autonomy as proposed by Self-Determination Theory (SDT). These expressions appeared across all platforms, underscoring the effectiveness of gamification in fostering user satisfaction and habitual app usage.

Conversely, negative sentiment was concentrated around technical instabilities, failed point registrations, and perceived inefficiencies in customer support. These issues not only disrupted the intended reward experience but also undermined trust and user–brand connection, thereby threatening the relatedness dimension of SDT. Comments expressing frustration over app crashes, log-in problems, or unresolved complaints were particularly prominent in app store reviews and Facebook threads.

Social media content reinforced and extended these findings. On Facebook and Instagram, users actively engaged in clarification exchanges and peer-to-peer advice, using comments and reactions to express sentiment and flag recurring issues. On TikTok, positive engagement clustered around tutorial content, new feature rollouts, and brand responsiveness via Q&A replies, illustrating how short-form, humanized content deepened emotional connection and strengthened brand perception.

The combination of app store and social media data validated the multi-platform approach as a robust strategy for capturing diversified user perspectives. While app store reviews provided focused functional feedback, social media comments enriched the analysis by reflecting emotional tone, brand trust, and real-time engagement dynamics. This convergence of findings offers actionable insights for app design, loyalty program development, and customer communication strategies.

The analysis of user-generated feedback collected from 1900 entries (later narrowed down to 1413 relevant comments) revealed several critical insights regarding user perceptions of gamified loyalty features. Gamified missions, point accumulation, and personalized rewards were consistently linked to high emotional engagement and positive sentiment across platforms. Conversely, technical instability, coupon-related errors, and inconsistent customer support emerged as dominant drivers of dissatisfaction, particularly in app store reviews and Facebook discussions.

The redesigned interface was generally well-received, particularly on visually oriented platforms like Instagram and TikTok. TikTok also stood out as a key channel for community interaction, with users responding favourably to Q&A formats and brand replies in comment sections. These patterns confirm that user engagement extends beyond app use and into platform-mediated dialogue, where emotional and social dynamics shape the brand experience.

From a theoretical perspective, the findings reinforce and extend Self-Determination Theory (SDT). Gamified features such as missions and visual progress cues supported users' needs for competence (e.g., completing challenges), autonomy (e.g., choosing rewards), and relatedness (e.g., social acknowledgment via comments or reactions) (Ryan, Deci, 2000; Sailer et al., 2017). Furthermore, the study contributes to research on user-generated content (UGC) by illustrating how users not only evaluate brand experiences but actively co-create them through digital discourse (Li et al., 2022; Naeem, Okafor, 2019).

From a practical standpoint, the results confirm that gamification, when intuitively integrated and effectively communicated, can serve as a strategic tool for building emotional loyalty. Features such as Zappsy, missions, and loyalty challenges were frequently mentioned in positive reviews, often described as fun, motivating, or rewarding. However, the findings also stress that gamification cannot compensate for core functional shortcomings. Negative feedback about login errors, point loss, or lack of customer response suggests that the motivational potential of gamification depends on trust and stability in app infrastructure (Hamari et al., 2014; Pagano, Maalej, 2013).

User feedback additionally functioned as a critical input for iterative app development. Reviews and comments provided concrete suggestions, identified pain points, and helped prioritize improvements to app usability, performance, and clarity. This underscores the need for brands to actively monitor and respond to UGC, not merely for reputation management, but as a form of agile, user-informed design (Martin et al., 2017).

In the broader context of digital experience design, the study supports the view of gamification as a strategic design philosophy (Deterding et al., 2011; Huotari, Hamari, 2017). Rather than serving as surface-level incentives, gamified mechanisms can enrich brand ecosystems by embedding narrative, reward feedback, and personalization into everyday interactions. Applications like Zappka demonstrate that gamification can enhance perceived credibility, increase retention, and contribute to the co-creation of long-term value.

Socially, gamification also enhances brand humanization and emotional presence, particularly on platforms like TikTok and Instagram, where humour, responsiveness, and co-creation are expected. Participating in user narratives, acknowledging feedback, and reacting with authenticity fosters deeper engagement and relational loyalty beyond transactional interactions.

Finally, while this study is grounded in a national retail context, its findings have broader applicability. Gamification models adapted to user motivation profiles can be effectively implemented in adjacent service industries, such as hospitality, education, fitness, and banking (Koivisto, Hamari, 2019; Xu et al., 2015), provided they align with the behavioural dynamics and platform expectations within those sectors.

6. Discussion and Implications

The analysis of 1900 user-generated entries across five digital platforms revealed several critical insights. Gamified missions and personalized rewards were consistently associated with high emotional engagement and positive user sentiment. Conversely, issues such as app instability, coupon errors, and inadequate customer support were frequently cited in negative comments, particularly in app store and Facebook feedback. The interface redesign received

generally favorable responses, particularly on visually driven platforms like Instagram and TikTok. Additionally, content on TikTok highlighted user appreciation for interactive formats, including Q&A sessions and comment responses.

This study highlights the multidimensional impact of gamification in loyalty applications, particularly its role in shaping user engagement, satisfaction, and brand perception. From a theoretical perspective, the findings reinforce and extend established frameworks such as Self-Determination Theory, where elements like missions and badges respond to users' intrinsic motivations for competence, autonomy, and relatedness (Ryan, Deci, 2000; Sailer et al., 2017). Moreover, this research contributes to the field of user-generated content by showcasing how users not only react to brand experiences but actively co-create them through discourse on digital platforms (Li et al., 2022; Naeem, Okafor, 2019).

Practically, the study confirms that gamification, when integrated and communicated in a meaningful way, can serve as an effective strategy for enhancing customer relationships. Gamified features such as missions, reward points, and visual progress cues were often mentioned in positive contexts and appeared to strengthen emotional engagement with the app (Hamari et al., 2014; Werbach, Hunter, 2012). This suggests that such mechanisms, particularly when combined with transparent communication and responsive customer support, establish a cycle of motivation and trust that fosters loyalty over time.

The analysis also reveals that user feedback plays a crucial role in the iterative improvement of digital applications. Comments highlighting both appreciation and frustration guide developers toward refining interface design, clarifying features, and addressing technical flaws. This responsiveness enhances the brand's credibility and fosters deeper user trust (Pagano, Maalej, 2013; Martin et al., 2017).

In the broader context of digital marketing, gamification has emerged not merely as an engagement tool but as a strategic design philosophy integrated into value creation. It enhances digital touchpoints with narrative, feedback, and reward mechanisms that turn mundane interactions into meaningful experiences (Deterding et al., 2011; Huotari, Hamari, 2017). This study demonstrates that gamified applications, such as Żappka, not only maintain user attention but can also influence perceived brand credibility and customer lifetime value. As consumers increasingly expect interactivity and personalization, gamification becomes a central component of modern customer experience strategies across digital ecosystems.

Socially, the ability of gamification to foster community interaction, primarily through humorous, relatable, and responsive content on platforms like TikTok and Instagram, underscores its power not only as a design element but as a communication strategy. By participating in user narratives and acknowledging feedback, brands like Żappka can humanize their digital presence and cultivate ongoing engagement.

These insights are further contextualized in the following section, which outlines the study's methodological limitations and directions for future research.

7. Limitations and Future Research Directions

Despite its contributions, this study is subject to several limitations. First, the dataset focuses on a single Polish loyalty app, which may limit the generalizability of the findings across cultures or sectors. Second, the content analyzed was publicly available and may not reflect the views of all user segments. Third, while sentiment analysis was manually validated, the use of machine-assisted tools still carries the risk of contextual misinterpretation, particularly in cases involving sarcasm, regional idioms, or implicit meaning.

Additionally, there are methodological constraints related to platform-specific biases. For instance, visibility algorithms on TikTok or Instagram may disproportionately amplify certain types of content, affecting the representativeness of retrieved comments. The reliance on engagement metrics (likes, emoji reactions) as sentiment indicators, while informative, may also overlook more nuanced interpretations. For example, a comment receiving many likes might reflect agreement with the topic discussed in the post rather than the sentiment of the comment itself. Similarly, emoji-based reactions (e.g., “like”, “heart”, “angry”) carry varying meanings across users and contexts, limiting interpretive precision.

There is also the challenge of representativeness in qualitative sampling. Although efforts were made to balance the data between platforms (e.g., equal samples from Google Play and the App Store), the total number of app reviews differed significantly (approximately 188,000 on Google Play vs. 64,000 on the App Store), potentially introducing overrepresentation or underrepresentation of specific experiences. While proportional sampling was intentionally adjusted for symmetry, future studies may consider applying stratified or weighted sampling strategies to reflect population-level distributions more accurately.

Future research could expand this inquiry by incorporating user demographics or behavioral data to explore differentiated responses to gamified features. Comparative studies across national markets or loyalty programs in other industries (e.g., hospitality, education, public services) could help identify transferable principles and cultural specificities. Longitudinal research would further support understanding of how sentiment and engagement evolve, particularly in response to changes in app features or reward structures. Finally, mixed-method approaches that combine qualitative analysis with quantitative metrics (e.g., retention rates, purchase frequency, mission completion) would enable more robust conclusions about the effectiveness of gamification in driving loyalty and value co-creation.

8. Summary

This study explored user perceptions of gamified features in the Żappka mobile application, a prominent example of loyalty-based digital innovation in Central Europe. Drawing from 1,496 user-generated comments posted between January 2023 and June 2025 across five platforms – Google Play, App Store, Facebook, Instagram, and TikTok – it applied qualitative content analysis and sentiment tagging to uncover behavioral and emotional responses.

Findings confirmed that gamified elements, such as missions, points, badges, and visual progress indicators, play a central role in shaping the user experience. Positive feedback consistently emphasized the ease of use, motivational value of challenges, and satisfaction with loyalty rewards – these patterns aligned with Self-Determination Theory, particularly in terms of the satisfaction of competence and autonomy. Negative sentiment was predominantly linked to technical errors and inconsistent customer service, indicating barriers to user trust and relatedness.

By analyzing discourse across app stores and social media, the study showed how digital platforms function not only as feedback channels but also as spaces for co-creating brand narratives. Comments revealed both enthusiasm and frustration, offering actionable insights for iterative app development and customer communication strategies. TikTok, for instance, has proven especially effective in fostering emotional connections through relatable content and responsive engagement.

The research contributes to gamification literature by demonstrating how user discourse in public, unmoderated digital environments reflects real-world evaluations of engagement design. It also supports the strategic relevance of combining gamification with responsive communication to enhance loyalty and long-term value creation.

Overall, the findings validate the role of gamification as a multidimensional engagement tool that integrates psychological, emotional, and social dynamics. As digital touchpoints continue to evolve, such mechanisms may offer scalable models for enhancing customer experience across sectors, provided they remain transparent, user-centered, and responsive to feedback.

References

1. Android.com.pl (2024). *Żabka prezentuje odświeżoną aplikację mobilną. Żappka pełna ofert i korzyści*. Retrieved from: https://android.com.pl/aplikacje/519357-aplikacja-zabka-funkcje-promocje/?utm_source=chatgpt.com, 20.03.2025.
2. App Store (n.d.). *Żappka – zakupy, promocje, Żabka*. Retrieved from: <https://apps.apple.com/pl/app/%C5%BCappka-zakupy-promocje-%C5%BCabka/id1444267322?l=pl>, 26.06.2025.
3. Bittner, J.V., Shipper, J. (2014). Motivational effects and age differences of gamification in product advertising. *Journal of consumer marketing*, 31(5), 391-400. <https://doi.org/10.1108/JCM-04-2014-0945>.
4. Braun, V., Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. <https://doi.org/10.1191/1478088706qp063oa>.
5. Deci, E.L., Ryan, R.M. (2013). *Intrinsic motivation and self-determination in human behavior*. Springer Science & Business Media (Original work published 1985).
6. Deterding, S., Dixon, D., Khaled, R., Nacke, L. (2011, September). *From game design elements to gamefulness: defining gamification*. Proceedings of the 15th international academic MindTrek conference: Envisioning future media environments, pp. 9-15. <https://doi.org/10.1145/2181037.2181040>.
7. Gazeta Ubezpieczeniowa (2025). *Ubezpieczenia turystyczne od KioskPolis.pl w aplikacji Żabki*. Retrieved from: <https://gu.com.pl/ubezpieczenia-turystyczne-od-kioskpolis-pl-w-aplikacji-zabki/>, 16.03.2025.
8. Google Play (n.d.). *żappka: zakupy, promocje Żabka*. Retrieved from: <https://play.google.com/store/apps/details?hl=pl&id=pl.zabka.apb2c>, 28.06.2025.
9. Hamari, J., Koivisto, J. (2015). Why do people use gamification services? *International Journal of Information Management*, 35(4), 419-431. <https://doi.org/10.1016/j.ijinfomgt.2015.04.006>.
10. Hamari, J., Koivisto, J., Sarsa, H. (2014). *Does gamification work? – A literature review of empirical studies on gamification*. 47th Hawaii International Conference on System Sciences, 3025-3034. <https://doi.org/10.1109/HICSS.2014.377>.
11. Högberg, J., Hamari, J., Wästlund, E. (2019). Gameful Experience Questionnaire (GAMEFULQUEST): An instrument for measuring the perceived playfulness of gamification. *User Modeling and User-Adapted Interaction*, 29(3), 619-660. <https://doi.org/10.1007/s11257-019-09223-w>.
12. Huotari, K., Hamari, J. (2017). A definition for gamification: anchoring gamification in the service marketing literature. *Electronic markets*, 27(1), 21-31. <https://doi.org/10.1007/s12525-015-0212-z>.

13. Hwang, J., Choi, L. (2020). Having fun while receiving rewards?: Exploration of gamification in loyalty programs for consumer loyalty. *Journal of business research*, 106, 365-376. <https://doi.org/10.1016/j.jbusres.2019.01.031>.
14. ITReseller (2022). *Nagrody SAP Innovation Awards 2022 rozdane. Firma SAP podczas SAP NOW – Droga do sukcesu przyznała aż osiem nagród liderom transformacji cyfrowej w Polsce*. Retrieved from: <https://itreseller.pl/nagrody-sap-innovation-awards-2022-rozdane-firma-sap-podczas-sap-now-droga-do-sukcesu-przyznala-az-osiem-nagrod-liderom-transformacji-cyfrowej-w-polsce/>, July 2025.
15. Koivisto, J., Hamari, J. (2019). The rise of motivational information systems: A review of gamification research. *International Journal of Information Management*, 45, 191-210. <https://doi.org/10.1016/j.ijinfomgt.2018.10.013>
16. Krippendorff, K. (2018). *Content analysis: An introduction to its methodology* (4th ed.). Sage Publications.
17. Li, S., Liu, F., Zhang, Y., Zhu, B., Zhu, H., Yu, Z. (2022). Text mining of user-generated content (UGC) for business applications in e-commerce: A systematic review. *Mathematics*, 10(19), 3554. <https://doi.org/10.3390/math10193554>.
18. Lincoln, Y.S., Guba, E.G. (1985). *Naturalistic inquiry*. Sage Publications.
19. Martin, W., Sarro, F., Jia, Y., Zhang, Y., Harman, M. (2017). A survey of app store analysis for software engineering. *IEEE Transactions on Software Engineering*, 43(9), 817-847. <https://doi.org/10.1109/TSE.2016.2630689>.
20. Mekler, E.D., Brühlmann, F., Tuch, A.N., Opwis, K. (2017). Towards understanding the effects of individual gamification elements on intrinsic motivation and performance. *Computers in Human Behavior*, 71, 525-534. <https://doi.org/10.1016/j.chb.2015.08.048>.
21. Morgan, R.M., Hunt, S.D. (1994). The commitment-trust theory of relationship marketing. *Journal of Marketing*, 58(3), 20-38. <https://doi.org/10.1177/002224299405800302>.
22. Naeem, M., Okafor, S. (2019). User-generated content and consumer brand engagement. In: G. Bowen, W. Ozuem (Eds.), *Leveraging computer-mediated marketing environments* (pp. 193-220). IGI Global. <https://doi.org/10.4018/978-1-5225-7344-9.ch009>.
23. Nano.Żabka.pl (2025). *Żabka Nano – sklep bezobsługowy*. Retrieved from: <https://nano.zabka.pl>, 25.05.2025.
24. Pagano, D., Maalej, W. (2013, July). *User feedback in the Appstore: An empirical study*. 21st IEEE international requirements engineering conference (RE), pp. 125-134. <https://doi.org/10.1109/RE.2013.6636712>.
25. Palinkas, L.A., Horwitz, S.M., Green, C.A., Wisdom, J.P., Duan, N., Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health and Mental Health Services Research*, 42(5), 533-544. <https://doi.org/10.1007/s10488-013-0528-y>

26. Paschmann, J.W., Bruno, H.A., van Heerde, H.J., Völckner, F., Klein, K. (2025). Driving Mobile App User Engagement Through Gamification. *Journal of Marketing Research*, 62(2), 249-273. <https://doi.org/10.1177/00222437241275927>
27. Patton, M.Q. (2002). *Qualitative Research and Evaluation Methods* (3rd ed.). Sage Publications.
28. Ramdhani, N., Hussein, A.S. (2024). The Impact of Gamification on Loyalty, Mediated by Consumer Engagement and Brand Awareness. *International Journal of Research in Business & Social Science*, 13(5), 96-107. <https://doi.org/10.20525/ijrbs.v13i5.3495>.
29. Ryan, R.M., Deci, E.L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American psychologist*, 55(1), 68-78. <https://psycnet.apa.org/doi/10.1037/0003-066X.55.1.68>.
30. Sailer, M., Hense, J., Mayr, S.K., Mandl, H. (2017). How gamification motivates: An experimental study of the effects of specific game design elements on psychological need satisfaction. *Computers in Human Behavior*, 69, 371-380. <https://doi.org/10.1016/j.chb.2016.12.033>.
31. Tabletowo.pl (2024). *Żabka wyłączy historię Żappsów i Żappka Post*. Retrieved from: <https://www.tabletowo.pl/zabka-nowy-regulamin-koniec-zappka-pay/>, 25.05.2025.
32. Tondello, G.F., Wehbe, R.R., Diamond, L., Busch, M., Marczewski, A., Nacke, L.E. (2016, October). The gamification user types hexad scale. *Proceedings of the 2016 annual symposium on computer-human interaction in play*, pp. 229-243. <https://doi.org/10.1145/2967934.2968082>.
33. Townsend, L., Wallace, C. (2016). *Social media research: A guide to ethics*. University of Aberdeen. Retrieved from: https://www.gla.ac.uk/media/Media_487729_smxx.pdf, 20.05.2025.
34. Werbach, K., Hunter, D. (2012). *For the win: How game thinking can revolutionize your business*. Wharton Digital Press.
35. Wiadomości Handlowe (2024). *Żabka udostępnia nową wersję aplikacji Żappka. Wśród nowości: integracja z innymi biznesami grupy i... wymiana żappsów na monety Allegro*. Retrieved from: <https://www.wiadomoscihandlowe.pl/retailtech-i-nowe-technologie/zabka-udostepnia-nowa-wersje-aplikacji-zappka-wsrod-nowosci-integracja-z-innymi-biznesami-grupy-i-wymiana-zappsow-na-monety-allegro-2520712>, 20.05.2025.
36. Wirtualnemedi.pl (2022). *Nowa funkcjonalność: przelewanie Żappsów*. Retrieved from: <https://www.wirtualnemedi.pl/artykul/zabka-zappszy-aplikacja-zappka-punkty-transfer-jak-pobrac>, 20.05.2025.
37. Xu, C., Peak, D., Prybutok, V. (2015). A customer value, satisfaction, and loyalty perspective of mobile application recommendations. *Decision Support Systems*, 79, 171-183. <https://doi.org/10.1016/j.dss.2015.08.008>.
38. Yin, R.K. (2017). *Case study research and applications: Design and methods*. Sage Publications.

39. Żabka Group (2023). *Żabka with three awards in the competition Market of the Year 2023. Tomasz Blicharski named "The Visionary of Retail Business"*. Retrieved from: <https://zabkagroup.com/zabka-with-three-awards-in-the-competition-market-of-the-year-2023-tomasz-blicharski-named-the-visionary-of-retail-business/>, 20.05.2025.
40. Żabka Polska (2020). *Żappka Post – nowa usługa w aplikacji mobilnej Żabki pozwala śledzić zamówioną przesyłkę i ułatwia jej odbiór*. Retrieved from: <https://www.zabka.pl/zappka-post-nowa-usluga-w-aplikacji-mobilnej-zabki-pozwala-sledzic-zamowiona-przesylke-i-ulatwia-jej-odbior/>, 20.05.2025.
41. Żabka Polska (n.d.-a). *[Instagram profile]*. Instagram. <https://www.instagram.com/zabkapolska/>, 10.06.2025.
42. Żabka Polska (n.d.-b). *[Facebook profile]*. Facebook. https://www.facebook.com/zabkapolska/?locale=pl_PL, 15.06.2025.
43. Żabka Polska (n.d.-c). *[TikTok Profile]*. TikTok. <https://www.tiktok.com/@zabkapolska>, 28.06.2025.