

## IS GAMIFICATION PROMOTING CONSUMERS' FOOD SAFETY? A RAPID REVIEW

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### ABSTRACT

Gamification is a phenomenon which is growing significantly together with the spread of digital technologies. It refers to the implementation of game-like elements and mechanics into non-game contexts to engage users and encourage specific behaviors (Latino et al., 2023). Gamification uses the inherent motivational power of games to refresh content, incentivize learning and promote desired behaviors (Bassanelli et al., 2022).

The core of an effective gamification is a well-designed reward system, which is crucial for increasing user interaction and achieving specific behavioral outcomes (Sharma et al., 2024). The successful construction of a reward system relies on understanding the motivations of the target audience, establishing measurable goals and providing timely feedback on performance. Examples of these reward systems are the badge systems, i.e. prominent tools which offer users visual recognition for achievements and motivation arising from a sense of accomplishment and status.

Another key component of gamification is narrative storytelling, used to enhance emotional and cognitive engagement by framing activities within a compelling plot with relatable characters and clear milestones.

Finally, within the framework of gamification collaborative dynamics are also important, involving team-based challenges and shared goals, which foster cooperation and sense of community among participants.

All these components allow gamification to address significant societal challenges, providing a powerful and versatile toolkit for driving behavioral change, transforming routine tasks into engaging experiences and motivating individuals toward positive societal shifts.

The main objective of the study is to analyze the consumers' adoption of gamification for food safety.

A literature search was carried out on Scopus and Web of Science databases using both keywords "food" and "gamification", applying the PRISMA approach. 69 scientific articles were extracted and considered eligible for the review. Other relevant documents and reports were identified by consulting gray literature and institutional websites.

The application of gamification to food safety has received little attention, revealing significant research gaps. Indeed, gamification within the food sector is still in its early stages and is often

confined to specific domains, such as healthy dietary management (Ögel Aydin and Argan, 2021), food waste management (Santos et al., 2025) or environmental sustainability (Pettifor et al., 2024). For instance, food gamification apps highlight environmental impact and are used as a tool for reducing carbon emissions.

Pioneering research concerning the potential application of gamification in the food safety domain is only now beginning to emerge. Rodrigues et al. (2023) successfully developed an educational gamification strategy to improve food safety practices among family farmers in Brazil, demonstrating its applicability in less structured, community-based contexts.

While this study underlines the significant potential of gamification, it is still an isolated example applied to specific food safety scenarios. Despite 70% of population in the EU considers food safety to be a relevant topic (European Food Safety Authority, 2022), the scientific literature lacks a comprehensive and systematic approach to leveraging game mechanics for food safety.

Further research efforts should focus on investigating consumers' perspectives through a data-driven approach. This approach enables policymakers to move beyond theoretical assumptions and directly assess how consumers perceive the potential impact of gamification on their food safety behaviors. The desired outcome is an empirically based design of effective public incentives that encourage responsible consumer behavior, thereby mitigating the risk of ineffective policies.

*Keywords: Consumers' behavior; Responsible consumption and production; Game mechanics; Public policies; Behavioral Economics*

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