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AI-driven Gamification in E-Commerce

A Case Study of Consumer Engagement and Sales Growth on Temu

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Abstract

This thesis examines the impact of AI-driven gamification on consumer behaviour in e-commerce, with a particular focus on Temu's gamification implementation. This study aims to determine how gamification influences consumer engagement and purchasing behaviour, how gamified features contribute to Temu's sales growth, and how personalization through AI enhances the effectiveness of gamification in e-commerce.

For this thesis, a case study approach was used by combining a literature review with self-testing of the Temu application and a customer survey. The survey assessed consumers´ engagement with gamification tools, their purchase behaviour, and perception of AI-driven personalization. The analysis identified strong correlations between gamification engagement and increased purchase likelihood, confirming that interactive reward mechanisms, such as Spin-The-Wheel games and time-limited discounts, enhance user participation and increase spending levels.

The findings indicated that AI-driven gamification indeed contributes to Temu's sales growth by leveraging monetary incentives, urgency-based strategies, and behaviourally adaptive engagement mechanics. Additionally, the results showed that personalization plays a crucial role in enhancing the effectiveness of gamification, as users who perceive Temu's AI-powered personalization as positive are more likely to increase their participation and purchase frequency. Furthermore, financial incentives remain the strongest motivator for engagement, with discounts and coupon offers driving repeat interactions and unplanned purchases.

The case study concluded that AI-driven gamification is a key factor in shaping consumer behaviour, fostering brand loyalty, and increasing e-commerce profitability. These insights offer practical implications for online retailers, by emphasising the importance of customized gamification strategies to optimize sales performance and long-term customer engagement.

Language: English
Key Words: Temu, gamification, AI-driven, e-commerce, purchase behavior, consumer engagement

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1 Introduction

Gamification refers to the process of integrating game-design principles and mechanics into environments that are typically not associated with gaming to encourage customer engagement, drive behavioral change, and facilitate skill development (Naqvi, Guoyan & Abbas Naqvi, 2021). A company that uses these techniques to gain a competitive advantage is the digital retail platform Temu. The company's marketing approach is strongly centered around AI-driven gamification and interactive features to enhance consumer engagement and encourage participation. (BBC, 2024)

This makes "Temu […] as addictive as sugar," claims analyst Neil Saunders in an interview with BBC. Sanders highlights several marketing strategies Temu uses to achieve this addictiveness. Besides offering cheap prices and structuring their platform in a way that resembles real-life dollar stores, their most significant tactic is the implementation of various gamification features. Sanders stresses how Temu combines elements of social proofing, scarcity and perceived urgency through countdowns, timers or other aspects of gamification to create an addictive environment. This increases customer engagement and spending, thereby providing a competitive edge for the company. (BBC, 2024)

1.1 Problem statement

The current market situation increasingly favors digital retail companies like Temu. Since the number of internet users continues to rise, electronic-commerce transactions are expected to grow accordingly, further solidifying their role in the global economy. (Rahmadhan, Wana, Sensuse & Suryono, 2023)

E-commerce has made it easier than ever to start a business online, which makes the market more competitive each day. To combat this, managers have started to utilize techniques like gamification and AI-driven gamification, to keep or increase their position in the e-marketplace. By integrating engaging game-like features, companies utilize gamification to enhance customer experience, strengthens user engagement, and fosters long-term customer retention, setting businesses apart from competitors. (Huseynov, 2020)

Despite growing interest in AI-driven gamification, research on its precise influence on consumer behavior remains limited (Rahmadhan, Wana, Sensuse & Suryono, 2023). Thus, this thesis aims to explore the extent to which AI-driven gamification influences consumer behavior in the specific case of Temu.

1.2 Research objectives and relevance

The thesis will explore the contribution AI-driven gamification has made to the rapid rate of growth the company Temu experienced over the last two years. The aim of the thesis is to investigate the role of AI in gamification strategies in marketing, to analyze the specific case of Temu`s consumer engagement and sales growth, to describe the gamification tools used in the app, and lastly to explore consumer responses to Temu`s AI-driven gamification. The goal is to highlight the marketing potential of AI-driven gamification and to analyze how it affects consumer`s purchase behavior.

The main research questions that will be answered throughout the thesis are as follows:

1. How does AI-driven gamification influence consumer engagement on e-commerce platforms like Temu?

2. What specific AI-powered gamification strategies are used by Temu, and how have they contributed to its rapid sales growth?

3. To what extent do AI-driven gamification features influence consumer purchase behavior on Temu, including impulse buying, loyalty, and overall satisfaction?

Firstly, to answer these questions, the necessary background information on the subject will be presented in the literature review, starting with AI in e-commerce. This will be followed by an overview of gamification and information on AI-driven gamification. In this chapter information about the specific Temu case will also be provided. This includes their business model and a preliminary analysis of their use of gamification tools. In the following chapter, the case of Temu will be analyzed in more detail. Afterwards, a consumer survey will be conducted and reviewed. The survey aims to determine how the AI-driven gamification tools and overall marketing strategy of Temu affects consumers´ purchase behavior and whether that correlates with the profit growth the company currently experiences.

1.3 Scope and limitations

Generally, the scope of a study includes the parameters that define its research. It can be seen as the domain of the research and identifies what will and what will not be covered by a study. Limitations on the other hand, describe occurrences that arise in a study which the researcher cannot control. (Simon & Goes, 2013) In this case, it is important to note two things.

Firstly, casual conclusions cannot be drawn from case studies, since alternative explanations can never be fully ruled out. Furthermore, a case study only researches the behavior of one singular person, or in this case group and organization. Their behavior might not reflect that of similar entities. Secondly, the use of surveys limits the research further. Forcing respondents to pick between pre-selected answers which might not fully reflect their actual response might alter results slightly. In addition, the selected pool of respondents itself limits the research. (Simon & Goes, 2013) In this study, the respondents will be mainly comprised of Finnish and German university students. Their answers might not reflect those of other demographic groups.

2 Methodology

This thesis is a research paper based on both empirical approaches and the review of literature. The goal of a research paper is to either clarify statements, to correct wrong assumptions or to explore unexplained circumstances. (Krishnaswamy & Satyaprasad, 2006, p.2)

2.1 Research design

Throughout the course of the thesis a literature review as well as a case study including both quantitative and qualitative research methods will be used.

2.1.1 Case study approach

After an extensive literature review, a case study on the e-commerce retailer Temu will be conducted. A case study can be used to analyze a group of people, an event or in this case an organization. It provides an in-depth research method that consists of both qualitative and quantitative analysis techniques. (Case Study, n.d.)

2.1.2 Qualitative analysis

The first part of the case study is a qualitative analysis of Temu`s app, the AI-driven gamification tools implemented there, and the company`s performance and growth over the last two years.

Qualitative research typically relies on three primary methods. The most widely used is interviewing, which can be either semi-structured or unstructured. Semi-structured interviews involve predefined, open-ended questions that allow additional inquiries to emerge naturally, whereas unstructured interviews focus on fewer topics but in greater detail, often employed in life history research. The second qualitative research method is focus-groups. This methodology consists of group discussions which are led and guided by a researcher. This method is mainly used complimentarily to other research methods to gain even more detailed data in the form of discussion content and group interaction. The last commonly used qualitative research method is observation. Researchers that use this method focus on observing social-phenomena or people's behavior in real-life situations. (Denny & Weckesser, 2022)

For this thesis elements of observation will be used to analyze the company Temu. The goal during this first part of the research is to describe the company's marketing strategy in depth. This includes describing and analyzing the different AI-driven gamification tools used in the app through self-testing and literature on the topic. Furthermore, the company's growth in sales, monthly app users and order volume will be analyzed in this stage. This step of the research process is meant to provide an overview of the current situation the company is in and the marketing strategies Temu employs.

2.1.3 Quantitative analysis

The second part of the research will be a quantitative analysis in the form of a survey. Generally, quantitative research emphasizes numerical data and statistical evaluation, aiming to measure and analyze variables systematically. This research approach mostly involves measurements and statistical analysis. (Malhotra et al., 2012, p.187) The goal of the survey is to analyze the effects of AI-driven gamification used in the Temu app as perceived by the consumer.

2.1.4 Survey design process

The first step in the process of designing a survey is to find a suitable overarching research question. At this stage it is not necessary to form every single question that will be used in the survey. The definition of the core research question whose answer will be concluded from the information collected from the surveys is more important. There are two main types of surveys, depending on how that question is formulated. Firstly, descriptive surveys that focus on gathering data to identify patterns, trends, and the significance of a topic, without assuming any prior hypothesis. In contrast, analytic surveys are hypothesis-driven and designed to examine the relationships between variables. Here, the researcher already makes an assumption about the outcome of the research and the relationship between the driving factors while formulating this question. (Kelly-Quon, 2018)

2.1.5 Analytic survey

In the case of this thesis and the context of the research an analytic survey is the best option. Due to previous studies and previous literary evidence, this research is already driven by the hypothesis that AI-driven gamification influences consumer behavior.

The underlying questions that will not be directly used in the survey but rather answered based on the insights derived from the survey could be as follows:

1. Does Temu`s customer loyalty increase due to the AI-driven gamification tools used?
2. Does AI-driven gamification change the consumers' purchase behavior?
3. How does AI-driven gamification maximize Temu`s profit?

Specific in-survey questions that contribute to answering these broader, underlying questions could be as follows:

1. Has Temu`s game and reward system ever enticed you to purchase from the app rather than your usual go-to (online) store?

2. Have you ever made a spontaneous purchase in the app due to a countdown?

3. Have Temu`s spin the wheel coupons ever made you buy something you did not actually need or anticipate buying when opening the app?

2.1.6 Advantages of online surveys

Online surveys provide several benefits, including cost-effectiveness and ease of implementation. Their accessibility is enhanced by a variety of available digital tools for design and distribution. Since no direct interviewer is involved, respondents may also feel more comfortable providing honest answers due to the anonymity offered by online formats. (Safdar, Abbo, Knobloch, & Seo, 2016)

This anonymity makes online surveys more reliable than face-to-face surveys. Furthermore, online surveys are usually lower in cost and time consumption for all parties involved. In addition to that, surveys that are conducted online are superior regarding response-rate and answering speed. They involve less effort from the respondent´s side which leads to quicker replies and heightens the chances of getting a response. (Vasantha Raju & Harinarayana, 2016)

2.1.7 Disadvantages and risks of online surveys

One of the key challenges of online surveys is the inability to seek clarifications or probe deeper into responses. This limitation can be mitigated by crafting clear instructions and concise questions. Additionally, ensuring brevity in the survey design can improve completion rates. Another challenge arises when targeting older respondents who may struggle with digital formats, leading to misinterpretations or lower participation rates. (Evans & Mathur, 2005)

2.1.8 Risk mitigation with online surveys

To address challenges in online, self-administered surveys, careful planning is essential. Research questions should be clearly defined in advance, and each survey question must be structured to minimize ambiguity. Maintaining consistency in wording and response scales helps ensure clarity and reliability in data collection. The visual design, layout and length of the survey should also be acknowledged and designed in a way that makes the survey as approachable and respondent friendly as possible. (Safdar, Abbo, Knobloch, & Seo, 2016)

Despite the challenges, the method of an online survey will be used for this thesis. The multitude of pros, such as ease and accessibility for participants and the helpful software for the development and design of the survey, outweigh the cons. The challenge nonrespondents pose can be eliminated by adhering to the aforementioned guidelines of keeping the survey clear and brief while developing it. Furthermore, online surveys make it easy to reach a multitude of people quickly; finding other willing participants that can replace nonrespondents should prove to be easy.

2.1.9 Finalized research design

In conclusion, the research part will include a case study that is divided into two parts. The mixture of quantitative and qualitative research will generate extensive insights into the topic (Malhotra et al., 2012, p.187). Firstly, a qualitative analysis in the form of a case study of the company Temu will provide a detailed overview of the brand's marketing strategy and use of AI-driven gamification. Secondly, a quantitative analysis in the form of an analytic survey will be used to gather information about the effects of AI-driven gamification on consumer purchase behavior and customer loyalty. Lastly, those findings will be used to determine whether Temu`s extensive use of AI-gamification is directly responsible for their astonishing rate of growth over the past two years.

2.2 Data collection

Data collection is a fundamental component of any research study. It enables researchers to obtain the necessary information to address research questions, test initial hypotheses, and fulfill the study's objectives. (Karunarathna et al., 2024)

The initial phase of the case study will involve collecting data from various statistical databases, publicly available financial reports, and direct observation through self-testing of the Temu application. The specific AI-driven gamification tools currently in use on the application will be tested during a self-test and described afterwards. This analysis aims to identify patterns in Temu's sales, profitability, and user growth while assessing potential correlations between these trends and the introduction of AI-driven gamification features or other major marketing initiatives.

The second phase of the case study will involve an analytic consumer survey, where data will be collected through an online questionnaire administered via Microsoft Forms. The collected responses will be extensively analyzed to assess consumer perceptions of AI-driven gamification.

2.3 Analysis techniques

Online surveys have become a widely adopted method for data collection and analysis in both academic research and marketing. The advancement of web-based tools has simplified survey creation, distribution, and data retrieval. Compared to traditional methods such as email and telephone surveys, online surveys are now considered the more effective approach due to their efficiency and ease of use. (Vasantha Raju & Harinarayana, 2016)

Microsoft Forms is a widely used online survey tool, valued for its diverse question formats, user-friendly mobile interface, and built-in features such as auto-save and data caching, which enhance usability and reliability in data collection (Cigliana, Gray & Gower, 2024).

This thesis employs Microsoft Forms for the online survey due to its ability to incorporate images, which will enable respondents to engage with a simulated gamification experience from the Temu app. Additionally, the tool's mobile-friendly interface and built-in graphical data representation features provide an efficient means of analyzing survey responses and visualizing trends.

3 Literature review

A literature review is the compiling and analysis of different scholarly works and previous research on a particular topic and is meant to provide different insights into a topic and improve the value of a thesis. This thesis discusses the topics e-commerce, AI in e-commerce, gamification and AI-driven gamification. (University of Edinburgh, 2024)

3.1 AI in e-commerce

The growth of e-commerce is driven by digitalization and increasing consumer demand (Bawack, Wamba, Carillo & Akter, 2022). In e-commerce in the retail sector, AI can strengthen customization, boost customer engagement, and streamline operations, while fostering brand loyalty and growth (Fedorko, Krái & Bacík, 2022).

3.1.1 E-commerce

E-commerce includes all financial transactions of goods and services conducted over the internet (Bawack, Wamba, Carillo & Akter, 2022). This process includes a variety of different models, including business-to-consumer (B2C), business-to-business (B2B) and consumer-to-consumer (C2C) (Trisolvena, Masruhro & Ginting, 2024). Due to a rising number of network users there is an increasing demand for online services and the rising pressure and need to stay competitive. This has led many firms to implement or switch entirely to e-commerce methods. (Anvarovich, 2024)

The cross-border e-commerce market is expected to grow substantially, with estimates projecting an increase from $3.5 trillion in 2022 to $4.8 trillion by 2026. This trend is perceived the most in the European Union. Here, initiatives like the Digital Single Market program are used to enhance consumer protection and simplify regulatory challenges, fostering international online trade. (Tariq & Chen, 2024)

3.1.2 Rising importance of technology sector and AI

With the rapid evolution and growth of the information technology sector the demands of consumers have evolved, too. Now, the ease of ordering goods online is a core expectation of today´s consumers regarding their day-to-day shopping processes. (Anvarovich, 2024) With the constant evolution of technology comes the constant evolution of consumer

demands. This forces companies that employ e-commerce methods to change and adapt their business models frequently to their customers´ needs and the newest technological standards. A recent and groundbreaking development in the space of information technology is artificial intelligence (AI). (Bawack, Wamba, Carillo & Akter, 2022)

AI refers to technological systems designed to replicate human cognitive functions, including problem-solving, learning, and decision-making. As a core component of modern industries, AI is widely applied across sectors such as healthcare, entertainment, and, notably, e-commerce, where it enhances efficiency and customer experience. (Srivastava, 2021)

AI is revolutionizing e-commerce because it enables advanced data analysis and personalized customer experiences. Businesses can now tailor their services more precisely to individual preferences, which provides a competitive edge in the digital marketplace. (Bawack, Wamba, Carillo & Akter, 2022)

3.1.3 E-commerce in the retail sector

Particularly noticeable is the change to (AI-driven) e-commerce in the retail sector. There, companies implement digital methods like websites to either replace or enhance their physical commerce. This brings many advantages for the retailers themselves as well as for their customers. The sellers manage to reach a global audience and have the opportunity to build a large and competitive customer base. Furthermore, running a retail store that is solely online demands lower running costs than a physical store. For customers, being able to shop at an online store means saving time and getting a wider range of products with the opportunity to compare prices easily. Furthermore, online platforms offer twenty-four seven availability and special discounts. (Fedorko, Krái & Bacík, 2022)

3.1.4 Advantages of implementing AI on retail platforms

If companies manage to implement AI on their e-commerce platforms these advantages increase even further, especially in the customization sector. With the growth of e-commerce, the amount of data produced by online shoppers increased as well. So much so, that traditional customization techniques are no longer usable. In order to analyze the

new amounts of big data many companies choose to implement AI algorithms like machine learning. (Krishan & Mariappan, 2024)

Furthermore, AI algorithms can be used for forecasting, statistical programming analyzing and predicting consumer behavior. Thus, AI can serve as a tool that generates perfect product recommendations for each individual customer based on their search history and other personal information. (Fedorko, Krái & Bacík, 2022) This new AI-driven customization strategy allows for highly individualized purchasing experiences and replaces the previously common one-size-fits-all strategy. (Krishan & Mariappan, 2024)

AI-powered chatbots enhance customer service by offering automated assistance around the clock. Utilizing natural language processing, these systems efficiently handle frequently asked questions, ensuring timely and relevant responses for users. (Raji et al., 2024)

AI can also enable visual or audio searches, which simplifies the search process immensely for customers. This form of AI is based on image and sound processing algorithms. (Fedorko, Krái & Bacík, 2022)

Lastly, AI can help companies in the retail e-commerce sector to better their customer relationships. Businesses that successfully integrate AI into e-commerce can craft highly personalized marketing campaigns and shopping experiences. This level of customization strengthens the bond between consumers and brands, while ultimately driving customer loyalty. (Babatunde, Odejide, Edunjobi & Ogundipe, 2024) In e-commerce AI can be used as a tool to create an environment where the collaboration of people and advanced technology increases customer satisfaction, sales and therefore profit. (Fedorko, Krái & Bacík, 2022)

3.2 Gamification

Gamification involves the integration of game mechanics into environments which have no direct relation to gaming in order to encourage behavioral changes, increase engagement, and support skill development. Through carefully designed game-based elements, companies can direct consumer interactions and optimize marketing strategies to enhance brand loyalty and customer retention. (Naqvi, Guoyan & Abbas Naqvi, 2021)

3.2.1 Term origin

Gamification as a concept has existed for decades, with businesses incorporating game-like marketing tactics long before the term itself became widely known. In the 1980s, Nick Pelling, a British game developer, introduced the term, but it initially gained little traction. Interest in the concept grew with contributions from figures such as Amy Jo Kim and Ian Bogost, who explored the application of video game dynamics beyond entertainment. It was only after 2010 that ”gamification” came to represent its current application in digital engagement strategies. (Nguyen, 2024)

3.2.2 Definition

Generally, gamification can be described as the employment of game-like design methods and mechanics in settings that are typically not related to games, with the goal of forming behavior, getting individuals involved in innovation and creating skills. Gamification affects an individual`s motivation not only during their leisure time, but also while resolving complex tasks and activities. Some researchers define it as a new standpoint of designing, enforcing solutions and analyzing in a business environment. Game-like techniques, procedures and frameworks which are often used to influence and drive people or networks forward, are currently being used to direct behavior and fabricate desired outcomes and results. Gamification can therefore alter consumer behavior and if used correctly it can be a powerful marketing tool. (Naqvi, Guoyan & Abbas Naqvi, 2021)

Recent market analysis shows that gamification presents a very effective tool in many ways. It can be used to capture the attention of key stakeholders while simultaneously fostering deeper engagement not only internally with employees but also externally with consumers. Extensively engaging all parties then creates a deeper feeling of involvement which leads to brand loyalty and can contribute to a company’s long-term success. (Pazii, 2024)

3.2.3 Relevance in the e-commerce sector

Gamification has gained significant relevance in recent years, especially in the e-commerce sector. A multitude of retailers online utilize gamification elements like loyalty programs, reward systems and badges with the end goal of maximizing their overall sales through increased customer engagement and retention. The use of gamified elements can establish

a shopping experience that is more appealing, interactive, and fun for consumers. (Bogoslov, Stoica, Georgescu & Lungu, 2023)

In today`s competitive market some researchers claim that gamification has turned into a necessity for e-commerce retailers. With increasing competition, standing out to customers and retaining them can be challenging. In those cases, gamification can be a helpful tool to differentiate one's business from the competition and create a loyal customer base. (Jakobides, Ma, Trantopoulos & Vassalos, 2024)

3.2.4 Growth and trends

Gamification has become a worldwide trend in e-Commerce and is currently being adapted in a multitude of different countries. However, the level of adoption varies. Especially European countries have quickly adopted the new trend. Specifically, companies which operate in the European fashion and beauty markets are implementing gamification strategies to drive sales and engage customers. Reason for this could be the prominent tech industry in countries like Germany, France, and Sweden. Furthermore, European customers are known to be tech-savvy and have one of the highest rates of adoption when it comes to innovative technological advancements. Nonetheless, gamification is still a global trend. The US and China also have significant adoption and implementation rates of gamification in their e-commerce sectors. Particularly Chinese e-commerce giants like SHEIN and Temu have effectively equipped their platforms with gamification tools and managed to increase their sales and market shares even further. (Bogoslov, Stoica, Georgescu & Lungu, 2023)

3.2.5 Gamification usage ecology

Businesses utilize various gamification techniques on digital platforms, all of which rely on a set of fundamental principles: incentivization, progressive advancement, engagement through challenges, and continuous feedback. These elements play together to encourage consumer participation while simultaneously monitoring their behavior and responses. Among the most crucial aspects are structured reward mechanisms, dynamic progression models, interactive challenges, and real-time feedback, all of which contribute to sustained customer engagement and retention. (Costa, Aparacio J., Aparacio M. & Aparacio S., 2024)

Reward systems are used to maintain the customer`s engagement and motivate them. These can include points or badges which are rewarded to the customer throughout the gamified experience. Adaptive progression ensures that the process does not become boring for the customer. Levels increase in difficulty as the user progresses, to create a smooth flow that is coordinated with the customer`s skill level. (Dewi, 2024)

Challenges and continuous feedback can be used as a motivational tool to provide a sense of accomplishment for the user that motivates them to keep going and sustains their engagement on the platform. (Hassan, Dias & Hamari, 2019) Retention and motivation describe the components of gamification that create a balance between rewards and challenges, which plays a significant part in long-term customer retention. If these components are successfully combined a so called “gamification usage ecology”, which Costa et al. define as the interaction of user motivation, the overall context and game mechanics, is developed. (Costa, Aparacio J., Aparacio M. & Aparacio S., 2024)

3.2.6 Gamification tools

As aforementioned, there are a multitude of specific gamification tools that are used to achieve the “gamification usage ecology”. These game elements form the core features of a game and characterize it. There are several of these elements that are used by e-Commerce companies. According to Anh Van Nguyen the following are used the most:

- **Badges**: (visual) medals/ prizes gained by completing a set of certain tasks or spending money
- **Leaderboards**: often competitive user rankings with rewards like coupon codes and gifts for the top-performers
- **Quests**: tasks or short challenges that need to be completed daily or seasonally
- **Competitive/Challenges**: engaging competitions amongst users that enhance motivation and excitement
- **Virtual Goods**: virtual items (like accessories for avatars) that allow customers to express themselves on the platform/app in a unique way
- **Gifting and Sharing**: the option to share virtual goods with the goal of fostering community

- **Levels**: the grouping of customers by skill to provide customized challenges based on their group`s skill level
- **Points**: collected throughout the tasks and challenges, can be an indicator/can determine the user's level
- **Progress bars**: showcase of the user's level and shopping progress, indicate what must be done to achieve the next goal, like a coupon code or free delivery
- **Rewards**: the user's points are converted into prizes like coupon codes and discounts
- **Feedback**: the possibility of reviewing purchased items on the platform/app to gain additional points (Nguyen, 2024)

3.3 AI-driven gamification

Gamification is widely recognized for its ability to enhance customer engagement and motivation. However, scholars like Bezzina and Dingli suggest that a standardized gamification strategy lacks the adaptability that is needed for diverse user preferences. To address these challenges, researchers have explored ways to increase its personalization and flexibility. One promising solution is the integration of artificial intelligence, which enables more dynamic and user-specific gamification strategy. (Bezzina & Dingli, 2023)

When AI is used to enhance gamification, it introduces key advantages like dynamic adaptability, prediction capabilities, and enhanced personalization based on data insights. These AI-driven enhancements contribute to a more immersive and engaging user experience. According to Costa et al. There are a set of primary mechanisms through which the implementation of AI optimizes gamification. These include tailoring experiences to the user via machine learning, forecasting their behaviors through predictive analytics, and adjusting game mechanics in real time. (Costa, Aparacio J., Aparacio M. & Aparacio S., 2024)

3.3.1 Machine learning

Machine learning enables the rapid processing of vast datasets, which facilitates the identification of a user´s preferences as well as patterns in their behavior and performance within gamified environments. Companies that successfully leverage these insights can provide highly personalized user experiences which are tailored to individual engagement levels. (Schöbel, Schmidt-Kraepelin, Janson & Sunyaev, 2021)

3.3.2 Reinforcement learning

Following an analysis of individual customer profiles, AI employs reinforcement learning to categorize users with similar traits into specific groups. These groups are then assigned tailored challenge levels and corresponding rewards, ensuring a balanced and engaging experience that sustains long-term motivation (Costa, Aparacio J., Aparacio M. & Aparacio S., 2024)

3.3.3 Predictive modeling

AI-driven predictive models assess historical data to anticipate future consumer behaviors, allowing companies to proactively address potential disengagement amongst users. By utilizing techniques such as neural networks and regression analysis, these models identify at-risk users and deploy strategic interventions, such as targeted rewards or reminders to maintain said customers´ engagement over extended periods of time. (Roy & Jain, 2022)

3.3.4 Adaptive mechanics

Lastly, AI facilitates real-time modifications to game mechanics through adaptive systems that leverage reinforcement learning. These adjustments help guide user behavior by rewarding specific actions. If a user's engagement declines, the system can dynamically modify task difficulty or enhance reward incentives to maintain the user´s interest. This approach ensures that gamification remains both effective and personalized to each consumer's skill level (Costa, Aparacio J., Aparacio M. & Aparacio S., 2024)

3.3.5 Effect on motivation

Incorporating AI-driven gamification elements like point systems, virtual badges and challenges significantly impacts consumer motivation by addressing both utilitarian and hedonic drivers. Utilitarian incentives, such as discounts and vouchers offer tangible financial benefits, while hedonic elements enhance the entertainment value of the user experience. The combination of these motivations fosters long-term engagement, making AI-driven gamification an effective method for increasing customer loyalty and driving sales (Elmashhara, De Cicco, Silva S., Hammerschmidt & Silva M., 2024)

3.4 Case Context: Temu

With the ongoing digitalization of daily life, e-commerce platforms have gained increasing significance. These platforms facilitate direct transactions between buyers and sellers, eliminating traditional geographical barriers (Trisolvena, Masruhro & Ginting, 2024). Advancements in digital technologies provide the business opportunity of entering multiple markets simultaneously while maintaining efficiency regarding the supply chain and preserving prior competitive positioning in the local market. (Nim, Mantrala & Özsomer, 2024)

3.4.1 Company overview

Temu, a rapidly expanding low-cost e-commerce retailer, provides a wide selection of products, ranging from everyday necessities to unique gadgets that may not be easily found elsewhere. The company was launched in September 2022 and is operated by PDD Holdings. (Trisolvena, Masruhro & Ginting, 2024)

Temu now operates in over 50 global markets. Their unique approach to deliver access to products from various global sellers has led to more competitiveness both in domestic and international markets. (Nim, Mantrala & Özsomer, 2024)

The Chinese corporation is also known under the name of their well-established e-commerce platform Pingduoduo, which has a market capitalization of $102 billion. Temu resembles Pingduoduo in many ways and has a comparable NGM business model. (Li, 2023)

3.4.2 Business model and growth

The company´s unique business model has allowed it to succeed on the world market so quickly. It enables vendors who are based in China to ship and sell their products directly, without intermediaries, to customers. This reduces costs and leads to significantly discounted prices for consumers. (Trisolvena, Masruhro & Ginting, 2024)

Temu quickly established itself as a leading force in the retail app market, outpacing competitors such as Shein and Amazon in terms of download volume. The app continues to attain the best ranking in app stores like the Google Play Store across the board. Within just three months of its launch, Temu became the most downloaded free app in the United

States by December 2022. In addition to that it was also crowned the most downloaded app in numerous other countries like Portugal and Ireland. (Li, 2023) Currently, Temu stands at over 130 million app downloads and around 420 million monthly visits on their website (Trisolvena, Masruhro & Ginting, 2024).

Temu`s annual sales for 2024 are forecasted to reach $54 billion, which would entail a growth rate of 260% from the previous year, where the total sales reached $15 billion (Backlinko, 2024).

3.4.3 Marketing strategies

Temu's rapid success is driven by three key marketing strategies: digital marketing, data-driven customer insights, and gamification-based engagement techniques. Temu mainly focuses on digital marketing techniques, including social media advertising and affiliate marketing. (Li, 2023)

In the former they create humorous content on various social media platforms such as TikTok and Facebook, many based on the tagline ”Shop like a Billionaire”, a slogan that was established in an advertisement during the Super Bowl of 2024. Prior to this campaign, Temu made history by becoming the youngest company to advertise during the Super Bowl, running its first ad just 5.5 months after launch. The $14 Million Temu´s marketing team invested for two thirty second spots during the event proved to be a fruitful investment. On the same day the app experienced its fastest growth yet. There was a 45% increase in downloads which amounts to a 20% gain in daily active users when compared to the day prior to the advertisement. (Rinaldo, 2024)

In affiliate marketing the company has established an ”Affiliate program” where they employ third-party entities like customers or influencers to engage in promotional actions for monetary rewards. (ProQuest, 2024)

3.4.4 Data management practices

Temu adopts data management strategies similar to those employed by major tech firms like Amazon and Facebook, leveraging customer insights for personalized marketing. The company monitors their users´ activity and search history, their profile information and any other relevant data through their app and website. In addition to that, as is common, they

gather information related to their users´ devices like mobile network and manufacturer details. This allows them to properly cater their platform to the individual user and to capture and keep their attention for as long as possible. Temu´s targeted demographic consists mainly of GenZ shoppers, as they spend a monthly average of $250 on online shopping and over 75% of them display price sensitivity. (Li, 2023)

3.4.5 Implementation of gamification elements

The implementation of in-app interactions is known to be one of the most effective methods for maintaining customer engagement on e-commerce platforms and applications. Thus, Temu has introduced gamification as a marketing strategy. (Roy & Jain, 2022) The application includes features like Free Gifts, redeem Cash, Spin-The-Wheel, Crack-The-Egg, Farmland, Lucky Flip, earn credits and Daily Gifts. By employing these gamification elements Temu follows into the footsteps of its sister company Pingduoduo. Customers who actively engage with Temu's gamification features receive discounts and incentives as rewards for participation. To claim said prizes, customers typically have to fulfil a set of objectives, which include inviting new users to download the application, watching advertisements and logging into their account multiple times a day. (Li, 2023) Their functionality, their effects on consumer behavior, and their contribution to Temu´s quick profit growth will be analyzed later in this thesis.

3.4.6 Company image and ethics

Lastly, it is worth noting that the company´s business model has also sparked controversy on multiple occasions regarding intellectual property rights and labor law violations, product quality and data privacy. Temu has also been involved in numerous legal disagreements with its main competitor Shein. Despite these challenges the company has managed to hold its position in the e-commerce market and continues to grow as a competitive alternative for consumers who seek affordable prices. (Trisolvena, Masruhro & Ginting, 2024)

4 Case study

Case studies can be used to analyze groups of people, events or in this case an organization like Temu. They are an in-depth research method that consists of both qualitative and quantitative analysis techniques. (Case Study, n.d.)

Firstly, a qualitative analysis of the Temu application is conducted through self-testing. Followed by a brief overview over Temu´s sales growth. Lastly, a quantitative analysis in the form of an analytic online survey is carried out. The goal of the survey is to determine the effect that Temu´s AI-driven gamification features have on consumers.

4.1 Temu´s AI-driven gamification features

Temu currently employs a special gamification event that customers can profit from. This main event occurs immediately after users open the Temu app and can be played once per day. According to the official set of rules the event always includes the same three parts: the results from the Spin-The-Wheel, an additional coupon bundle from Crack-The-Egg, and a set of five hidden coupons.

4.1.1 Feature one: Spin-The-Wheel

Figure 1 showcases the first part of Temu´s gamification process, the Spin-The-Wheel feature.

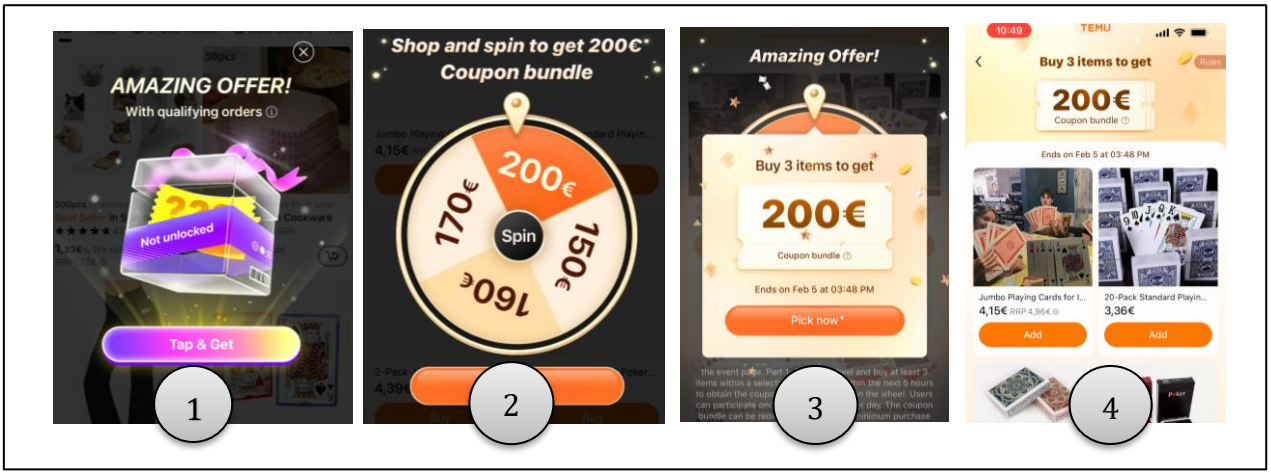

Figure 1: Temu Gamification Part One (Spin-The-Wheel)

After opening the Temu app, the user is immediately confronted with a gamified discount offer in the form of a gift (step 1). After the customer presses the button ”Tap & Get”, the

first gamification part of the event begins and the Spin-The-Wheel tool appears (Step 2). The spinning-speed of the wheel is objectively slow, and the user gets multiple tries, making obtaining the €200 coupon easy. After receiving the €200 coupon the customer is informed that to use the discount, three items must be purchased (Step 3). The app then redirects the user to a new page filled with pre-selected items to choose from (Step 4). These items are personalized and correspond with the consumer´s previous search history, by employing AI-algorithms (BBC, 2024).

4.1.2 Feature two: Crack-The-Egg

Before the app-user has the chance to select the three required items the offer of triggering a ”coupon bundle” appears. This is the beginning (step 1) of part two of Temu´s gamification process, showcased in figure 2.

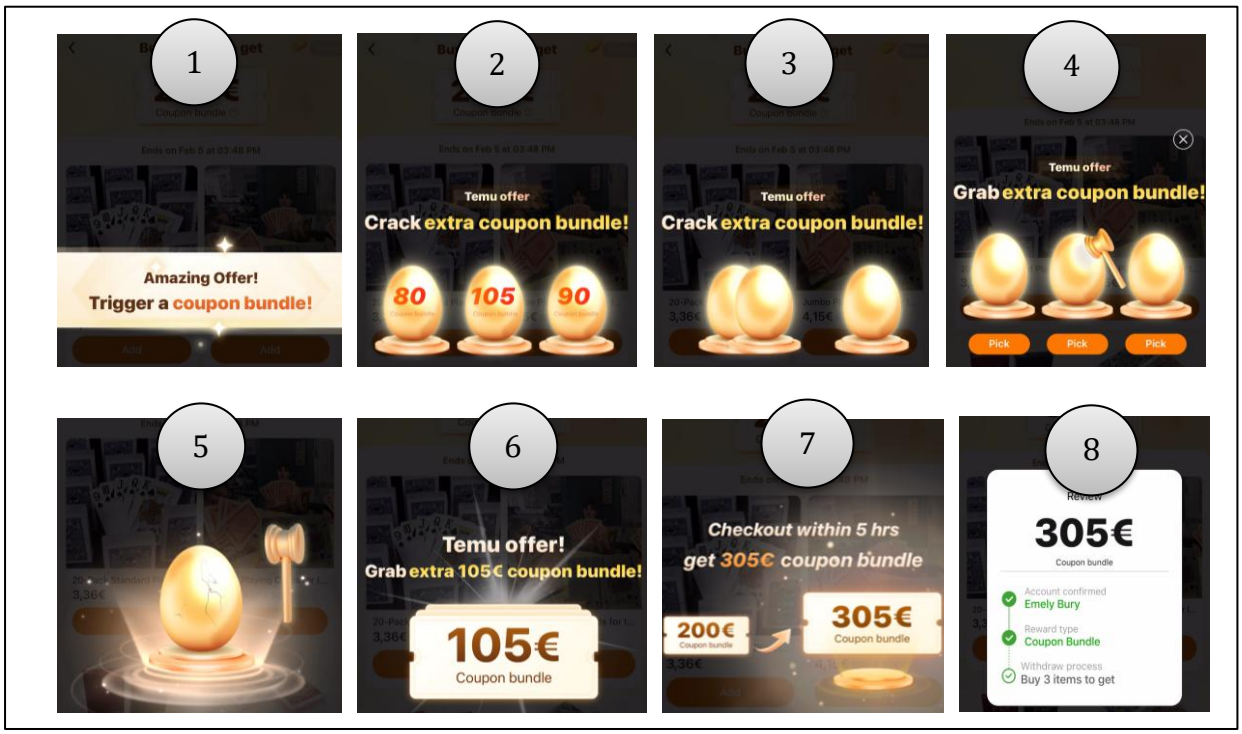

Figure 2: Temu Gamification Part Two (Crack-The-Egg)

The shopper is presented with the second gamification tool, a Crack-The-Egg game which offers prizes from 80€-105€ coupons (step 2). The numbers on the eggs disappear shortly after presenting themselves to the customer. The eggs then begin to switch places (step 3), before the consumer has to choose an egg to crack open based on their memory of the prizes they contain (step 4).

After selecting an egg and watching it crack (step 5), the user wins their coupon bundle (step 6). The extra discount is added to the previous coupons the customer won (step 7). Lastly, the app shows a progress bar, reflecting the shopper´s previous achievements in the event and any further steps that need to be taken (step 8).

4.1.3 Feature three: Hidden Coupons

Afterwards, the participant is redirected to the shopping page filled with pre-selected customized items to fulfil the last step in the event´s process: purchasing three items. This final step of Temu´s gamification process is showcased by figure 3.

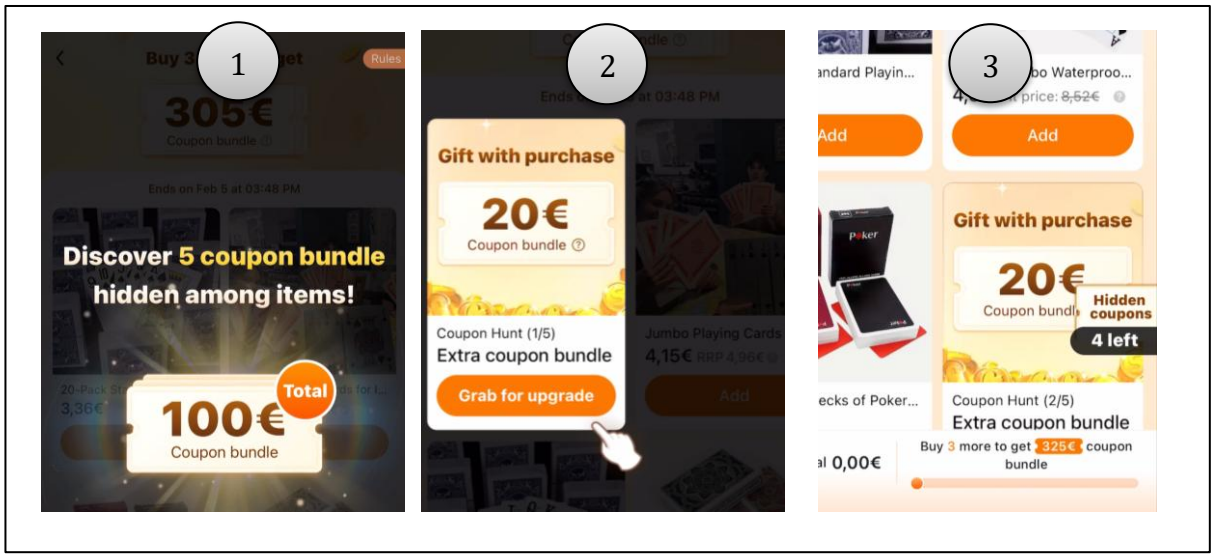

Figure 3: Temu Gamification Part Three (Hidden Coupons)

Before selecting items, the buyer is presented with a last gamification tool, the challenge of finding 100€ worth of hidden coupons (step 1). The game is explained by showing the customer one of said coupons and how to grab it for an upgrade (step 2). Now, the user is free to scroll on the page in the pursuit of finding three items to buy. Simultaneously the customer is urged to look out for the coupons hidden between items on the feed. An icon on the bottom right corner indicates how many coupons are left hidden (step 3). This urges the buyer to keep scrolling, even after adding the required three items into their basket.

During this process Temu uses ”progress bars”, to highlight the customer`s achievements and how far along in the process they are. After adding an item to the basket, the progress bar changes from no progress to one-third of the way, as depicted in figure 4.

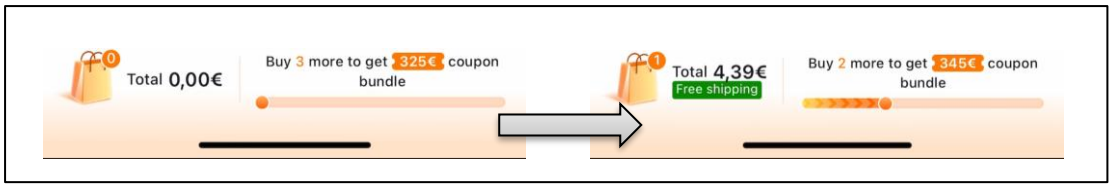

Figure 4: Temu Gamification Part Three (Progress Bars)

The progress bar gives the participant a clear overview of how many items they still need to pick, while constantly reminding them of the number of coupons at stake.

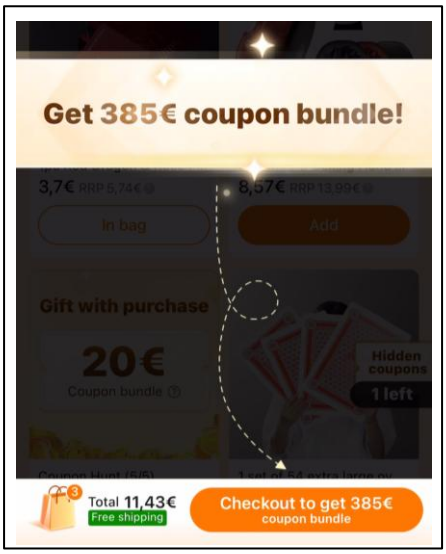

Figure 5: Temu Gamification Ending

Lastly, once the customer adds the last required item into their basket a rewarding message accompanied by fireworks and other animation features pops up. This message can be seen in figure 5. The progress bar in the bottom right corner then changes to a button labeled ”Check out to get X€ coupon bundle”. After clicking on said button the customer is directed to the checkout page and urged to finalise the purchase. The gamification event is now completed.

4.1.4 Social proofing

Occasionally, Temu additionally employs social proofing during their gamification events. This includes pop-ups stating things like ”*username* got 10€ coupons 4 minutes ago”. Social proofing, also referred to as ”herd-mentality” is used in instances where it can be uncomfortable or difficult for a customer to determine appropriate behavior. In these situations, users are likely to rely on the people around them to make the right decisions, and to copy their behavior. Phrases like the one mentioned above entice customers to keep participating in gamification features and to ultimately keep purchasing from the app. (Jain, 2024)

4.2 Temu´s sales-growth

Temu´s worldwide sales in 2024 were forecasted to reach $54 billion, which would have entailed a growth rate of 260% from the previous year, where the total sales reached

around $18 billion (Backlinko, 2024). Figure 6 shows the actual sales the company managed to reach that year.

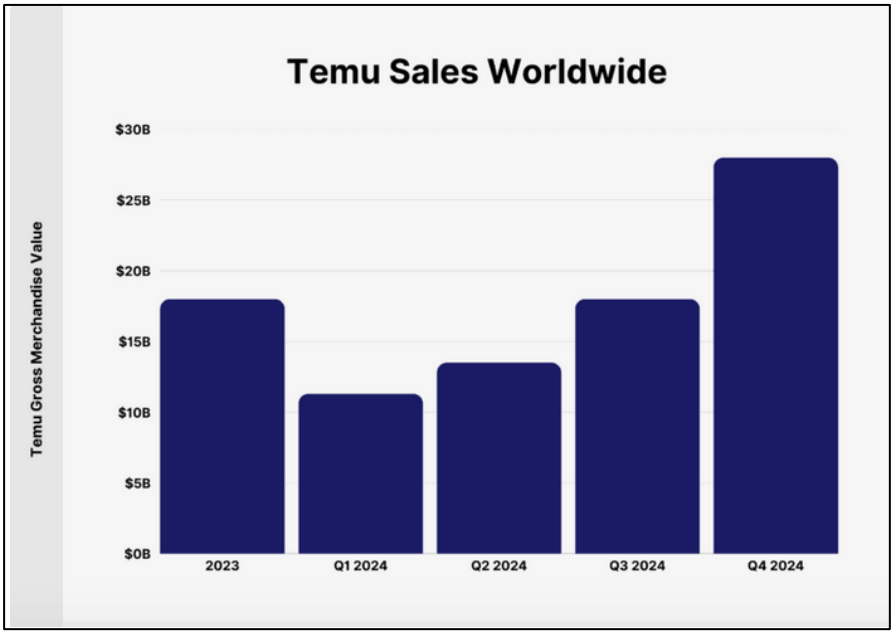

Figure 6: Temu Sales Growth Worldwide (Backlinko, 2025)

The company managed to outperform those forecasts drastically by reaching an estimated $70.8 billion in annual sales in 2024, making the annual sales growth rate as high as 293% (Backlinko, 2025). In Q1 of 2024 the estimated sales lay at $11.3 billion. In Q4 of 2024 Temu made more than double the sales of the year´s first quarter, an estimated $28 billion. (Backlinko, 2025)

4.3 Survey results

The survey was answered by 423 respondents and sent out to 5790 people, 5741 of which are students from the Novia University of Applied Sciences in Turku, Finland. The rest consists of German people from all age groups. This amounts to a response rate of 7.31%.

4.3.1 Demographic

After 22 days the online survey ”Bachelor Thesis: Customer Survey on Temu” was answered by 423 respondents. The first part of the survey aims to identify the demographic of its respondents, starting with age as seen in figure 7.

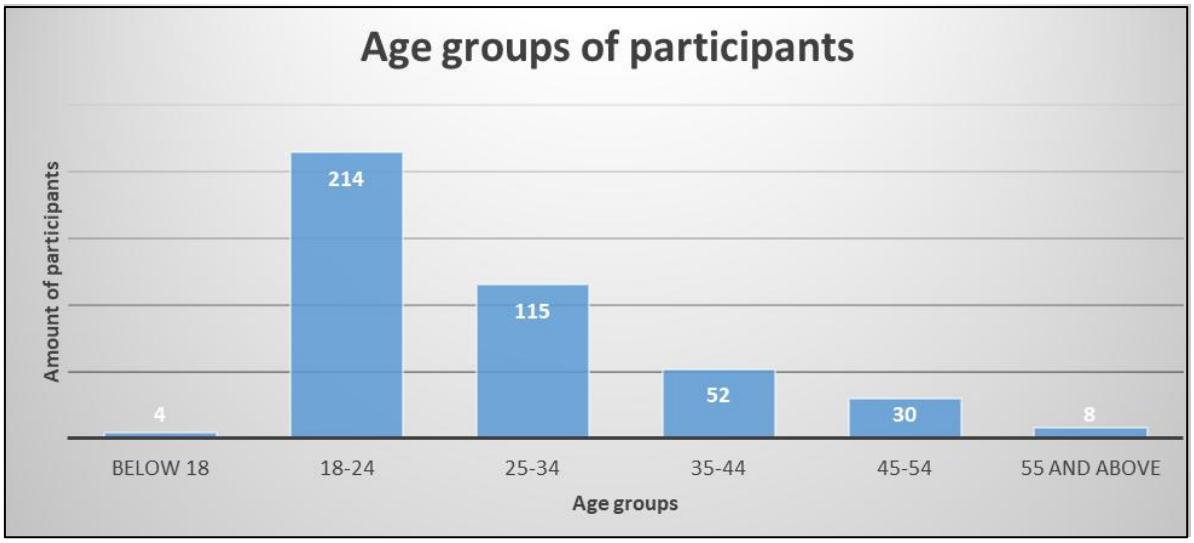

Figure 7: Survey Q1 "What is your age group?"

Slightly over half of the participants are in the age group 18-24, followed by around 27% in age group 25-34. This corresponds with Temu´s desired demographic. The company mainly targets GenZ shoppers, as they spend a monthly average of $250 on online shopping and over 75% of them display price sensitivity. (Li, 2023) Around 21% of the survey takers are aged 35 and above, and only four repliers are below the age of 18.

The following figure 8 showcases the gender distribution amongst the survey takers.

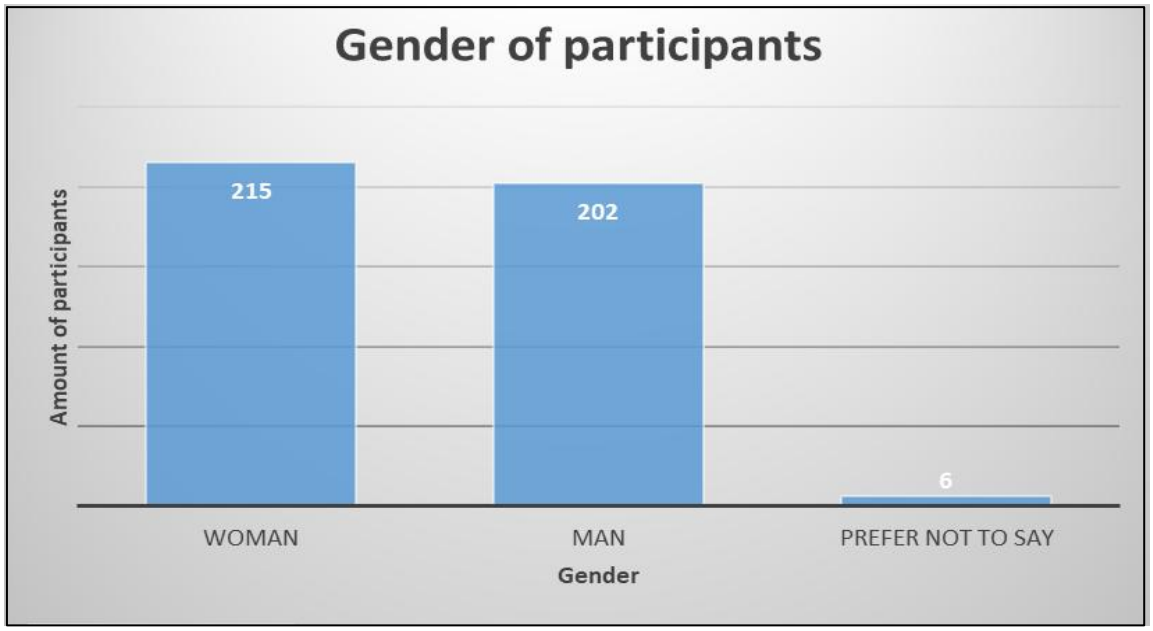

Figure 8: Survey Q2 "What is your gender?"

51% of the participants identify as female and 48% as male. Six respondents do not disclose their gender.

Figure 9 depicts the nationality of the survey-takers.

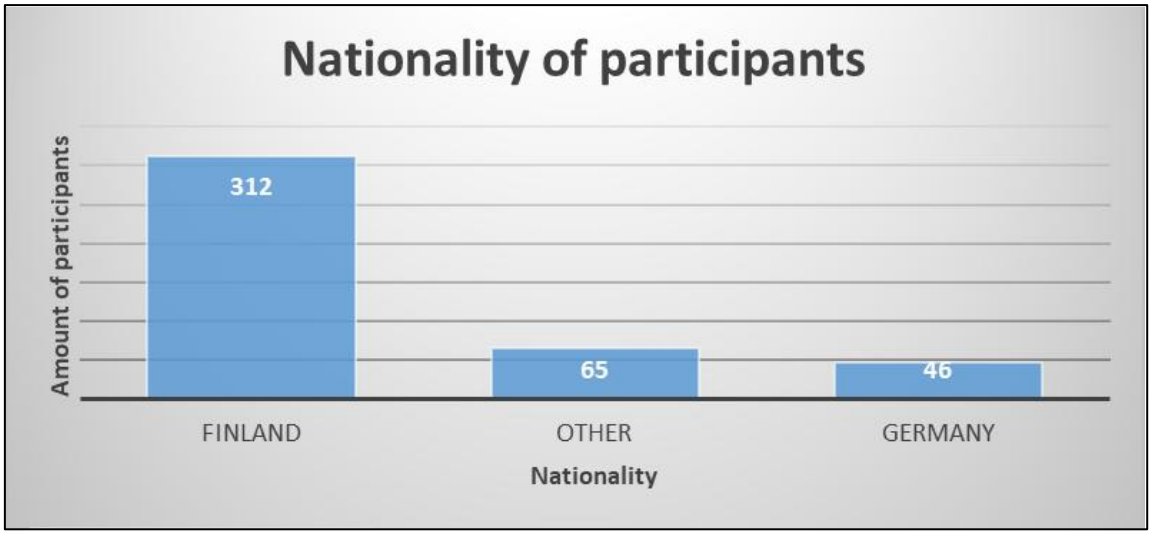

Figure 9: Survey Q3 “What country are you from?”

Most of the participants are from Finland, a total of 74%. 46 respondents are from Germany, which amounts to 11%. Another 15% of the survey takers are from other countries.

4.3.2 Narrowing participants down to Temu users

The next part of the survey aims to analyze the participant´s general relationship with online shopping and to identify whether the survey taker is familiar with the Temu app and has used the application before.

The following figure 10 showcases the frequency in which the participants believe they shop online.

Figure 10: Survey Q4 ”How often do you shop online?”

36% of the respondents claim to shop online less than monthly, followed closely by 35% of repliers that shop online around once per month. A further 24% of the survey takers shop online about once per week and only five percent more frequently than that.

Figure 11 demonstrates how price-conscious the participants define themselves to be.

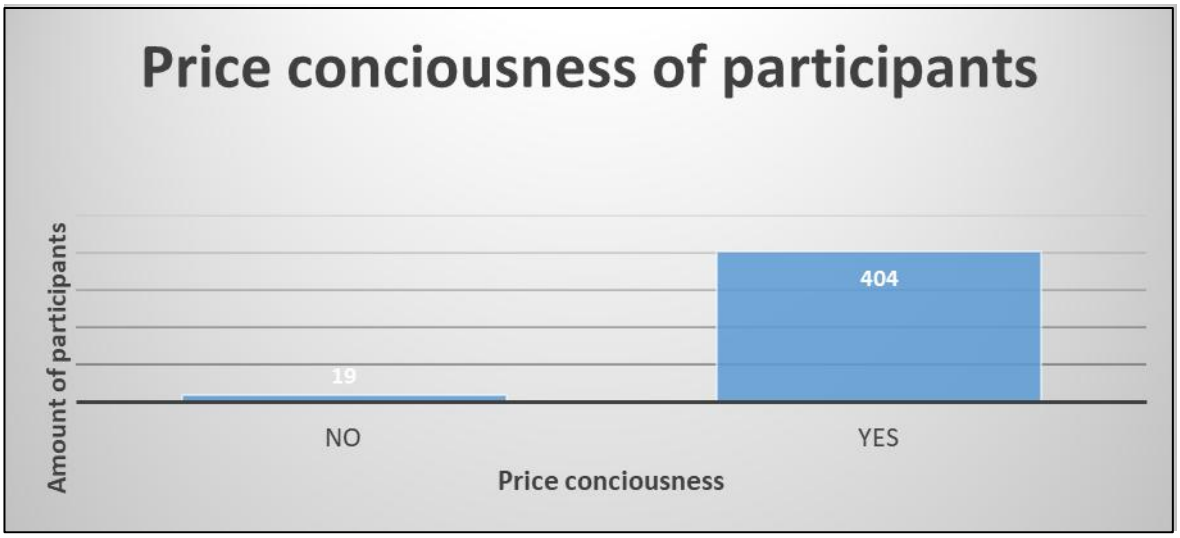

Figure 11: Survey Q5 “Are you price conscious while shopping?”

A large majority of 96% claim to be price-conscious while shopping. Only four percent view themselves as price unconscious.

In this stage of the survey the participants were also asked about their relationship with gamification for the first time. Figure 12 describes how often the respondents engage with gamification features while shopping online.

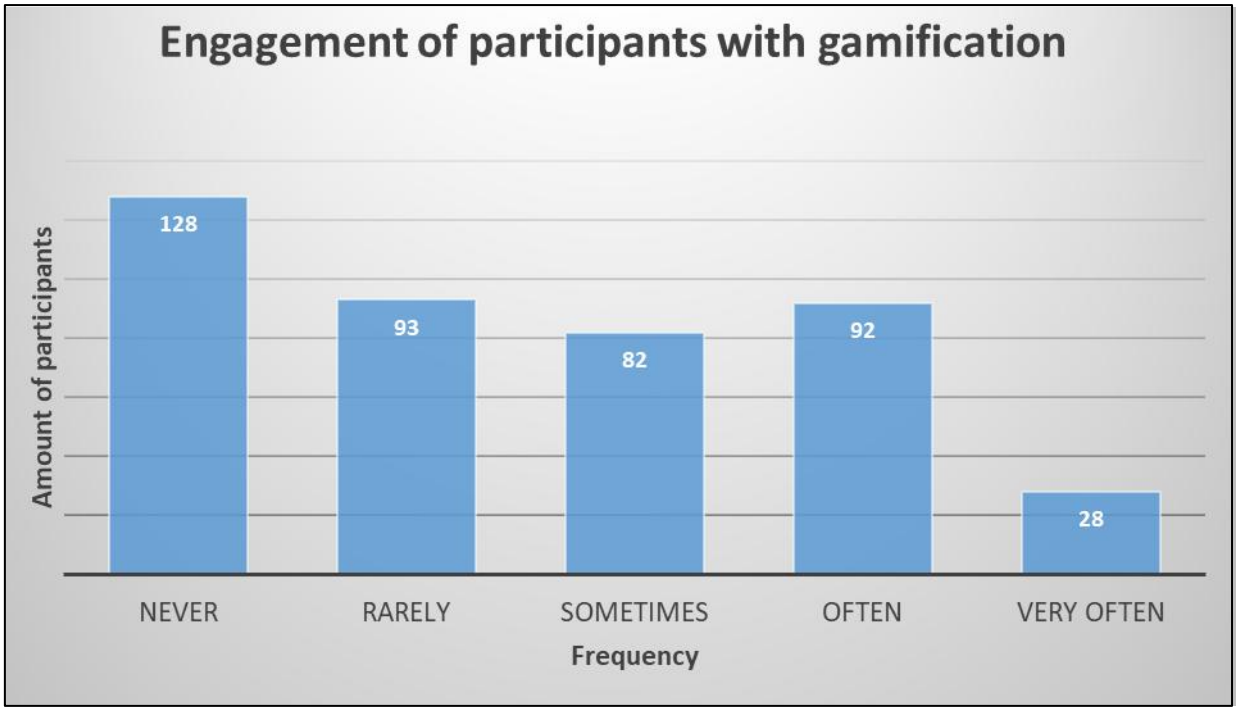

Figure 12: Survey Q6 ”How often do you engage with gamification features?”

30% claim to never engage with any gamification features while shopping online, 22% only rarely engage with gamification tools. 19% of the repliers sometimes encounter gamification features. However, 22% of the survey takers engage with gamification often while shopping online, and seven percent even claim to interact with them very often.

The next survey question, showcased in figure 13 aims to differentiate between survey takers that use Temu and those that do not, to narrow the pool of participants down to Temu users.

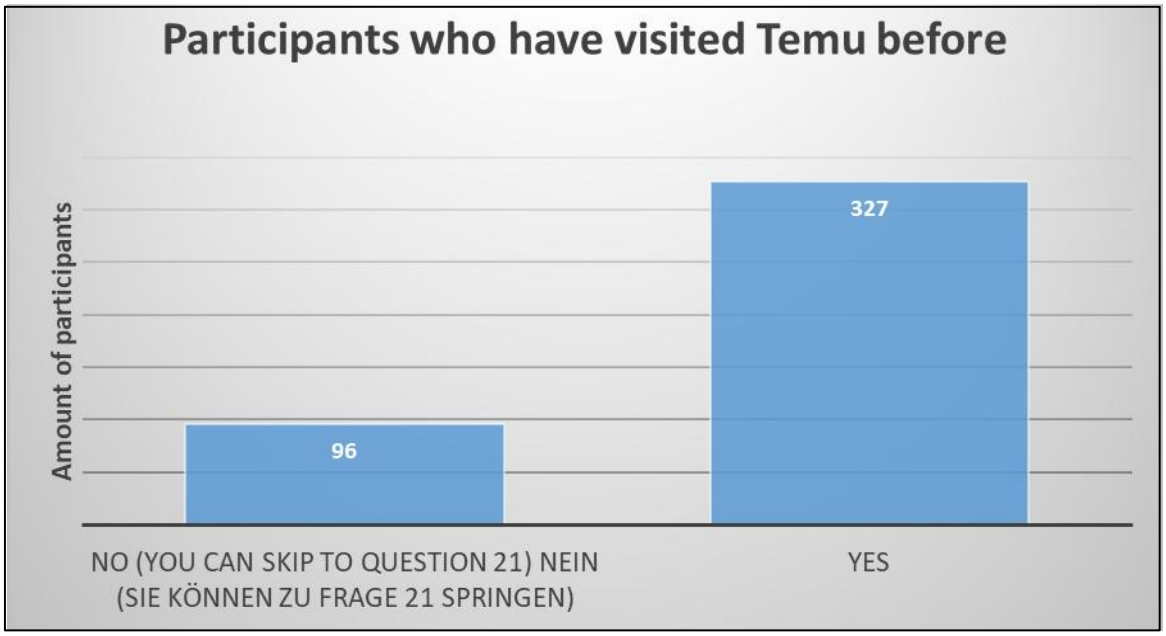

Figure 13: Survey Q7 ”Have you ever visited Temu´s platform or app?”

Figure 13 shows that 77% of the survey takers have visited the Temu platform or application before. The 23% of repliers that have never encountered the company Temu are now asked to skip to the final part of the survey that consists of a gamification simulation. This way the Temu users´ relationship with gamification can be examined further in the third part of the survey.

4.3.3 Temu users’ relationship with gamification

The third part of the survey is meant to analyze only those respondents that use Temu, and their relationship with Temu´s gamification in more detail. In this part of the survey, only the survey-takers that claim they have visited the Temu platform or application before in Question 7 provide answers. Those that are not familiar with the company and answered Question 7 with “No” do not participate in this part. For this reason, the number of respondents and answers is lower in this survey section.

The following figure 14 depicts how many of those participants have made a purchase on Temu before.

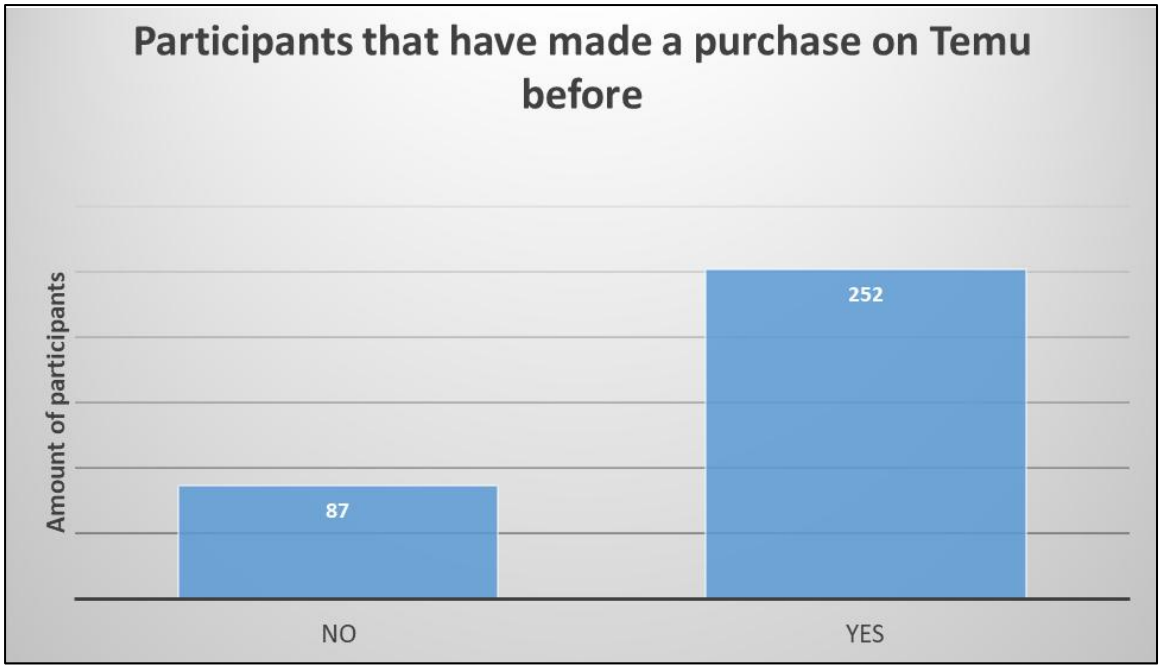

Figure 14: Survey Q8 “Have you ever made a purchase on Temu´s platform or app?”

Of the remaining respondents 74% declare they have made a purchase from Temu before, this is equivalent to 252 repliers. The other 26%, which now amounts to 87 participants, have never made a purchase on Temu´s platform or app before. They have, however, as stated in question 7, visited the Temu application or platform before, which makes their answers and opinions regarding the gamification implementations relevant.

Figure 15 describes how the respondents got to know the company Temu.

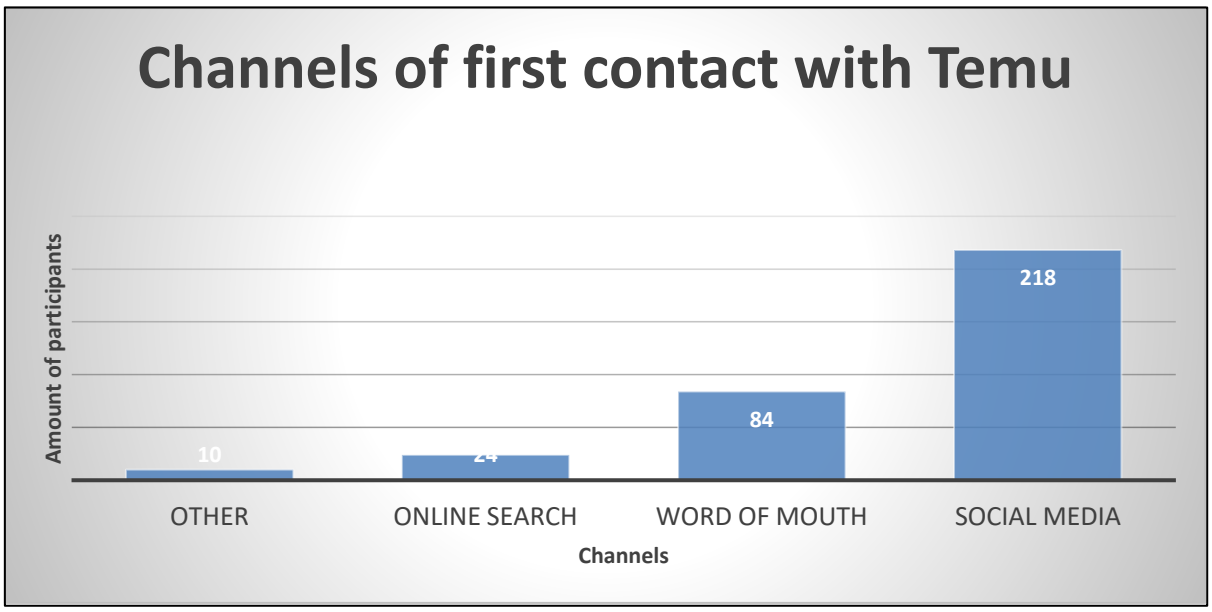

Figure 15: Survey Q9 “How did you first hear about Temu?”

A majority of 65% declare they first heard about Temu via social media. 25% state they got to know the brand via word-of-mouth. Only seven percent found out about Temu through their own online search or through other ways. This corresponds with Temu´s marketing strategies. The company mainly focuses on digital marketing techniques, including social media advertising and affiliate marketing. (Li, 2023)

The next survey question analyses which gamification features the respondents interact with the most on Temu. Survey takes were able to select one of the gamification features, their choices are depicted in figure 16.

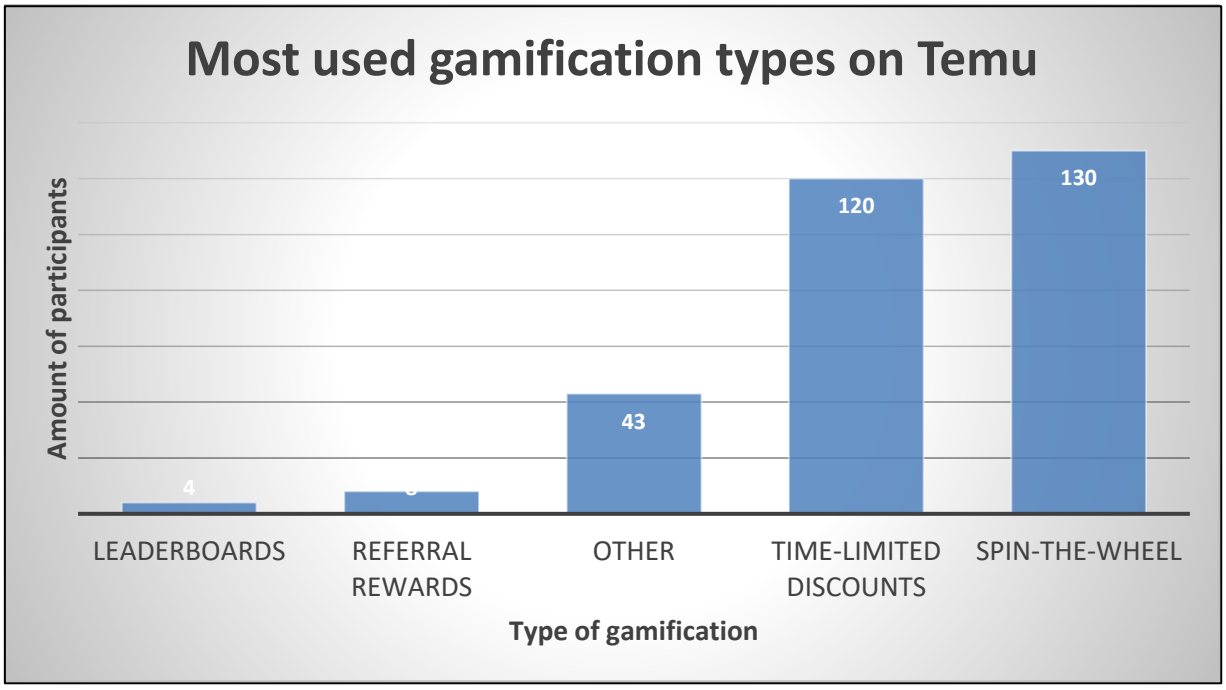

Figure 16: Survey Q10 ” Which gamification features do you engage with the most on Temu?”

Figure 16 displays that the gamification feature used most by participants of the survey is ”Time-limited discounts”. 42% claim that this is the feature they engage with most often. This is followed by 38% that use the ”Spin-The-Wheel” game most frequently. 12% use ”other” gamification tools (see chapter 3.4.5) most often on Temu. Only seven percent mention ”Referral rewards” as their two most used gamification tools, and only seven repliers mention ”Leaderboards”.

After assessing which gamification features Temu users engage with the most, the survey explores the frequency in which the respondents use the gamification features, while on the Temu platform or app. These results are shown in figure 17 below.

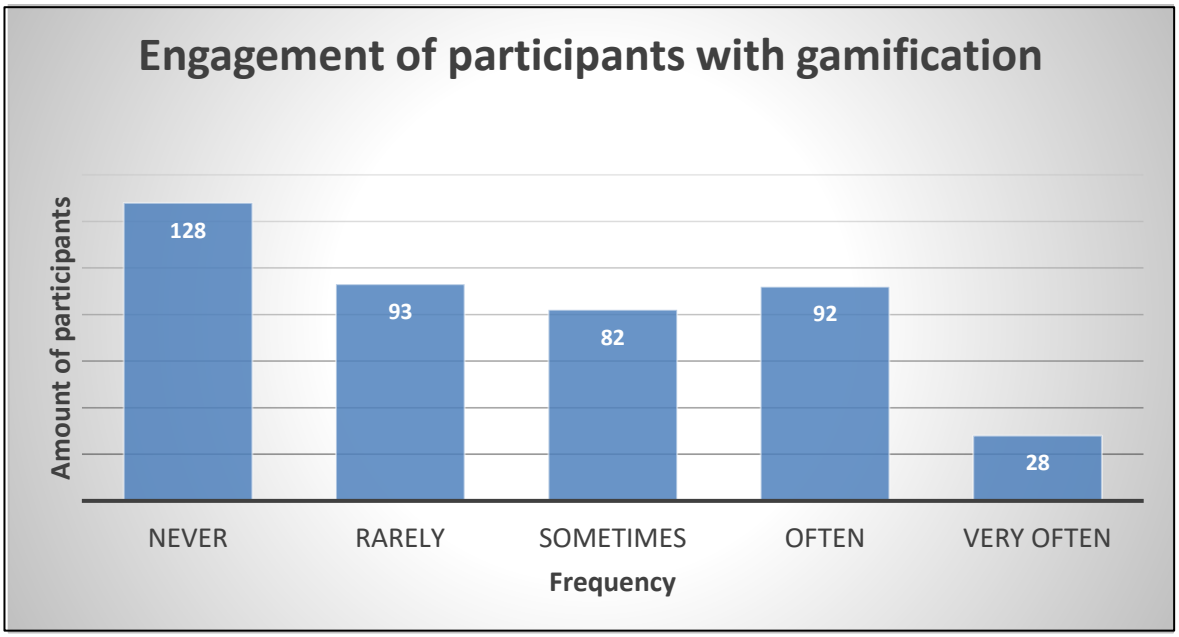

Figure 17: Survey Q11 ”How often do you engage with Temu´s gamification features when on the app?”

As depicted in figure 17 the repliers´ answers vary a lot. 27% claim to never use gamification tools while on the Temu app, followed by 15% who use them rarely. 12% declare they use the features sometimes. However, the largest group of 34% state they use Temu´s gamification features often while they are on the app. 13% even assert, they use them every single time they are on the app or platform.

When asked if the gamification features on Temu make the shopping experience more enjoyable the survey takers had very different responses, as seen in figure 18.

Figure 18: Survey Q12 ”Temu´s gamification features make shopping more enjoyable.”

17% strongly disagree and 14% disagree with the statement. 21% claim to be neutral. However, more respondents agree (41%) or even strongly agree (7%) than disagree with the statement that gamification makes the shopping experience on Temu more enjoyable.

Next, the participants were asked to define how much the gamification features influence their likelihood of making a purchase with Temu. Figure 19 illustrates their responses.

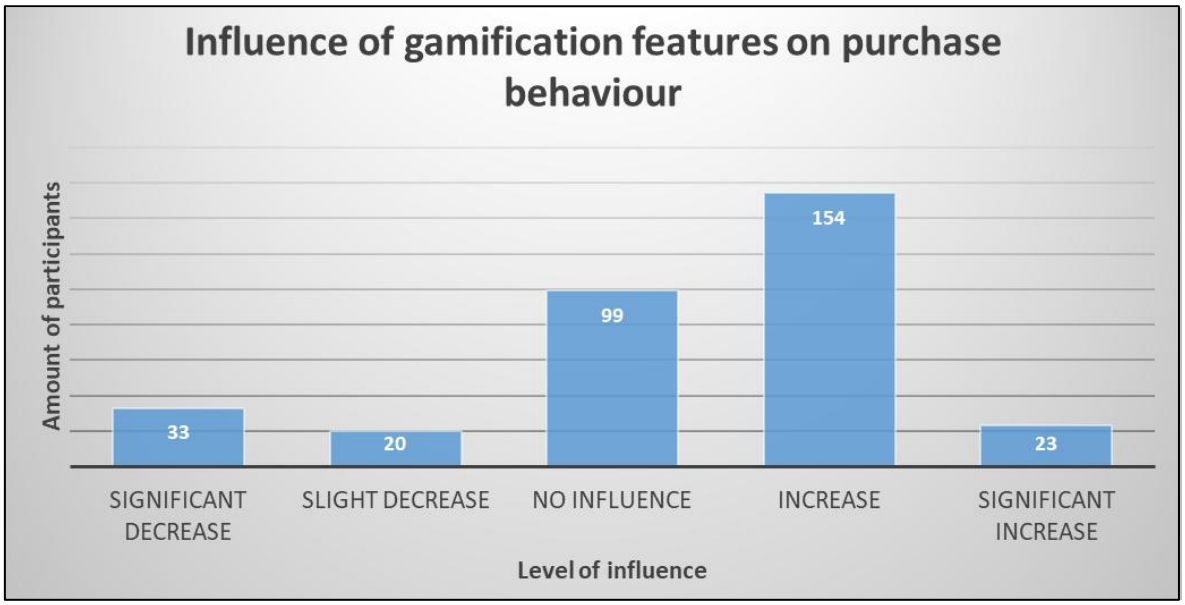

Figure 19: Survey Q13 ” How do the gamification features on Temu influence your likelihood to buy something?”

As figure 19 depicts, most of the respondents state that the gamification features increase (47%) or even significantly increase (7%) their likelihood of buying something from Temu. 30% of repliers claim the gamification tools have no influence on their purchasing behavior. Six percent state they cause a slight decrease in their likelihood of buying something, while 10% even claim a significant decrease.

When the survey takers are asked whether Temu´s gamification features ever lead them to make an unplanned purchase the results varied drastically. This can be seen in figure 20 below.

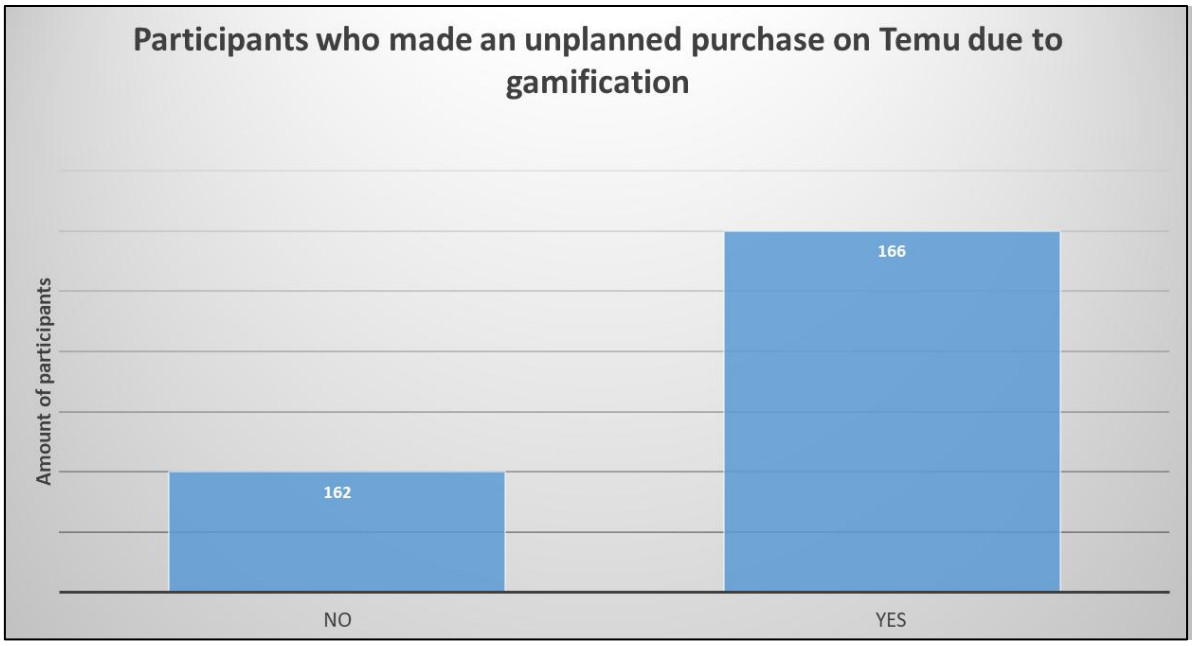

Figure 20: Survey Q14 ”Have you ever made an unplanned purchase on Temu due to a gamification feature?”

51% of respondents claim the gamification features have led them to make an unplanned purchase before, while 49% state the opposite.

In the next question, depicted in figure 21, the participants were asked to rank what motivates them to participate in gamification features on Temu.

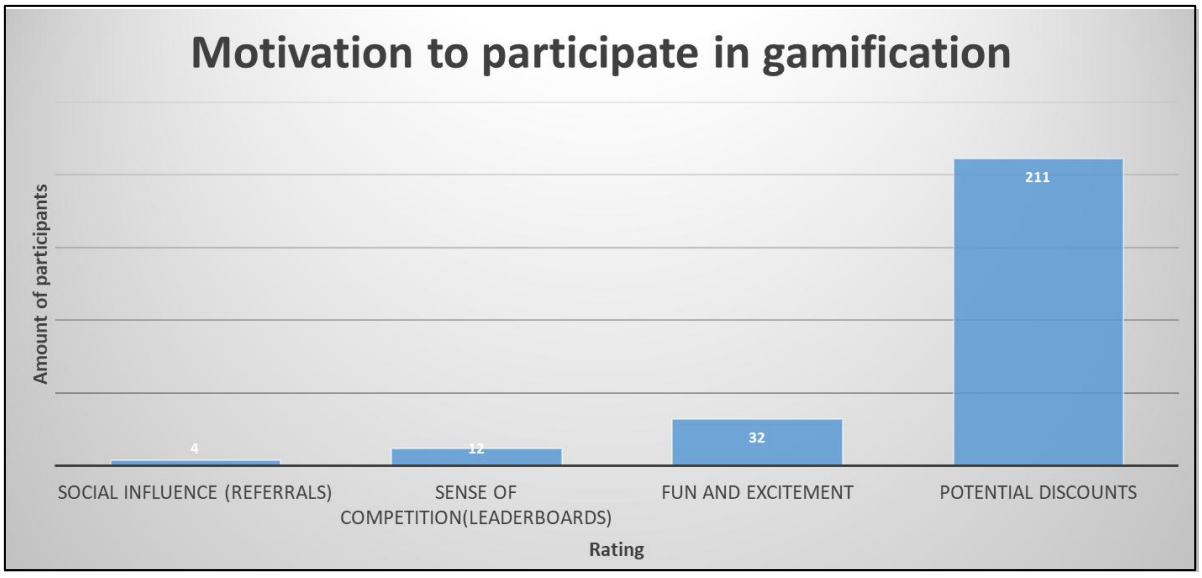

Figure 21: Survey Q15 ” What motivates you the most to participate in gamification features on Temu?”

As Figure 21 shows, the motivational factor number one is ”potential discounts”. This is followed by ”fun and excitement”. ”Sense of competition” and ”social influence” were ranked similarly, with ”sense of competition” only slightly surpassing ”social influence”

The survey takers rated their overall experience with Temu´s gamification on average with 3.21 out of five stars. The specifics of the rating are showcased in figure 22.

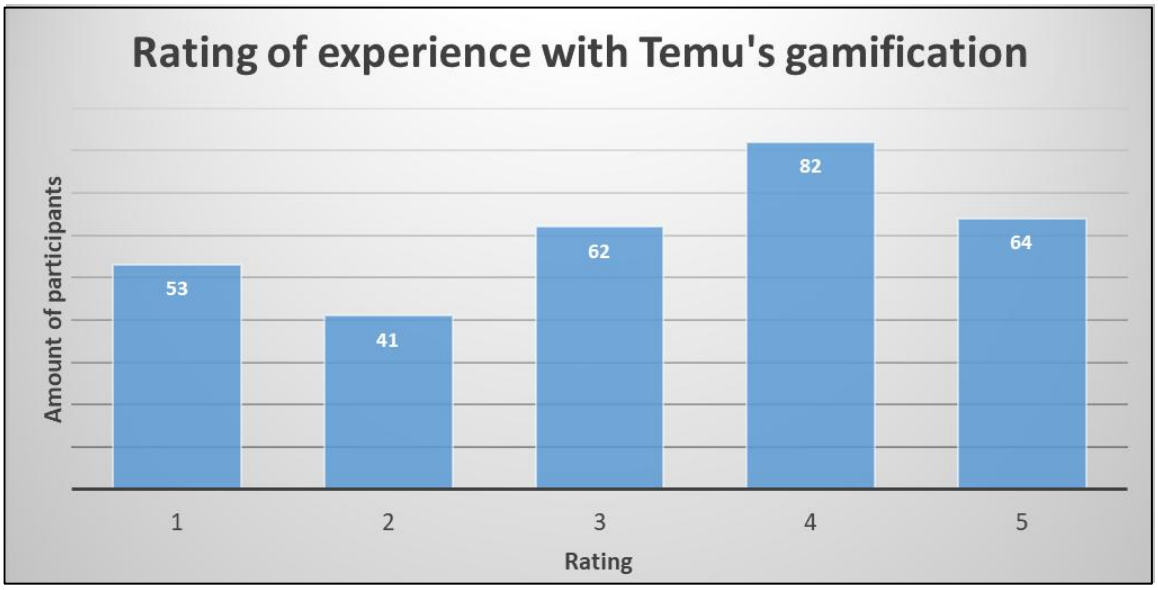

Figure 22: Survey Q16 ”Evaluate your overall experience with Temu´s gamification features.”

Of the 302 respondents that answered this question around 21% gave Temu´s gamification features five stars. Around 27% rated their experience with four stars. However, while over 50% rated their experience with four or five stars, around 18% only gave their experience with gamification on the Temu app one star.

In the next question the participants were asked to rate how likely they are to recommend Temu based on its gamification features alone, with the net promoter score.

This score is a common metric for analyzing customer loyalty. It highlights how likely customers are to recommend a business based on certain criteria. The customers are asked to rate said likelihood on a scale from zero to ten. Customers that give a rating between zero and six are called detractors, they are seen as unhappy and improvement worthy. Customers that rate from seven to eight are seen as passives, that are satisfied but unenthusiastic. Anyone rating between nine and ten is seen as a promoter that is vocal about their enthusiasm. (Qualitrics, 2025)

The following figure 23 shows the results of this rating.

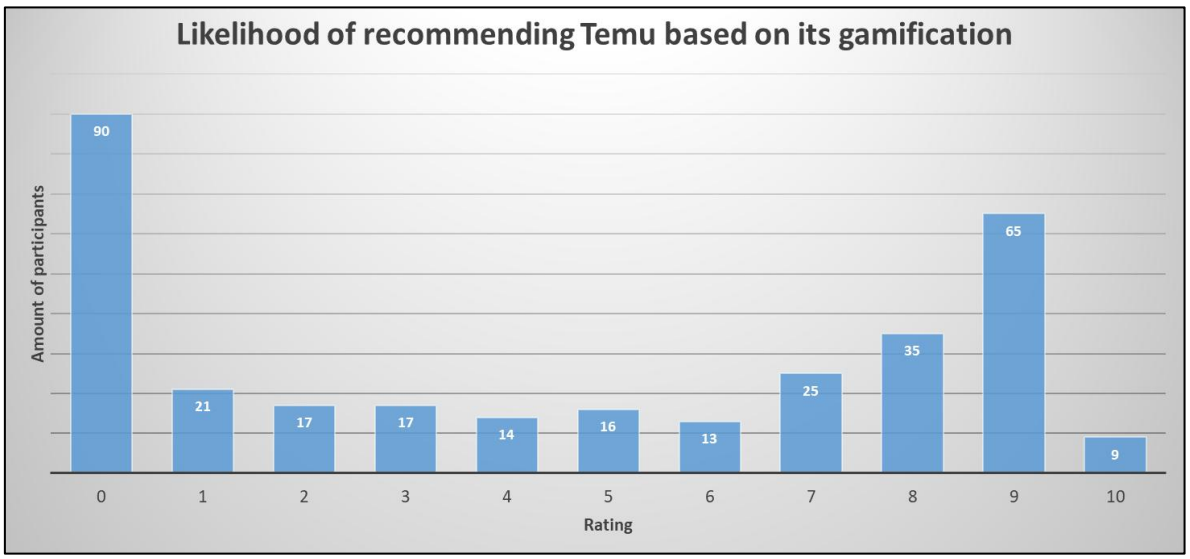

Figure 23: Survey Q17 ”How likely are you to recommend Temu?”

Of the 322 respondents 74 are classified as promoters, 60 as passives and 188 as detractors, as seen in figure 23. This means, around 41% rate their likelihood of recommending Temu based on its gamification features with seven or up and are classified as satisfied with the company based on its gamification use.

In the following question the survey takers were asked to rank how happy they are with the level of personalization on the Temu app and platform. figure 24 showcases this ranking.

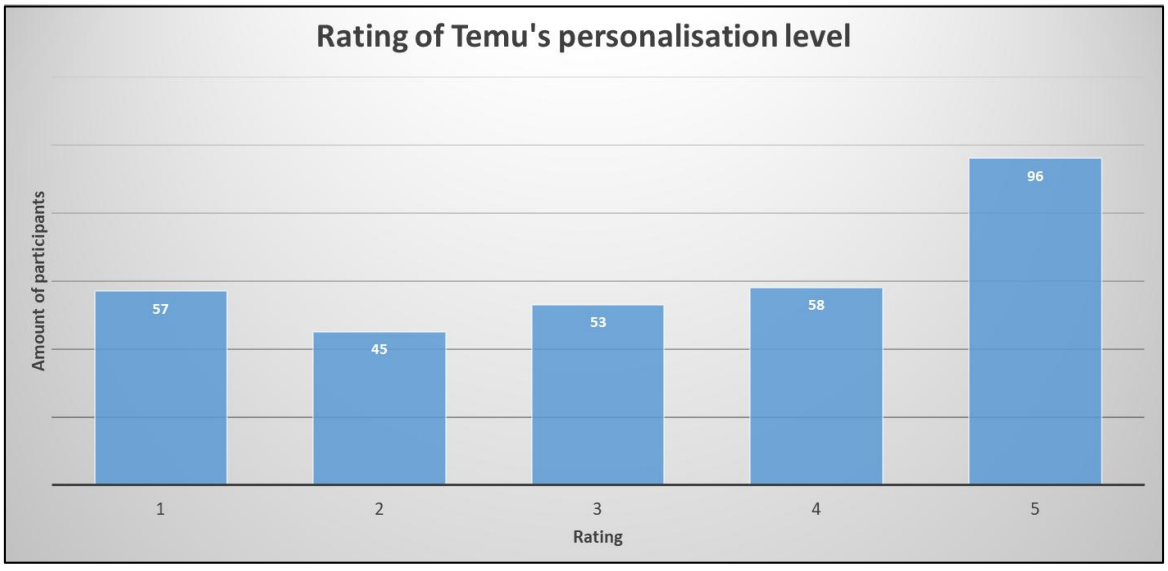

Figure 24: Survey Q18 ”How happy are you with the personalization level on Temu?”

The overall average ranking lies at 3.29 out of five stars. Of the 309 repliers around 31% give the best possible rating of five stars. Around 36% give a rating of three or four stars. However, around 33% rank the personalization level below average with two or less stars.

The respondents are now asked to estimate how much their spending on Temu has increased due to the gamification features. Their responses are illustrated in figure 25.

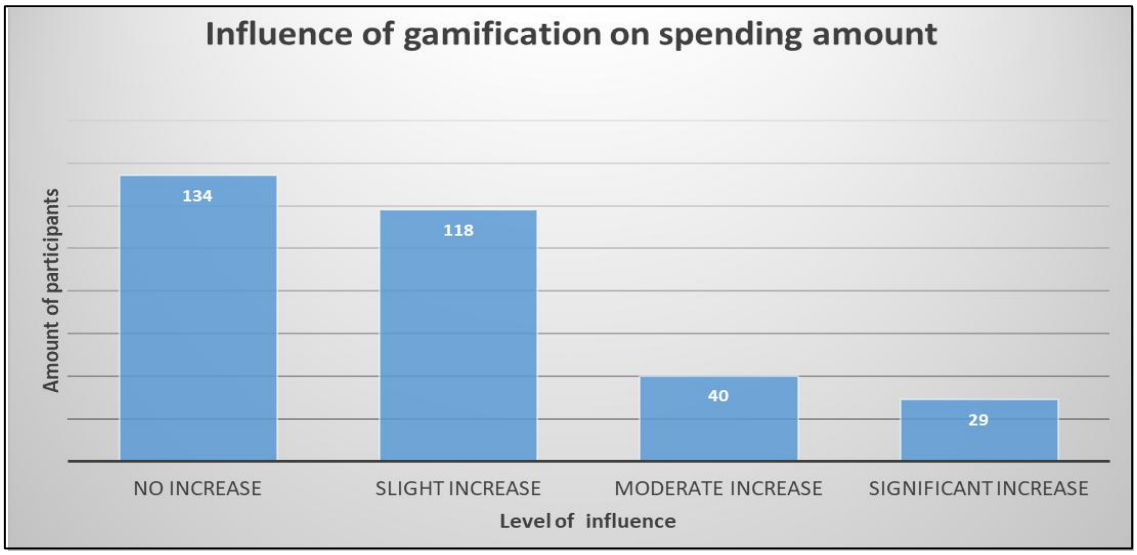

Figure 25: Survey Q19 ”Estimate how much your spending on Temu has increased due to gamification features.”

42% of survey-takers claim their spending was not increased. 37% note a slight increase in the amount they are spending with Temu. 12% of the participants declare there is a moderate increase in their spending and 9% note a significant increase.

When asked what emotions the survey takers associate with Temu´s gamification features the answers varied drastically, as shown in figure 26.

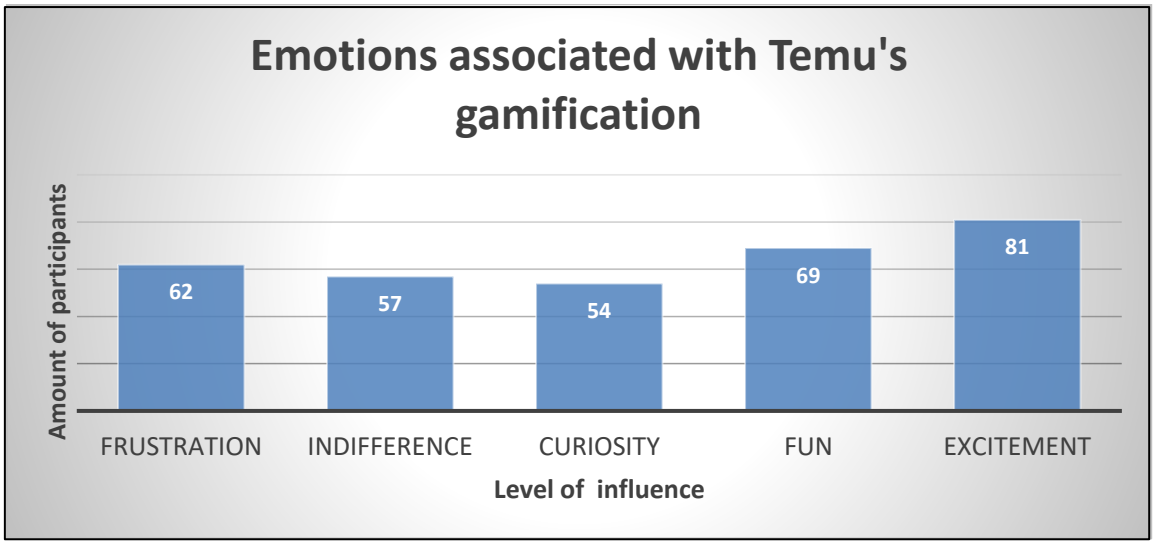

Figure 26: Survey Q20 ”What emotions do you associate with Temu´s gamification?”

However, the positive emotions ”fun” (21%), ”excitement” (25%) and ”curiosity” (19%) outweigh the negative emotions like ””frustration” (17%) and ”indifference” (17%).

4.3.4 Gamification simulation

This last part of the survey was mandatory for all participants, including those that are unfamiliar with the company Temu. It is a small simulation of the first part of the gamification process Temu employs on their app, the Spin-The-Wheel game. To simulate the experience the survey-takers were presented with the following screenshot of the Temu app.

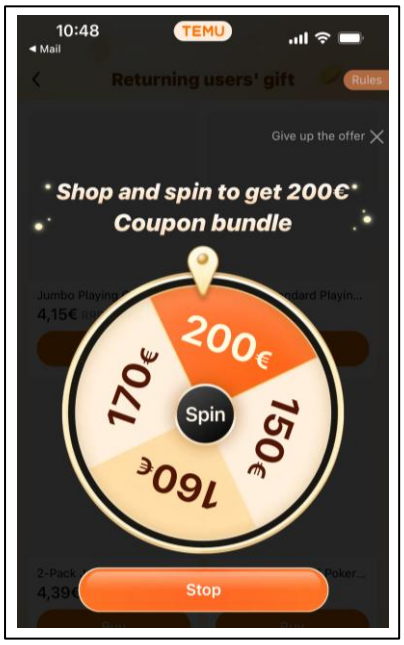

Figure 27: Survey Question 21 Picture shown to survey-takers

They are now asked what their reaction to such a situation would be: “Imagine you open the Temu app and see this spin-the-wheel-game: How do you act?” They are provided with three options. Figure 28 showcases the results of the first simulation part.

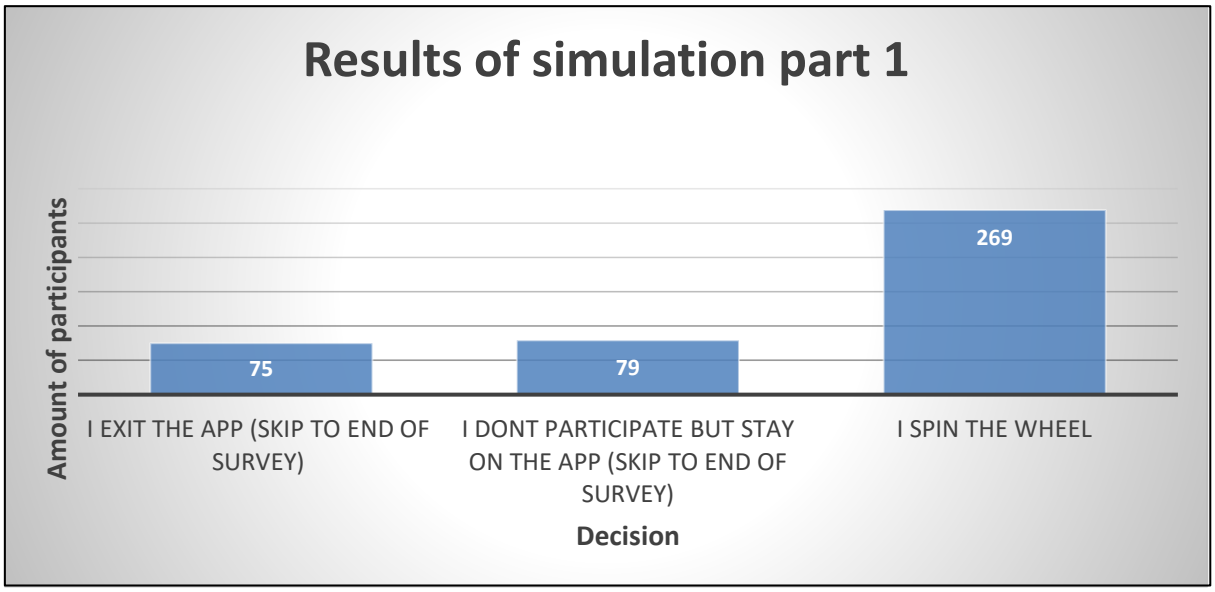

Figure 28: Survey Q21 Simulation Part 1

Most participants (64%) choose option three, to spin the wheel. 19% claim to react by choosing option one, so not participating but staying on the Temu app regardless. 18% of the repliers state they would choose option two and exit the app if they were presented with the situation depicted on the screenshot. Respondents that choose any option other than to spin the wheel are now asked to skip the last question and to close the survey.

The survey-takers that would choose to spin the wheel are now presented with a second screenshot. Said screenshot (figure 29), depicts what their screen would look like after spinning the wheel. They are informed they need to purchase three items from a pre-selected pool of goods to claim their 200€ discount: “You got the discount code! If you buy three items in the next 2 days, you get the 200€ code. What do you do?”

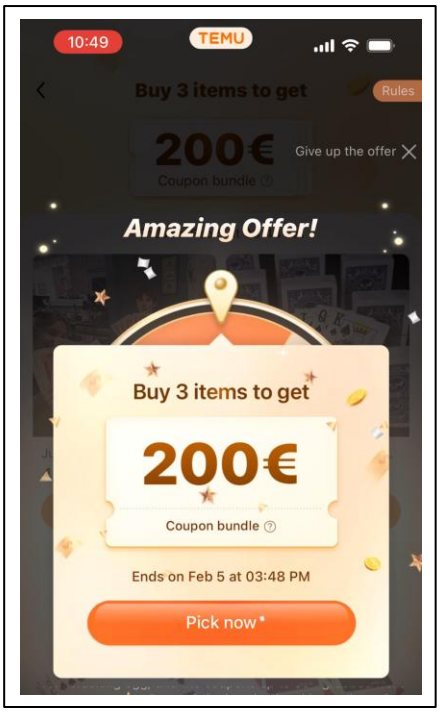

Figure 29: Survey Question 22 Picture shown to survey-takers

Once again, the participants are presented with three different options to choose from as a reaction to the new situation. They can either choose not to claim their coupons, as they do not feel inclined to buy three items to receive them. Alternatively, they can buy three items they need from the pool of pre-selected goods, or they can purchase three random, cheap items to get the coupons as quickly as possible. The choices are showcased in figure 30.

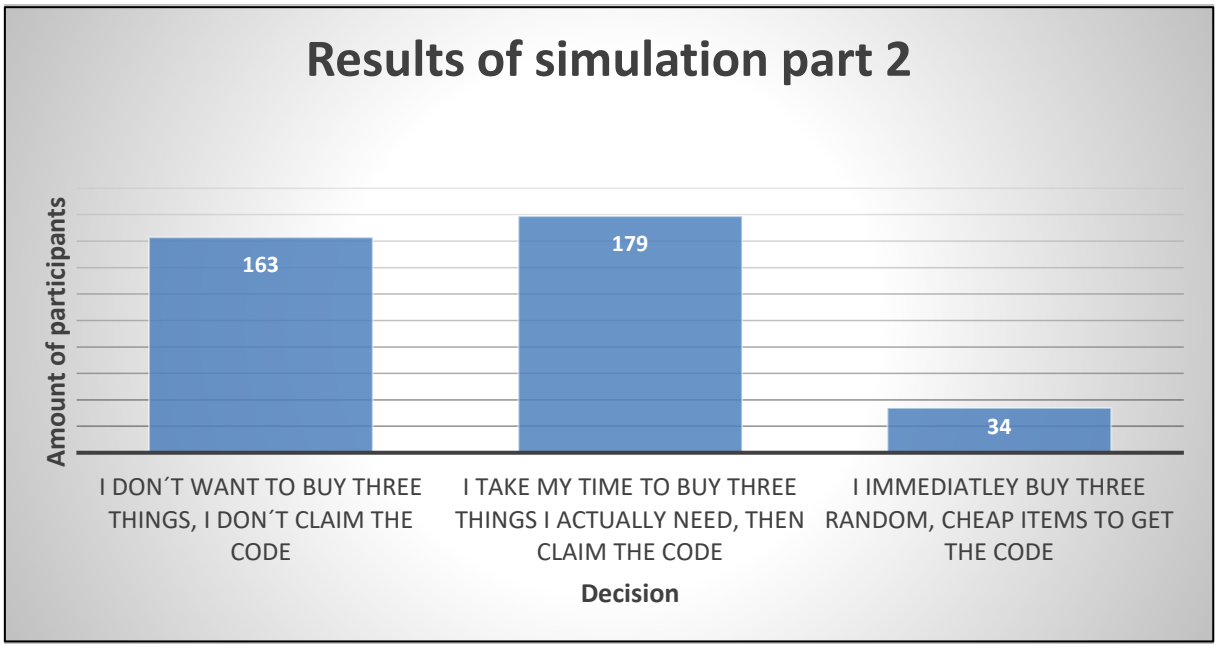

Figure 30: Survey Q22 Simulation Part 2

As figure 30 depicts, 43% choose not to claim the discount they previously won during the Spin-The-Wheel game, as they do not want to purchase three items to claim it. However, 48% state they would take their time to select three items they have a need for from the pool of available goods, purchase them and then claim the coupons. 9% of the participants even declare they would go so far as to purchase three random items from the pre-selected pool of goods, that they possibly do not even need or would not purchase otherwise, to claim the 200€ discount code.

4.4 Analysis of case study

After establishing the survey results, this section of the thesis focuses on the interpretation of the findings by drawing connections between consumer responses and the existing literature on AI-driven gamification from the literature review. This analysis aims to identify patterns, correlations, and theoretical as well as practical implications by comparing survey data with established research.

4.4.1 Interpretation of findings

The following subsections will evaluate how gamification influences consumer behavior, particularly in the context of Temu's marketing strategies. By examining key factors such as purchase frequency, likelihood of impulse buying, as well as the effects on spending behavior and customer engagement this analysis will provide insights into the extent to which gamification contributes to Temu's rapid growth and consumer retention and thereby answer the research questions.

Gamification engagement vs. purchasing frequency

The data collected through the survey suggests a strong correlation between gamification engagement and purchase activity. figure 31 shows the connection between which respondents have made a purchase on Temu before and the survey-takers' level of engagement with gamification. It depicts the following two survey questions:

Q11: "How often do you engage with Temu's gamification features?"

Q8: "Have you ever made a purchase on Temu's platform or app?"

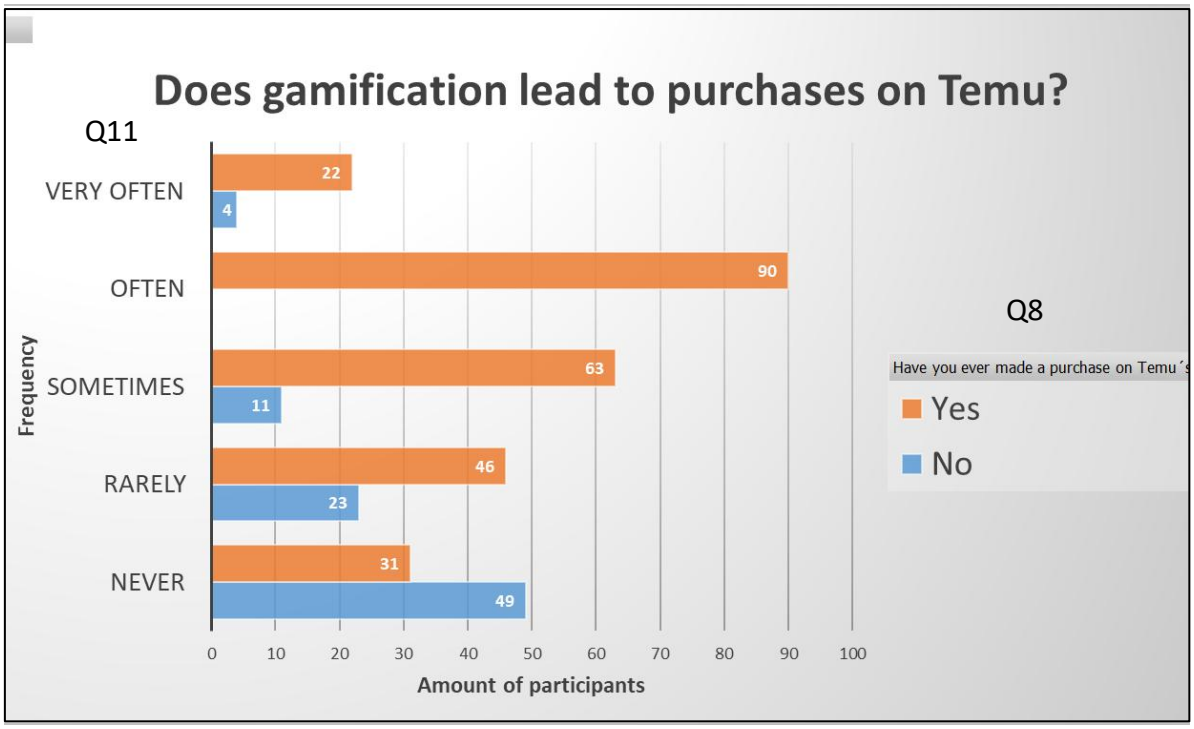

Figure 31: Does gamification lead to purchases on Temu?

Survey results indicate that users who frequently engage with gamification features are more likely to have made a purchase on Temu's platform. This aligns with Bezzina and Dingli (2023) who emphasize that AI-driven gamification fosters habit formation and customer retention while increasing repeat purchases and long-term consumer loyalty.

The findings support the argument that engagement with personalized game-like mechanics reinforces purchasing behavior, which makes gamification an effective tool for conversion optimization in e-commerce.

Time-limited features vs. impulse buying

After laying the foundation with the previous correlation by highlighting the link between gamification engagement and purchases, taking a closer look at the individual gamification features and their impact is interesting.

The survey results suggest the type of gamification tool that customers engage with the most effects their purchase behavior. Figure 32 shows the connection between the most used gamification type by the survey taker and how likely they are to make an unplanned purchase. It uses the following survey questions:

Q10: "Which gamification features do you engage with the most?"

Q14: "Have you ever made an unplanned purchase on Temu due to a gamification feature?"

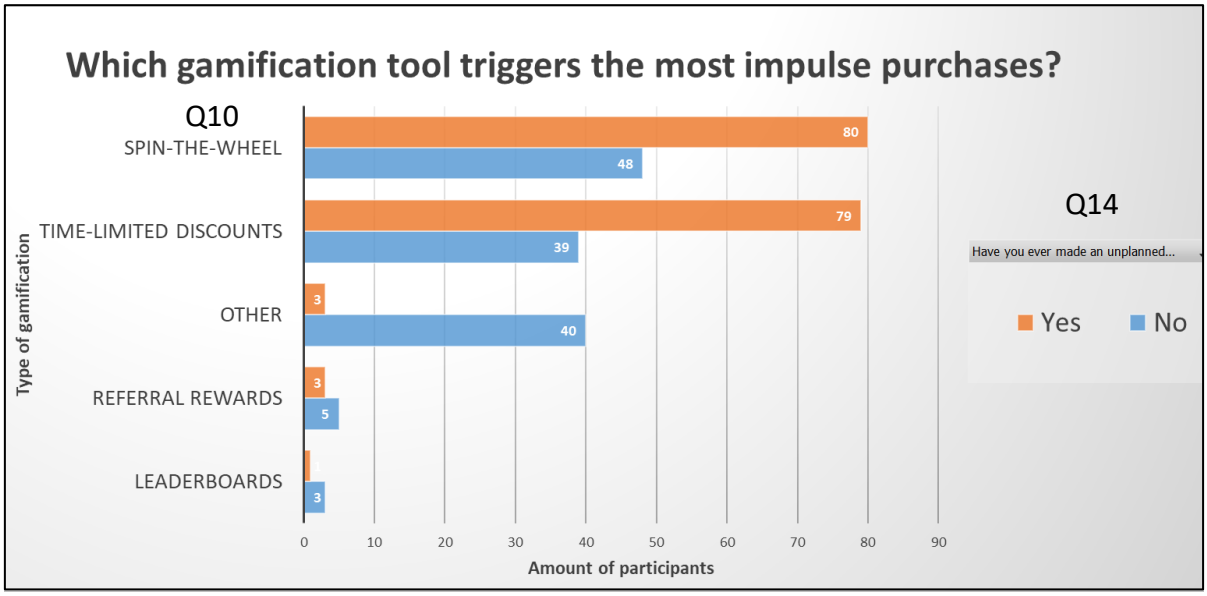

Figure 32: Which gamification tool triggers the most impulse purchases?

Survey respondents who engage the most with time-sensitive gamification elements, such as countdowns, time-limited discounts and flash deals, are more likely to make impulse purchases on Temu. This is consistent with research by Roy and Jain (2022), which highlights that scarcity-based marketing strategies create a sense of urgency while leveraging loss aversion to encourage immediate purchases.

The presence of countdown timers and time-limited rewards on Temu demonstrates how AI-driven gamification manipulates consumer decision-making, leading to spontaneous transactions that might not have otherwise occurred.

Emotional response to gamification vs. purchasing behavior

After inspecting the effect certain gamification tools have on impulse buying other contributing factors like emotions need to be considered.

The survey results suggest the emotional aspect of gamification plays a pivotal role in shaping consumer behavior. Figure 33 illustrates the link between emotions associated with gamification and the likelihood of making unplanned purchases on Temu. The figure shows two survey questions:

Q20: "What emotions do you associate with Temu's gamification features?"

Q14: "Have you ever made an unplanned purchase on Temu due to a gamification feature?"

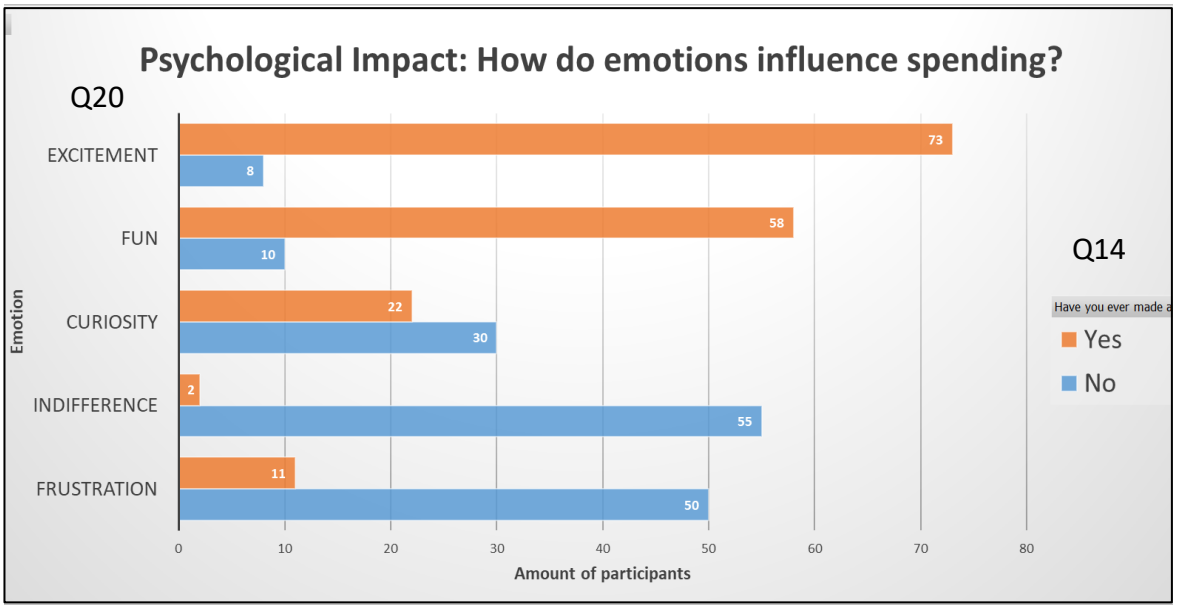

Figure 33: Psychological impact: How do emotions influence spending?

According to the survey results positive emotions like excitement and fun are more commonly associated with gamification than frustration or indifference. Furthermore, the results indicate that survey-takers who associate positive emotions with gamification are more likely to make unplanned purchases on Temu. This corresponds with findings by Pazii (2024), who suggests that AI-driven gamification triggers dopamine release, which reinforces engagement and impulsive decision-making.

This correlation between emotionally engaging mechanics and higher spending behavior confirms that gamification not only enhances the shopping experience but also serves as a psychological trigger for purchasing.

Gamification enjoyment vs. spending increase

Now, it needs to be analyzed whether associating positive emotions with gamification has an impact, not only on impulse purchases but on spending in general.

Table 1 shows the connection between how respondents feel about gamification and how much they think their spending has increased as a result of participating in gamification.

The table shows this correlation by depicting the combined results of the following two survey questions simultaneously:

Q12: "Temu's gamification features make shopping more enjoyable."

Q19: "Estimate how much your spending on Temu has increased due to gamification features."

Table 1: Do users who enjoy gamification spend more?

Q12 / **Q19**	strongly disagree	disagree	agree	strongly agree	Total
no increase	**48**	**34**	14	0	96
slight increase	1	9	**84**	3	97
moderate increase	2	3	**22**	5	32
significant increase	1	1	**13**	**14**	29
Grand Total	52	47	133	22	254

The red numbers show that most survey-takers who claim they (strongly) disagree with the statement that gamification makes shopping on Temu more enjoyable also state gamification has no increase on their spending. These people make up 32% of the respondents. Contrary, the green numbers highlight that a notable number of survey respondents, who indicate that gamification features make their shopping experience more enjoyable, claim they also lead to an increase in their spending. These make up 52% of the survey-takers. This reinforces Huseynov's (2020) claim that hedonic (enjoyment-driven) motivation contributes to consumer engagement with gamification systems.

By offering incentives that cater to entertainment-based motivations, Temu effectively maximizes consumer participation and thereby sales volume.

Discount-driven gamification vs. spending increase

Other factors of gamification that influence the respondent´s purchasing behavior are shown in table 2 below, by illustrating the answers to the following survey questions:

Q15: "What motivates you the most to participate in gamification features?"

Q19: "Estimate how much your spending on Temu has increased due to gamification features."

Table 2: What motivates users to spend more?

Q15 / **Q19**	fun	potential discounts	sense of competition	social influence	Total
no increase	13	72	6	2	93
slight increase	6	**94**	2	1	103
moderate increase	2	**27**	2	0	31
significant increase	11	**8**	0	1	20
Total	32	201	10	4	247

The green numbers highlight that in the survey responses discounts emerge as the primary motivation for engaging with gamification. Most participants who claim monetary rewards, such as coupons and cash incentives are their main reason for participating in Temu's gamified features also state that gamification at the very least slightly increases their spending. These parallels can be found in 52% of the participants. This supports Costa et al. (2024), who suggest that discount-based gamification effectively increases spending by stimulating reward-seeking behavior.

Furthermore, it reinforces Huseynov's (2020) claim that utilitarian (monetary reward-driven) motivation contributes to consumer engagement with gamification systems.

The findings confirm that financial incentives embedded in gamification mechanics directly influence consumer purchase decisions, making them one of the most effective engagement strategies in e-commerce.

Personalization satisfaction vs. purchase likelihood

Next, it needs to be investigated whether the AI-driven personalization of gamification has an impact on the respondents´ likelihood of making a purchase on Temu.

The survey results suggest a correlation between how happy customers are with the AI-induced personalization level on Temu and how likely they are to make a purchase due to the gamification features on Temu. Table 3 shows this connection. It depicts the following survey question results:

Q18: "How happy are you with the personalization level on Temu?"

Q13: "How do the gamification features influence your likelihood to buy something?"

Table 3: Does AI-driven personalization make gamification more effective?

Q13 / **Q18**	significant decrease	slight decrease	no influence	increase	significant increase	Total
1	**17**	**8**	**24**	7	1	57
2	**10**	**9**	**18**	8	0	45
3	2	2	33	16	0	53
4	0	0	10	**43**	**4**	57
5	0	1	3	**74**	**18**	96
Total	29	20	88	148	23	308

The green numbers indicate that users who are satisfied with Temu's personalization level are more likely to make a purchase because of gamification. In total the answers of 48% of the participants showed this correlation. Consumers who are unsatisfied with the personalization level are less likely to make a purchase because of gamification (red numbers), these people make up 28% of the respondents. This aligns with research by Krishan and Mariappan (2024), who state that AI-driven gamification leverages machine learning and predictive analytics to tailor experiences to individual users, which increases engagement and purchase intent.

The ability of AI to dynamically adapt gamified elements to user preferences is essential in enhancing gamification-related customer satisfaction. As a result, combining gamification with AI has the potential to increase the conversion rate even further.

Net promoter score vs. gamification engagement

Lastly, it needs to be examined whether gamification has positive long-term effects, like an impact on brand loyalty and advocacy.

The survey revealed a link, shown in table 4, between how often respondents engage with Temu´s gamification and how likely they are to recommend the company. The table depicts this correlation by showcasing the results of the following questions of the survey simultaneously:

Q11: "How often do you engage with Temu's gamification features?"

Q17: "How likely are you to recommend Temu?"

Table 4: Does gamification create loyal customers?

Q11 / **Q17**	always	often	never	Total
0	4	4	**63**	71
1	3	0	**6**	9

…	…	…	…	…
7	4	**17**	0	21
8	**11**	**21**	0	32
9	**9**	**56**	0	65
10	**7**	**2**	0	9
Total	42	111	81	234

The results highlighted in green reveal that users who engage with gamification more frequently are also more likely to recommend Temu on a scale from 1-10, whereas those who never engage with the gamified features are not inclined to recommend the company (red numbers). The green numbers make up 53% of the participants, the red numbers only 29.5%. This supports Bezzina and Dingli (2023), who emphasize that habitual engagement with gamified features fosters long-term brand loyalty and advocacy by creating emotional attachment to the platform and company.

The correlation between frequent gamification use and potential positive word-of-mouth marketing highlights the importance of AI-driven gamification tools in customer retention and recruitment of new customers.

4.4.2 Theoretical implications

This section discusses the broader academic insights that can be drawn from the findings of the case study.

Firstly, the findings regarding Temu´s gamification align with established theories on gamification psychology and behavioral economics, which suggest that reward-based systems increase engagement and influence consumer decision-making. The findings confirm that AI-driven gamification can increase purchase frequency, reinforce impulse buying behaviors, and enhance customer retention, as suggested by Bezzina and Dingli (2023) as well as Roy and Jain (2022).

The correlation between AI-driven personalization and increased purchasing likelihood that can be found in the survey results, supports the growing body of literature which emphasizes the role of machine learning in adapting gamification mechanics. For instance, research by Krishan and Mariappan (2024) highlights how predictive modelling allows for tailored gamification experiences and thereby leads to increased satisfaction and conversion rates.

The thesis contributes to understanding how both hedonic (enjoyment-driven) and utilitarian (monetary-driven) motivations interact in gamified e-commerce environments. The findings support Huseynov (2020), who argues that the strongest engagement drivers are discount incentives (utilitarian motivation) and entertainment value (hedonic motivation).

The correlation between gamification engagement and the Net Promoter Score of Temu reinforces the theory that habitual interactions with gamified features foster long-term brand attachment and loyalty. This supports prior research on gamification-induced habit formation and word-of-mouth marketing effects, as seen in the work of Bezzina & Dingli (2023).

4.4.3 Practical implications

This section discusses how other businesses, marketers, and platform developers can apply the findings from the case study to optimize AI-driven gamification strategies in real-world e-commerce settings.

The thesis demonstrates that AI-driven gamification significantly increases consumer spending, particularly through time-limited discounts, countdown-based urgency tactics, and personalized incentives. Companies can leverage predictive analytics to tailor gamification features based on user behavior, spending patterns, and engagement history.

The strong correlation between satisfaction with the personalization level and increased purchase behavior highlights the importance of AI-powered customization. Businesses should invest in advanced machine learning models to refine their gamification strategies and create dynamic, user-specific engagement mechanics.

The case study supports the argument that frequent engagement with gamified features fosters brand loyalty and advocacy. Companies should not only focus on incentivizing immediate purchases but also on creating long-term engagement tactics that reward repeated interactions over time.

5 Conclusion

The last chapter summarizes the key findings and answers the research questions directly. Furthermore, a critical review and recommendations for future research are implemented in this chapter.

5.1 Summary of key findings

This chapter presents the key findings of the literature review and the case study on Temu´s AI-driven gamification employment by directly addressing the research questions formulated at the beginning of this thesis.

Research question 1: How does AI-driven gamification influence consumer engagement on e-commerce platforms like Temu?

AI-driven gamification significantly enhances consumer engagement by introducing interactive and immersive shopping experiences that encourage repeated interactions. The study finds that game-like features such as Spin-The-Wheel and time-limited discounts stimulate habitual platform usage. The survey data indicates a positive correlation between gamification engagement and purchase frequency, confirming that gamification functions as an effective tool for customer retention. Artificial Intelligence further amplifies consumer engagement by dynamically adjusting reward systems and game mechanics based on user activity. This personalization reinforces motivation, leading to a higher likelihood of sustained participation.

Research question 2: What specific AI-powered gamification strategies are used by Temu, and how have they contributed to its rapid sales growth?

Temu employs AI-powered gamification strategies that leverage personalized discounts and urgency-based mechanics. An example for this is their three part gamification event which includes Spin-The-Wheel, Crack-The-Egg, and time-limited discounts. These features

encourage impulsive decision-making by creating a sense of scarcity and exclusivity through countdown timers and dynamically allocated rewards. Furthermore, the findings of the case study indicate that a significant number of consumers are driven by monetary incentives, like Temu´s discount-based gamification features and that they enhance their spending behavior. The empirical analysis also demonstrates that Temu´s AI-driven personalization plays a key role in optimizing the overall effectiveness of these gamification strategies, as customers who are satisfied with the level of personalization are more likely to increase their spending. Consequently, the company´s AI-driven gamification serves as a revenue accelerator, contributing to Temu's substantial sales growth of 293% from 2023 to 2024.

Research question 3: To what extent do AI-driven gamification features influence consumer purchase behavior on Temu, including impulse buying, loyalty, and overall satisfaction?

This thesis confirms that AI-driven gamification has a profound impact on consumer purchase behavior by influencing impulse purchases, fostering brand loyalty, and improving customer satisfaction. The survey findings reveal that over 50% of respondents made unplanned purchases due to gamification features on Temu, with time-sensitive discounts being particularly effective in triggering spontaneous transactions. Moreover, consumers who actively engage with Temu's gamification mechanics exhibit higher Net Promoter Scores, indicating an increased willingness to recommend the platform. AI-enhanced personalization further strengthens this effect, as users who express satisfaction with tailored gamification experiences report greater spending tendencies and higher brand advocacy.

In conclusion, the findings validate that AI-driven gamification is a pivotal factor in shaping consumer engagement, optimizing purchase behavior, and accelerating sales growth on e-commerce platforms such as Temu. By integrating AI-driven personalization, financial incentives, and interactive game mechanics, Temu successfully enhances customer engagement on their platform, increases their users´ spending, and fosters long-term brand loyalty. These insights highlight the importance of AI-driven gamification as a strategic tool for e-commerce businesses which seek to maximize profitability and to sustain competitive advantage.

5.2 Critical review

This section critically evaluates the reliability and validity of the thesis, particularly in relation to the methods used in the case study. While the study provides valuable insights into AI-driven gamification and its impact on consumer behavior, certain methodological limitations must be considered in assessing the quality and representativity of the findings.

Reliability refers to the consistency or repeatability of a measurement instrument, meaning the degree to which a method produces stable and consistent results over repeated applications (Reliability, n.d.). In this thesis, the online survey serves as the primary method for data collection, which introduces both strengths and limitations regarding reliability. The survey includes structured and standardized questions which ensures that the responses can be collected in a consistent manner across all participants. This increases the internal reliability of the study, as this data collection process minimizes inconsistencies by leaving no room for misinterpretation. However, the external reliability of the findings remains limited. Since the survey was conducted within a short and specific timeframe and only among a particular sample, which consists mainly of university students, it is uncertain whether repeating the study under different conditions or with a larger sample size would yield the same results. Furthermore, external factors, such as changes in Temu's gamification strategies, general shopping trends, or market conditions, may affect consumer engagement levels and spending behavior in ways that this specific case study does not fully take into consideration. Additionally, self-reported data introduces the risk of response bias. Participants may overestimate or underestimate the impact of gamification on their behavior, which affects the reliability of the measured effects and may lead to different results if replicated in a different context.

Validity refers to the accuracy of a measurement tool, specifically the extent to which it measures what it is intended to measure (Validity, n.d.). This thesis demonstrates strong validity, as the survey questions directly address all the key aspects of AI-driven gamification, consumer engagement, and spending behavior. Including a correlation analysis strengthens internal validity by providing insights into associations between gamification participation and purchase behavior. However, certain factors may still limit the validity. While the survey successfully captures self-reported consumer perceptions, it does not incorporate objective behavioral data, such as actual purchase records, time spent engaging with gamification features, or purchase histories. This means that while

participants may believe gamification influences their spending, the study does not empirically verify these claims through behavioral tracking. The absence of empirical control data also limits the ability to isolate gamification effects from other influences, such as Temu's advertising strategies, the mentioned social proofing mechanisms, or broader e-commerce trends. Regarding external validity, the study focuses solely on Temu's AI-driven gamification. This raises questions about the generalizability of the findings to other e-commerce platforms. While the case study approach allows for an in-depth analysis, it limits the ability to apply the findings to different business models, alternative gamification techniques, or platforms with different, distinct user demographics.

5.3 Recommendations for future research

While this thesis provides a comprehensive and insightful analysis of AI-driven gamification, the reliability of the findings could be improved by investigating larger and more diverse sample sizes in the future. Furthermore, including behavioral data would enhance the validity of the results. This thesis effectively demonstrates correlations between gamification and consumer behavior, but its case study design and self-reported data introduce limitations regarding replicability and generalizability. Future research should consider enhancing survey data with real-world behavioral analytics and expanding the scope beyond a single platform, by conducting comparative analyses across multiple e-commerce platforms or integrating long term studies to observe changes in consumer behavior over time.

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