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GAMIFICATION IN GROCERY LOYALTY PROGRAMS IN LATVIA AS VALUE ENHANCEMENT FOR CUSTOMERS

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Gamification in grocery loyalty programs in Latvia as value enhancement for customers

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Abstract

Purpose – Loyalty programs in grocery stores can positively affect customers' purchase behavior and increase customer retention. Traditional loyalty programs are closely linked to the monetary reward for customers and aimed at already loyal customers. An alternative approach to traditional loyalty programs is the application of gamification elements in such programs so that customers spend more and also gain non-monetary rewards. This research aims to identify the impact of gamification as value enhancement in order to increase intentions of Latvian customers to participate in a grocery loyalty program.

Design and method – We conducted focus groups to source ideas for gamified loyalty programs. Subsequently, we conducted a survey representing Latvia's population in the age of 18-69 to assess whether gamification elements do indeed impact customer value perception and thereby intentions to participate in a grocery loyalty program.

Main findings - We found that gamified loyalty programs do not increase customer intentions for participation more than traditional programs. Furthermore, traditional loyalty programs performed better in the survey than any gamified program. Nevertheless, we observed that some customers with certain socio-demographic characteristics (such as young age, low income and non-countryside region) have more intention to participate in gamified loyalty programs than other socio-demographics.

1 Introduction

The topic of customer loyalty in the Baltics has gained popularity in research recently, as can be observed by publications such as Ivanauskien (2014) and Pilelienė and Zikienė (2017). Especially the dynamic Baltic grocery market, which is home to both local grocery chains and international players such as Rimi and Lidl, provides an active field of such loyalty measures. The key idea of loyalty programs is to stimulate customer retention, which is influenced by numerous factors such as service quality, location and product offering. In the concept of relationship marketing, customer retention is seen as a main driver of long-term profitability, therefore the focus of marketing departments should also be put in this area (Berry, 2002).

The significance of loyalty programs can be illustrated by the size of the standard loyalty program discount of Rimi Baltics, which accounts for 1% of Rimi's revenue in the Baltic states, totalling 1.47 billion euros in 2018 (Baltic Times, 2019). As there are no restrictions to join the loyalty program, this implies that Rimi is ready to give 14.7 million euros for users of the card. Furthermore, most grocery stores in the Baltics offer loyalty programs which are very similar. The same seems to hold true for other parts of Europe, e.g. France (Meyer-Waarden & Benavent, 2006).

The existing academic research on the topic of loyalty programs provides two interesting insights. First, customers with loyalty cards are loyal shoppers and spend more in the shop than the customers without loyalty cards (Meyer-Waarden, 2007). Second, the behaviour of the customers does not change after acquiring a loyalty card, which implies that the loyalty cards themselves do not affect the customers' behaviour; therefore, only loyal customers acquire a loyalty card (Meyer-Waarden & Benavent, 2009). Nevertheless, an empirical analysis from Leenheer, van Heerde, Bijmolt, and Smidts (2007) illustrates that there is a positive correlation between the non-economic and economic benefits of loyalty programs and the net revenue captured by these programs for grocery stores.

Combining those indications with the above-mentioned tough competition in the Baltic grocery market, we assume that loyalty programs cannot provide further economic benefits without either losing significant profits or segmenting customers. This could be the root cause of the similarity of the grocery loyalty programs.

Therefore, our work will examine whether gamification, as a non-economic benefit, can enhance the value of loyalty programs. Gamification can be defined as *"a process of enhancing a service with affordances for gameful experiences in order to support user's [sic] overall value creation"* (Huotari & Hamari, 2012, p.19). The concept of gamification

is relatively novel, therefore the theoretical framework is still in its early days (Huotari & Hamari, 2012). Nevertheless, recent research suggests that gamification could bring a potential uplift to loyalty program systems. The overview of the empirical studies related to applications of gamification to non-game goods and services is shown in Hamari, Koivisto, and Sarsa (2014), Hwang and Choi (2019) and Chia-Lin and Mu-Chen (2018). These studies looked at already applied gamification methods in many different areas such as commerce, education, healthcare, human resources. However, in the literature we reviewed there are only few empirical studies about the impact of gamification on grocery retail loyalty programs. Most of these studies, such as Mussol, Aurier, and Lanauze (2019) describe the impact of gamification on specific sales events and is linked with incorporation of mobile app technology. Our work focuses on providing a broader view on the application of gamification methods in loyalty programs of the grocery industry.

The purpose of this research, therefore, is to investigate whether the introduction of gamification elements in loyalty programs increase the perceived value of the loyalty program for the customer, and thereby the intention to participate in the loyalty program. Specifically, the research aims to answer the following question:

How do gamification elements impact the customer's intentions to participate in a grocery loyalty program?

In order to do so, this research first conducted focus groups in order to source ideas for gamification elements for grocery store loyalty programs. Then, it surveyed customers in order to assess whether these elements do indeed impact customer’s intention to participate in a grocery loyalty program.

Our thesis consists of five chapters, including this chapter. The second chapter reviews current literature on the topic of loyalty programs and gamification and summarizes the current academic tenor. The third chapter explains the methodology of the data collection and analysis. The fourth chapter presents the results. The fifth chapter concludes the thesis by discussing the results of the research, enumerating its implications, and highlighting suggestions for further research.

2 Literature review

The literature review is divided in six sections. We shall first introduce the concept of relationship marketing, as it is one of the key drivers for the research and developments in the loyalty program area. Then we shall investigate the current state of loyalty programs with a special focus on grocery loyalty programs. Thereafter, we shall present the concept of gamification in general. Subsequently, we shall describe the elements of game design and game mechanics, which can be applied to grocery marketing. Following we shall review the current state of research in gamification of loyalty programs and discuss implications for our research question. Finally, we will summarize the chapter in the last section.

2.1 Relationship marketing

Loyalty programs need to be understood in the context of relationship marketing, as it provides the reasoning foundation for such programs. According to Berry (2002), before his article "Relationship Marketing" was published in 1983, the focus of marketing both in academia and business did not go beyond new customer acquisition. Therefore, it can be said that Berry introduced the concept of relationship marketing, which focuses on *"attracting, maintaining, and -in multi-service organizations- enhancing customer relationships"* (p.61). The author argues for its importance being on par with new customer acquisition for the long-term success of an organization.

Another indication for the rising relevance of customer relationship management is illustrated by Reichheld and Sasser (1990) published in the Harvard business review. This article explains that quality in the context of customer satisfaction moved from the manufacturing to the service industry. Although the cost increases in providing higher service quality, the resulting enhanced customer retention leads to an increasing profit in the long-term, the argument goes. A main factor lies in the nature of repeat customers: Companies have a one-off cost for a customer's acquisition, while repeat customers not only buy more often, but are less price sensitive and may also help the business with referrals of new customers.

In the following years, Storbacka, Strandvik, and Grönroos (1994) developed a model to assess the relationship between service quality, satisfaction and customer retention and those factors' impact on profit.

This model may be utilized as a basis to advance the research of relationship marketing and furthermore offers implications that customer retention may be a key factor for long term success of businesses. The main contributing factor is the so-called "share of wallet",

which corresponds to the relative amount of a customer's disposable income for certain category expenditures (such as groceries). Customers of grocery shops typically visit different stores and in the context of the model of Storbacka et al., greater customer retention leads to capturing a bigger share of wallet (Meer-Waarden, 2008).

2.2 Loyalty programs

Sharp and Sharp (1997) illustrated a rise in loyalty programs with the aim of increasing customer retention in the years before their publication. Therefore, loyalty programs can be seen as an important tool within the context of relationship marketing. Furthermore, the article focuses on how much uplift the programs provided and indicated that loyalty programs can positively affect customer's purchase behaviour and increase customer retention at least to a small degree. Those effects were described as 'excess loyalty'.

In the years that followed, academia began to critically evaluate loyalty programs and their effectiveness. Meyer-Waarden and Benavent (2006) found that loyalty programs in French supermarkets were not able to attract a meaningful number of new customers. Nevertheless, their study supported that existing customers may spend a higher share of wallet in the supermarkets. Regarding economic considerations of loyalty programs, Meyer-Waarden and Benavent (2006) concluded: *"To some extent loyalty programmes have become of cost [sic] of doing business in the retail sector, just as investing in fixtures and fittings, mail-drops and TV commercials are costs of being in business."* (p.82).

Sharp and Sharp (1997) and Meyer-Waarden and Benavent (2006) pointed out that research had not yet answered the question whether loyalty programs can convert non-loyal customers to loyal ones, or just provide benefits to already loyal customers. A few years later, Meyer-Waarden and Benavent (2009) investigated this issue and found that most participants of such programs are indeed already loyal customers; in addition, the effect of a loyalty card typically erodes after six to nine months.

Meyer-Waarden (2007) argued that even though self-selection of loyalty card holders is likely, loyalty programs still establish opportunity costs for the customer to switch to different stores and thereby may increase the share of wallet even for already loyal customers. However, the author also suggested that *"taking into consideration the large number of multiple-card holders, the effects of competing loyalty schemes by geographically close retailers may cancel one another out as a greater degree of imitation than innovation emerges."* (p.234)

That statement implies that ongoing innovation of loyalty cards might be essential in order to maintain the above-mentioned opportunity costs as well as the other desired effects from such programs. In another study, Meyer-Waarden (2008) emphasize this point by illustrating that most loyalty programs of grocery stores display a high degree of similarity, which may inhibit a change in customer behaviour by the means of such programs.

Leenherr et al. (2007) further support those findings by concluding that loyalty programs are crucial for capturing a share of wallet, but effects towards customer behaviour may be overstated due to self-selection biases, i.e. already loyal customers participating. Another important takeaway from this study regards the economic efficiency of such programs. The authors indicate that customer participation rates can be increased if either non-economic or economic benefits are offered to a greater extent. Given the limited economic efficiency of loyalty programs, cost-benefit-ratios must be closely balanced. Consequently, increasing perceived non-economic benefits for customers might prove as a valuable strategy for optimizing loyalty programs.

The similarity of the grocery chain loyalty programs is defined by offering loyalty cards with a point collection scheme that allows the customer to earn a small discount from the purchase. Such schemes are present in many grocery chains. According to the Tesco web page, Tesco Clubcard in the UK allows the card holder to collect 1 point for every 4 pounds spent in the shop. Coop Sweden state on their website that a Coop card allows to redeem up to 6 points per penny spent, depending on the shop where the purchase is made. In the Baltic region, the two biggest grocery chains Rimi and Maxima employ a similar scheme; the companies' websites declare that each 1 EUR spent allows the customer to earn 1 point of virtual money which can be used later as payment for a purchase. In the context of this thesis, we will call and assess this type of loyalty programs as ‘traditional’. In summary, loyalty programs can be seen as a crucial measure for grocery stores to expand their share of wallet (Meyer-Waarden (2007, 2008); Leenherr et al., 2007; Meyer-Waarden and Benavent, 2006). However, the similarity of many companies’ respective loyalty programs indicates a threshold for economic benefits due to cost/benefit ratios (Leenherr et al., 2007).

Consequently, innovative elements in loyalty programs, especially non-economic benefits, could break up the similarity and result in higher switching opportunity costs for the customer. In turn, this may lead to a larger share of wallet while keeping the costs of the loyalty program under control.

2.3 Gamification in general

One approach for the aforementioned innovative elements might be incorporating game design elements and mechanics into loyalty programs. The concept of applying game elements to another context is called gamification: *"we define gamification as the use of game design elements to enhance non-game goods and services by increasing customer value and encouraging value-creating behaviors such as increased consumption, greater loyalty, engagement, or product advocacy"* (Hofacker, Ruyter, Lurie, Manchanda, & Donaldson, 2016, p.26). Another definition is offered by Huotari and Hamari (2012): *"Gamification refers to: a process of enhancing a service with affordances for gameful experiences in order to support user's (sic) overall value creation"* (p.19).

Gamification is a relatively new area in research. In several articles, authors state that academic as well as business interest in gamification started to increase since 2010, and the conceptualization of the framework is in its early stages (Gatautis, Vitkauskaite, Gadeikiene & Piligrimiene, 2016; Hamari et al., 2014; Huotari & Hamari, 2012). The growing interest in gamification is closely related to the advancement of digital technology. As described in Deterding, Dixon, Khaled, and Nacke (2011): *"Following success of the location-based service Foursquare, the idea of using game design elements in non-game contexts to motivate and increase user activity and retention has rapidly gained traction in interaction design and digital marketing."* (p.9). According to Deterding et al. (2011), 2010 was the year in which the term gamification started to gain widespread adoption, however, the first mentions of the term go back to 2008.

Looking at the timeline from a broader perspective, Deterding et al. (2011) link the first boom of computer games in the early 1980s with the beginning of a new era of entertainment. The authors continue to describe that with the growth of the computer game market, game designs also became more engaging and entertaining. Once technology had advanced to a certain level, application of game designs elements outside of the traditional realm of games became a feasible option. *"In parallel to the serious games movement, new game genres evolved that stretched the traditional limits of games, bringing games into new contexts, situations, and spaces."* (Deterding et al., 2011, p.10).

A lot of discussion in the articles on gamification revolves around psychological factors and game elements which enhance customer loyalty (Sailer, Hense, Mayr, & Mandl, 2017). Due to the limitation of this paper's scope, we shall not focus on the psychological factors of motivation via game design elements. Instead, we shall focus on game design elements and mechanics used as gamification tools in loyalty programs.

2.4 Game design elements

Gamification elements in a non-game context are usually defined through several layers. Deterding et al. (2011) define tools applied in gamification as separate building blocks, which in combination allow to achieve game-like experiences.

Several authors, such as Deterding et al. (2011), Seaborn and Fels (2015) and Werbach and Hunter (2012), have a similar way to categorize game design elements. Gatautis et al. (2016) provide a well-structured overview of the game design elements described in Deterding et al. (2011), Seaborn and Fels (2015) and Werbach and Hunter (2012). Gatautis et al. (2016) summarize game design elements into three groups: game dynamics, game mechanics and game design visualisation (Table 1).

Table 1 - Summary of game design elements

Game dynamics	Game mechanics	Game design visualization
• Constraints - certain limitations or forced withdrawal. • Emotions - curiosity, competitiveness, frustration, happiness. • Narrative - consistent, continuous and ongoing story. • Progression - consumer's, as player's, growth and development. • Relationships - friendship created by social interaction, status, altruism.	• Exploring - possibilities to freely explore the game / game world. • Collecting - acquisition of useful or collectable game resources. • Competition - possibility for a player or a group of players to win while other loose. • Status acquisition - conditions that have to be met for players to reach a higher level. • Collaboration - players must act together to achieve a common goal. • Challenge - quizzes, quests and other tasks that require effort to solve it. • Development - conditions allowing players to acquire new knowledge or skills.	• Points - usually a numerical representation of rewarding the player for activities carried out in a game. • Badges - the visual representation of player achievements indicating that player reached specific status or level. • Leaderboards - listing of players based on their performance in the game. • Levels - a system of advancing in the game by collecting a certain amount of points or carrying out specific actions. • Rewards - benefits or game assets given to a player based on his achievement in the game. • Feedback - providing the player with information about his performance in the game.

Source: Created by the authors using game element description from Gatautis et al. (2016)

According to Gatautis et al. (2016), game dynamics is a result of the combination of game mechanics and game design visualization elements. Elements of the latter two categories applied in certain combinations at a certain point stimulate the emotions and satisfaction of the person involved in the gamification activity. In contrast, Deterding et al. (2011) and Seaborn and Fels (2015), explain gamification elements only by game

mechanics and game design visualization. Nevertheless, Werbach and Hunter (2012) argue that game dynamics is an important aspect of gamification which needs to be considered and managed on its own, once a gamified campaign is created.

Deterding et al. (2011) describes that each game design element taken outside the game context might not seem "gameful" and only by combining those elements, a game-like experience can be created. The same authors add that the provided list of game design elements is not exhaustive, as there are vast numbers of variations and elements, and the list only contains elements which are used the most. In conclusion, our opinion is that in order to provide a more holistic understanding of gamification, a universally agreed upon definition of gamification elements should be established, which covers all possible gamification elements.

2.5 Gamification in loyalty campaigns

During the last ten years, gamification methods have been studied and applied in a lot of different industries and areas. The interest in applying gamification methods in marketing to increase customer engagement has been growing rapidly in the past few years.

Several authors describe a positive impact on customer willingness to participate in gamified loyalty programs (Hwang and Choi, 2019; Müller-Stewens, Schlager, Häubl, and Herrmann, 2017; Mussol et al., 2019). However, Hamari and Koivisto (2015) point out that research is still unclear about what factors motivate people to participate in the gamified campaigns.

The concept of gamification per se constitutes no novelty in grocery marketing. Already in the middle of the 20th century, grocery chains utilized approaches that fall under the current definition of gamification.

Alvine (1969) describes a growth in revenue of grocery chains in the USA by using trade stamps and game approaches in their marketing: *"Customer games of chance were first used by a few supermarket chains to offset the impact of the initial introduction of Plaid Stamps by A&P during 1962. A customer game of chance is a time-limited event (originally running from six to eight weeks) during which customers attempt to collect particular sets of game slips given to them free at the checkout stations. Different prizes are associated with different sets of game slips"* (p.48).

Such marketing approaches match the descriptions for gamification offered by Deterding et al. (2011), Seaborn and Fels (2015), Huotari and Hamari (2012) and other authors mentioned above. However, those authors describe gamification as a new concept

which, as a marketing tool, started to gain interest in business and academics from 2010 onwards. Therefore, the relationship between modern gamification and similar historical approaches as marketing tools remains somewhat unclear and there is no clear consensus on whether gamification is something new or an evolution of historical methods through the means of recent technology.

According to information we retrieved from the biggest Latvian grocery chain websites (Rimi, Maxima), the method of gamification in loyalty programs is no novelty either. As a case in point, both Rimi and Maxima offer the possibility to collaborate with your friends or family to jointly collect virtual money or stamps in order to earn discounts for specific products. Another gamification application in place in the Latvian grocery industry is to offer a special discount for a target audience. Exemplarily, Rimi and Maxima offer card holders to register in the baby club and consequently receive additional discounts for baby products.

Nevertheless, the application of gamification concepts in the Latvian grocery market is not well described in the academic literature. Especially gamification in loyalty programs and its low coverage in academic literature raises additional interest to perform research on how such methods may impact customers' intentions and behaviour.

2.6 Summary literature review

We conclude that loyalty programs are a valuable tool within the context of relationship marketing, which may enhance customer retention and thereby lead to economic benefits (Meyer-Waarden (2007, 2008); Leenherr et al., 2007; Meyer-Waarden and Benavent, 2006). However, loyalty programs in grocery markets suffer from uniformess because the sector has very limited economic surplus to allocate to customers (Leenherr et al., 2007). Therefore, non-economic innovation in such programs becomes crucial, which in turn may be achieved via the method of gamification.

Gamification in a broader sense has been used in grocery stores as early as the mid-20th century (Alvine, 1969), but recent years' advancement of technology granted the concept greater possibilities and renewed interest (Deterding et al., 2011). Modern gamification as a combination of game mechanics, visualisation and dynamics, provides customers a game-like experience out of the context of traditional games. This approach has indeed led to increased customer engagement in loyalty programs (Hwang and Choi, 2019; Müller-Stewens et al., 2017; Mussol et al., 2019). However, further research is required to support this observation on a general level.

As described above loyalty programs of grocery stores in Latvia appear very similar, which supports the findings of Meyer-Waarden (2008). There are only two big players in the Latvian grocery industry– Rimi and Maxima -, which describe their loyalty programs very similarly. Furthermore, both Rimi and Maxima have already incorporated some gamification elements in their loyalty programs and try to combine traditional loyalty programs with gamification elements. Regarding our research, even though gamification elements are being applied in grocery stores in Latvia, their impact on customers has not yet been thoroughly studied in academic literature.

3 Methodology

This chapter has six sections. First, we shall explain the concept of focus groups and how we approached ours. We chose focus groups as it is a good way to generate ideas for gamification elements and relied on Krueger and Casey (2014) for the methodology. Second, we shall describe the selection procedure of gamification elements for the questionnaire. Third, we shall describe the different loyalty program types presented in the questionnaire. Fourth, we shall discuss the question design which is based on a theoretical model by Ajzen (1991). Fifth, we shall describe the distribution and target group of our questionnaire. Finally, we shall describe the data collection, the selection of valid responses and the null hypotheses to be tested.

3.1 Focus group

After discussions with SSE's supervisor and committee, we decided that a focus group would be the best way to get first insights into customers' general attitude. The setup of our focus group was based on practices described by Krueger and Casey (2014).

The purpose of the focus group "gamification in loyalty programs" was to generate ideas for gamification elements with regular grocery shoppers. The elements should be appropriate for the introduction into loyalty programs of grocery retailers. The generated elements were in succession used in a survey to assess their impact on customers' willingness to participate in loyalty programs.

According to Krueger and Casey (2014), a focus group can vary in size from four to twelve people. Setting a time limit of at most two hours for the group's meeting was emphasized, so that a certain level of focus can be maintained. Within the given time limit, two main factors affect the appropriate size of a group. First, how familiar the group is with the topic, and how controversial it might be. Second, the number of planned questions and type of output desired.

Since our topic was neither controversial nor unfamiliar, the first factor enabled a larger group size. However, because we asked our focus groups to generate ideas and work creatively, the second factor pointed toward a smaller group size. Consequently, we decided that the focus group should consist of six people in order to award sufficient time to participants for idea generation, while providing us with a variety of opinions.

Due to time limitations for this study and the high degree of familiarity with the topic, we assumed that our study would require no more than three focus groups to accomplish a reasonable saturation in idea generation for gamification elements. Nevertheless, we

acknowledge the fact that this is the minimum number of focus groups advised by Krueger and Casey (2014).

To assemble the groups, we did not apply any selection criteria due to loyalty programs in grocery stores serving a wide audience with high demographic diversity. We employed the convenience method, which means that the groups consisted of friends and work or study colleagues. The first group comprised only work colleagues. The second and third group were mixed up in order to achieve some diversity. As the study does not apply any categorization within the selected participants our study can be categorized as a single category design.

With some participants of the focus groups being our working colleagues, we aimed at establishing a space without power influences by employing approaches as described by Krueger and Casey (2014). As an incentive, for all three groups, free food and drinks were offered during the meeting and as an expression of gratitude, participants received a gift (pralines) at the end of the meeting.

We conducted the meeting by being either in the moderator or observer role. The aim of focus groups is to stimulate participants to share and get conceptual ideas from them. The key responsibility of the observer is to choose an appropriate ending question based on the notes he has kept during the meeting.

In addition to taking notes, we recorded the meetings on audio. The focus groups' outcomes revolve around different types of gamification elements and their ratings. Beyond that, we disclose any other notable insight gained through the focus group. Table 2 shows our questions and how they are categorized based upon Krueger and Casey (2014).

Table 2 - Question catalogue focus group

Type	Question	Time
Opening	Please provide your commonly used grocery store and in short words why did you choose it?	5 mins
Opening	Do you use loyalty programs in one or more grocery stores? If yes, what do you think about them?	15 mins
Introduction	Brief introduction to gamification theory with a focus on the 7 different types of gamification	15 mins
Opening	What do you think about gamification in general?	10 mins
Key	Can you on your paper come up with 3 different ways how a grocery store could incorporate gamification elements into its loyalty program?	15 mins
Summary	Consolidation of the elements provided by participants	10 mins
Key	Please write down on your paper which 3 elements you would like to see in a loyalty program of your grocery store	15 mins
Summary	Consolidation of the ranking provided by the participants	5 mins
Key	What do you think about the 3 most selected gamification elements?	20 mins
Ending	Do you agree with this summary? Are we missing any key topic?	15 mins
Total		**125 mins**

Source: Created by the authors

Opening questions aimed at getting the conversation started and were not outcome-oriented or difficult to answer. In the introduction, we gave a presentation about gamification and its elements to ensure that all participants understood the concept. The presentation can be found in Appendix A, Figure A. 1.

The main part of the meetings was spent on the key questions and their summaries. Those questions corresponded to the groups' idea generation, which was then discussed to gain mutual understanding and consolidate. The outcome of the focus groups were gamification elements ranked by participants, to be used in the questionnaires of this study. Other findings will be introduced in the results part of this work.

For the participants of our focus groups, Table 3 shows demographic data. We acknowledge that our focus groups were a skewed representation of the Latvian population, with the participants living mostly in Riga, at ages between 25 and 43 years, and likely above average household income, based on the provided occupations.

Table 3 – Participants' demographics

Participant Number	Focus Group	Gender	Age	Marriage status	Household-size	Occupation	Main shopper	Relationship to authors
1	1	Male	30	Single	1	Analyst	Yes	Work colleague
2	1	Male	30	Married	2	Lawyer	Yes	Work colleague
3	1	Male	26	Single	1	Deputy Manager	Yes	Work colleague
4	1	Female	26	Not Married	2	BI Developer	Yes	Work colleague
5	1	Female	25	Not Married	2	BI Developer	Yes	Work colleague
6	1	Female	25	Widow	5	Client Management	Yes	Work colleague
7	2	Male	36	Not Married	2	Manager	Yes	Study colleague
8	2	Male	29	Married	4	Developer	No	Friend
9	2	Male	39	Single	1	Student	Yes	Study colleague
10	2	Male	32	Not Married	4	Developer	Yes	Friend
11	2	Male	25	Single	1	Analyst	Yes	Work colleague
12	2	Male	41	Not Married	2	Manager	Yes	Friend
13	3	Female	43	Divorced	3	Manager	Yes	Work colleague
14	3	Female	33	Married	2	Data Scientist	Yes	Friend
15	3	Male	37	Married	4	IT Manager	Yes	Friend
16	3	Male	33	Married	3	AML Specialist	Yes	Friend
17	3	Male	32	Married	3	Laywer	No	Work colleague
18	3	Male	34	Married	4	Manager	No	Study colleague

Source: Created by the authors

3.2 Gamification element selection for questionnaire

The gamification elements for the questionnaire were based on the outcomes of the focus groups. To limit the number of questions, we selected only the three gamification elements ranked highest for the popularity and relevance criteria.

The ranking of gamification elements from all focus groups was based on the number of votes received from each focus group. Table 4 shows all gamification elements with at least two votes and their similar elements, ranked by total points.

Table 4 - Most popular gamification elements collected during the focus groups

Total Rank	Gamification element	Points individually	Similar to element	Total Points incl. similar
1	Guess the weight of your shopping basket and get a reward of up to 50% discount	3	(13, 16)	8
2	Collaboration of family and friends in one account => family cards can collect virtual money and redeem it at a later point for rewards	4	(15)	6
3	Find and purchase hidden goods in the store which give extra rewards	3	(14)	5
4	Get a reward for purchasing a product for the first time	4		4
5	For at least 100€ in shopping basket you get a non-financial rewards such as a free bolt drive home, food/cooking courses, or a wine tasting	4		4
6	By purchasing goods repeatedly you earn levels which can be redeemed for a reward	2		2
7	Challenge => Need to buy something specific based on previous purchases to get a reward	2		2
8	Recipe with several ingredients that yields rewards when all ingredients are purchased	2		2
9	Solve puzzle to get reward/Get reward for a specific challenge	2		2
10	Get badges for "achievements" awarded for certain purchases, which can be exchanged for rewards	2		2
11	Collecting points for purchases and possibility to exchange points for a good in a price range	2		2
12	Customer competition for certain purchases, e.g. local or healthy products	2		2
13	Discount game – Spin a fortune wheel for a discount or another reward	3	1	-
14	A game for parents aiming to distract their kids from unhealthy goods, e.g. finding specific hidden goods and get rewarded a small gift	2	3	-
15	Shoppers collaborate to complete challenges by making purchases and earn a reward for specific targets (e.g. donate points to the animal shelter or to a customer group such as parents)	2	2	-
16	A game such as spinning the fortune wheel and winner gets a price	2	1	-

Source: Created by the authors

We selected the top 3 elements by consolidating with their similar elements not only by total points, but also because of the following. First, the two individually best ranked gamification elements already existed in many grocery stores. Second, the individual top 2 were more focused on a reward for customers rather than engaging them to additional actions.

After we applied those measures, the top three elements ranked by popularity were:

1. Guess the weight of your shopping basket and get a reward of up to 50% discount
2. Collaboration of family and friends in one account => family cards can collect virtual money and redeem it at a later point for rewards

3. Find and purchase hidden goods in the store which give extra rewards

3.3 Stimuli development and reward value comparison

The main goal of the questionnaires was to find out whether customers are more willing to participate in gamified loyalty programs compared to traditional ones. On the basis of our selected gamification elements and observations of popular loyalty programs in grocery stores, we created four different loyalty programs. The programs were presented in the questionnaires in Latvian & Russian (see Appendix B Questionnaires forms Figure B. 1 and Figure B. 2). We provide an English translation here as follows:

Traditional loyalty program:

Through the use of a loyalty card you can collect virtual money corresponding to a value of 5% of your purchase. Virtual money can at a later point be redeemed for making payments in the store.

Gamified loyalty program 1 (Collaboration):

With a loyalty card account, you can link all loyalty cards of family and friends. By using anyone's loyalty card, the account collects virtual money, which can be redeemed for future purchases, analogous to the previous program.

Gamified loyalty program 2 (Lottery):

By guessing the weight of your shopping basket, you can win a discount for your purchase of up to 20%, depending on how precisely you guessed. To be eligible for the program, your shopping basket has to contain at least 10 different items with a value of at least 30 EUR.

Gamified loyalty program 3 (Exploration):

By purchasing certain items which are hidden in the store, you can win a discount for your purchase of up to 20%, depending on the number of hidden items. You can get hints about the hidden items in the shop information centre or in your mobile app.

For all programs, we aimed at equalizing the expected reward value in order to not have ambiguous influences on participant decisions. In general, the most common reward value of grocery loyalty programs lay around 1%, however, we chose a value of 5% so that rewards are more appealing to customers.

While the reward values of program 3 and 4 may potentially have higher reward values, we expected the average to regress around 5%, like in the other campaigns. Practically speaking, to achieve this value on average, stores have to be in control of the sensitivity of

ranting reward values, e.g. via an autoregulatory mechanism. Nevertheless, customers might still perceive those two programs as offering higher reward values.

Table 5 illustrates each campaign with its (expected) reward values:

Table 5 - Loyalty campaign reward value comparison

Campaign	Reward value cost to the shop
Traditional Loyalty Program	5% for purchased amount
Gamified Loyalty Program 1	5% for purchased amount
Gamified Loyalty Program 2	Expected reward value 5% for purchased amount (as a probabilistic outcome)
Gamified Loyalty Program 3	Expected reward value 5% (as a probabilistic outcome by arrangement of the hidden items)

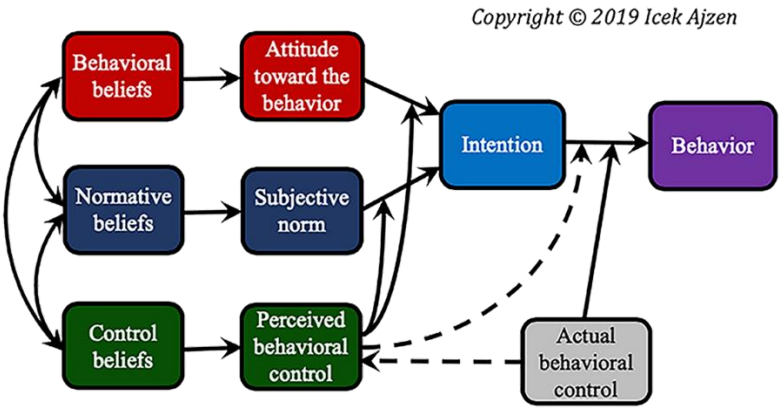
Source: Created by the authors

3.4 Design of a questionnaire

We presented the four types of loyalty programs in the questionnaires only as text, without any visuals. The form of plain text was chosen to prevent biased customer perception or attitudes associated with visualizations. The information in the questionnaires described for each loyalty program its mechanics and the claimable rewards (see 3.3 or Appendix B Questionnaires forms Figure B. 1 and Figure B. 2).

The questions were designed on the basis of the theory of planned behaviour by Ajzen (1991). The model is still in use today and updated on the author's website, as shown in Figure 1.

Figure 1 - Model of the Theory of Planned behaviour by Ajzen



Source: Retrieved from Ajzen (n.d.)

According to the theory, a person's behaviour is a function of his or her intentions and actual as well as perceived behavioural control measures. Actual behavioural control refers to a person's objective ability to perform a given behaviour, i.e. the money, time, skills etc. needed. Perceived behavioural control corresponds to the person's perceived ease or difficulty of performing a given behaviour.

Intentions are understood as an indicator of a person's readiness to perform a given behaviour and arise from a person's attitude and subjective norms towards the behaviour. The attitude is a person's subjective evaluation of a behaviour and its outcome. Subjective norms are defined as a person's perceived social pressure (from their significant others) to perform a behaviour or not.

We designed the questionnaire according to the suggestions by Ajzen (n.d.). The author suggests that questions should address each of the theory's key variables. Table 6 shows the questions with their corresponding construct as well as answer possibilities. For all questions but the last one, we used a seven-point bipolar adjective scale. The last question only offered a binary answer.

The questions were presented in Latvian & Russian (see Appendix B Questionnaires forms Figure B. 1 and Figure B. 2). Table 6 provides an English translation and the associated key variable per question.

Table 6 - Formulation of the items included in the questionnaire

Model of planned behaviour key variable	Question	Scale
Attitude	My participation in the proposed loyalty program would be interesting to me	Interest: Disagree/Agree, 7 points scale
	My participation in the proposed loyalty program would give value to me	Value: Disagree/Agree, 7 points scale
Subjective norm	Most of the people close to me would like to participate in the proposed loyalty program	Friends participation: Disagree/Agree, 7 points scale
	I would recommend my friends to participate in the proposed loyalty program	Recommendation: Disagree/Agree, 7 points scale
Perceived behaviour control	I would like to participate in the proposed loyalty program	Participation: Disagree/Agree, 7 points scale
Actual behaviour control	I make regular purchases in grocery stores	Actual behaviour: Yes/No

Source: Created by the authors

For the actual behavioural control, we assumed that any real limitation can be identified by asking whether the customer makes regular grocery purchases or not. If a person is not visiting any stores for regular purchases then he might be limited in the ability to perform such behaviour and in extension participate in any loyalty program.

The questionnaire was complemented with basic demographic questions to be able to interpret the results in the context of the demographic profile of the focus groups. We consulted family members and working colleagues of several age groups to ensure that the concept of each loyalty program was clear and the questions were understandable. In addition, we included a question to evaluate to what extent a participant understood the description of each campaign.

3.5 Distribution of the questionnaire

The target group of our questionnaire was 18-69-year-old residents of Latvia. The age limitation was related to the available technical options for the distribution of the questionnaire to collect responses in a limited time.

In order to achieve a representative sample size, we approached two research companies which offered distribution of questionnaires to the respondent list, namely "SIA Solid Data" (hereafter "Solid Data") and "SIA Kantar". After receiving cost estimates, we chose Solid Data due to offering a lower price.

As our budget on the research was limited and the price of the service depends on the number of respondents, we agreed that the company would deliver 500 responses to our questionnaire. Solid Data was responsible for setting up a questionnaire on their web platform and sending out invitations to the list of potential respondents.

The internet panel of Solid Data comprised 35.000 email contacts and was representative of the total population of Latvia by main socio-demographic aspects, i.e. age, income, region, gender. To select participants, Solid Data employed random stratified sampling methods. In total, 4.119 invitations were sent out to achieve the desired number of responses. The first batch of invitations was sent out on 19.02.2020 and a reminder to participate in the questionnaire was sent to the same list on 22.02.2020. The targeted number of responses was collected by 24.02.2020.

3.6 Analysis of the data

The short time frame of response collection (see above) promoted a minimal influence on the responses by external factors such as a change in the economics or country residents' mood. Of the total 4.119 invitations, 532 answers were received. Due to low quality, Solid Data excluded 27 responses, consequently 505 valid responses were delivered to us. The exclusion criteria for low quality responses as provided by Solid Data are:

1. The respondent gives false information about his demographics and region – the false information is detected based on the data Solid Data obtained from the respondent's previous answers.
2. The respondent has a highly irregular answer pattern – the respondent is removed if the completion time of the questionnaire is considerably shorter or longer than average completion time.
3. The respondent's participation in the survey is motivated only by rewards. Solid Data sometimes offers rewards to increase response rates, but excludes respondents which never participated in a questionnaire without rewards.

The questionnaire required participants to provide an opinion on four independent loyalty programs, which are described in section 3.3. The responses were measured by a seven-point Likert scale, i.e. the following: Fully disagree – 1; Disagree – 2; Slightly Disagree – 3; neither disagree/neither agree – 4; Slightly Agree – 5; Agree – 6; Fully agree – 7.

Each question was associated with one main factor of Ajzen's theory of planned behaviour: Question 1 – interest in loyalty program; Question 2 – value of loyalty program; Question 3 – participation preferences; Question 4 – recommendation to friends; Question 5 – friend participation; Question 6 – clarity of programs' rules. Question 6 was added as a control to ensure the criteria of the programs are understandable to the participants.

The goal of the thesis was to find whether gamified loyalty programs increase customer intentions to participate in the loyalty program. To assess whether customer intentions to participate in loyalty programs differ in gamified programs compared to traditional ones, we compared the differences of the mean values of each question across all four programs using T-test statistics. Consequently, our analysis is focused on the comparison of customer intentions between a traditional and a gamified loyalty program. Our research did not investigate relationships between all loyalty programs, thus we are not concerned about Type I error, which might be an outcome of multiple conducted T-tests. For the statistical tests, the null hypothesis for each question is shown in Table 7.

Table 7 - Null hypothesis for T-test

Question	Hypothesis
Question 1	H1: Respondents are more interested in the traditional loyalty program than the gamified loyalty program X.
Question 2	H2: Respondents find more value in the traditional loyalty program than the gamified loyalty program X.
Question 3	H3: Respondents would rather participate in the traditional loyalty program than the gamified loyalty program X.
Question 4	H4: Respondents would rather recommend the traditional loyalty campaign to a friend than the gamified loyalty program X.
Question 5	H5: Respondents assume that their family and friends would rather participate in the traditional loyalty campaign than the gamified loyalty program X.
Question 6	H6: Respondents rate their understanding of the traditional loyalty campaign higher than that of the gamified loyalty program X.

Source: Created by the authors

In analogy, we performed the same tests between all gamified loyalty programs.

To analyse the impact of the demographic variables (age, income, region, gender) on the results of our questionnaire, we performed an ANOVA test. Prior to the analysis, we merged the responses for each loyalty program type. The reason for this transformation was the small number of observations in demographic groups when analysing each question separately. Subsequently, the consolidated responses show overall customer preferences by loyalty program type.

After the ANOVA test, we performed a Bonferroni post–hoc test on the differences of mean values across the groups of demographic variables.

4 Results

This chapter is structured into three sections. In the first section, we shall explore the collected data and compare the sample with the population profile to assess the representativeness of the survey. In the second section, we shall illustrate customer attitudes towards different loyalty program types. In the last section, we shall analyse the relationship between demographic profiles and preferences toward loyalty program types.

4.1 Profile of respondents

To compare the profile of respondents in our sample to Latvia's population, we collected basic demographic data in the questionnaire, i.e. age, gender, income and city of residence. Only the respondents' ethnicity we determined based on the language a participant selected.

We then compared the demographic profile of our sample with Latvia's government official statistics. To be able to compare our respondents' region of residence, we merged some regions so that they match data available at the Central Statistics bureau of Latvia. A detailed summary of respondent profiles by region variable can be found in Appendix C Detailed statistical analysis of survey Figure C. 1.

Table 8 shows age groups and regions of our sample and Latvia's population according to CSP (2020) data.

Table 8- Questionnaire respondent distribution by age group and region with the distribution of Latvia population

	Sample		Latvia	
Age group	Count	%	Count	%
20-24	53	10.5%	87 077	7.0%
25-29	57	11.3%	123 792	9.9%
30-34	47	9.3%	139 017	11.1%
35-39	49	9.7%	127 927	10.3%
40-44	51	10.1%	126 352	10.1%
45-49	50	9.9%	132 411	10.6%
50-54	61	12.1%	129 259	10.4%
55-59	49	9.7%	141 408	11.3%
60-64	44	8.7%	129 739	10.4%
65-69	37	7.3%	110 469	8.9%

	Sample		Latvia	
Region	Count	%	Count	%
Other	193	38.2%	360 611	28.9%
Pierīga	56	11.1%	237 892	19.1%
Rīga	164	32.5%	415 874	33.3%
Big city	92	18.2%	233 074	18.7%

Source: Created by the authors using questionnaire result and CSP (2020) data

The relative numbers per age group and region between our sample and Latvia's population are fairly similar, so we assess our sample being representative in those variables.

To get information about respondents' income, we asked participants their monthly net income per household member in certain brackets. Since those brackets differ from the ones used by the Central Statistics bureau of Latvia, we compared the average net income of sample and population. According to CSP (2019), the average monthly disposable income

per household member after tax was 585 EUR in 2018. The corresponding average income of survey participants is 610 EUR. Since those two values lie within a certain corridor, we assess our sample to represent Latvian population also in terms of disposable income.

Table 9 shows the income brackets of our sample, as well as gender and language distributions.

Table 9 - Questionnaire respondent distribution by income, gender and language preferences

	Sample	
Income group	Count	%
<199 EUR	41	8.1%
200 - 399 EUR	79	15.6%
400 - 599 EUR	107	21.2%
600 - 799 EUR	73	14.5%
800 - 999 EUR	47	9.3%
> 1000 EUR	63	12.5%
Don't know	95	18.8%

	Sample	
Gender	Count	%
Female	265	52.5%
Male	240	47.5%

	Sample	
Language	Count	%
Latvian	490	97.0%
Russian	15	3.0%

Source: Created by the authors

In Table 9 we can also see that survey participants are divided almost equally by gender. In the questionnaire, 47.5% of respondents are male. According to the CSP (2020), Latvia's population has 46.1% males, so that our sample is representative in context of gender.

As regards ethnicity, we assessed analysing for this demographic variable as not sensible due to 97% of the questionnaire answers given in Latvian. At the beginning of the questionnaire, respondents were required to choose a language. Latvian was set as the default choice, which might have impacted the results of language selection. Despite many Russian speaking respondents being fluent in Latvian and therefore not switching language from the default settings, we limit our sample to only represent the Latvian part of the population.

4.2 Comparison of campaigns

Table 10 shows the average values on a 7-point answer scale for the four different loyalty program types, ordered from left to right by highest to lowest answer points.

Table 10 - Comparison of average value of responses given

Question	Traditional	Collaboration	Lottery	Exploration
Interest	5.70	4.50	4.21	4.05
Value	5.74	4.58	4.32	4.10
Participation	5.76	4.52	4.23	4.06
Recommendation	5.22	4.51	4.21	4.00
Friend Participation	5.40	4.53	4.20	3.96
Rules clarity	5.50	4.84	4.65	4.44

Source: Created by the authors

As can be seen, the traditional loyalty program scores considerably higher in all questions compared to the gamified types.

To statistically assess this observation, we used paired sample T- tests at 95% confidence level. We compared each question across all four loyalty program types. T-test results for the comparisons of the traditional loyalty program with all other programs are shown in Table 11. The results show that the average values of all responses corresponding to the traditional loyalty program are significantly higher ($p < 0.001$) than the gamified programs.

Table 11 - Paired T- test statistics for traditional loyalty campaign vs gamified loyalty campaigns

Paired Samples T-Test

			t	df	p
Tr Q1 Interest	-	Col Q1 Interest	15.645	504	< .001
Tr Q1 Interest	-	Lot Q1 Interest	18.317	504	< .001
Tr Q1 Interest	-	Exp Q1 Interest	19.873	504	< .001
Tr Q2 Value	-	Col Q2 Value	15.993	504	< .001
Tr Q2 Value	-	Lot Q2 Value	18.179	504	< .001
Tr Q2 Value	-	Exp Q2 Value	20.267	504	< .001
Tr Q3 Participation	-	Col Q3 Participation	16.538	504	< .001
Tr Q3 Participation	-	Lot Q3 Participation	19.301	504	< .001
Tr Q3 Participation	-	Exp Q3 Participation	21.167	504	< .001
Tr Q4 Recommendation	-	Col Q4 Recommendation	10.340	504	< .001
Tr Q4 Recommendation	-	Lot Q4 Recommendation	14.608	504	< .001
Tr Q4 Recommendation	-	Exp Q4 Recommendation	16.575	504	< .001
Tr Q5 Friend participation	-	Col Q5 Friend participation	13.062	504	< .001
Tr Q5 Friend participation	-	Lot Q5 Friend participation	17.122	504	< .001
Tr Q5 Friend participation	-	Exp Q5 Friend participation	19.070	504	< .001
Tr Q6 Rules clarity	-	Col Q6 Rules clarity	10.422	504	< .001
Tr Q6 Rules clarity	-	Lot Q6 Rules clarity	12.068	504	< .001
Tr Q6 Rules clarity	-	Exp Q6 Rules clarity	14.086	504	< .001

Note. Student's t-test.

Note. All tests, hypothesis is measurement one greater than measurement two.

Source: Created by the authors

We applied the same approach and tests to compare the three gamified loyalty program types. The results can be found in Appendix C Detailed statistical analysis of survey Figure C. 2.

Based on the results, we can state that the observations shown in Table 10 are statistically significant at 95% confidence level.

4.3 Social-demographic variables impact on valuation of gamified campaigns

We conducted a one-way ANOVA with a 95% confidence interval on age, region, income and gender. The summary of the ANOVA results is shown in Table 12. More detailed results of the ANOVA for each variable can be found in Appendix C, Figure C. 3 - Figure C. 6.

Table 12 - Summary of ANOVA results

	Traditional		Collaboration		Lottery		Exploration	
	F	p	F	p	F	p	F	p
Age	6.597	< .001	3.45	0.01	7.700	< .001	6.313	< .001
Region	2.183	0.068	2.90	0.02	6.728	< .001	5.198	< .001
Income	10.875	< .001	10.26	< .001	20.393	< .001	16.174	< .001
Gender	40.995	< .001	3.23	0.07	0.803	0.370	1.579	0.209

Source: Created by the authors

Age

ANOVA results for age produced a p-value < 0.05 for all loyalty program types. Based on the results, we concluded that some age groups gave significantly different responses. Those differences are further explored with Bonferroni post-hoc tests, which results are summarized in Table 13.

For the traditional loyalty program, we found significant differences comparing the age groups of 18-29 to 30-39 years as well as groups 30-39 to 40-49, 50-59, 60-69.

For the collaboration loyalty program the only statistical significant difference is between age groups 30-39 to 60-69.

For the lottery loyalty program, the age group 18-29 has significantly different results to every other age group, while the other age groups show no significant differences among them.

For the exploration loyalty program, there are statistically significant differences comparing the age groups of both 18-29 and 30-39 to the groups of 50-59 and 60-69.

Region

ANOVA results in Table 12 show gamified loyalty programs (collaboration, lottery and exploration) yielding p-values < 0.05, which indicates that some of the regions gave different responses, but not for the traditional loyalty program.

As shown in Table 13, for the collaboration loyalty program results differ significantly from Latvia's big cities to the countryside.

For the lottery loyalty program, we found significantly different results comparing Riga to any other region.

For the exploration loyalty program, there are significant differences comparing Riga and Riga region to the region groups other city and countryside.

As we can observe that countryside results of questionnaire are statistically different from most of other regions we can assume that some differences in attitude of countryside respondents towards gamified loyalty programs exist.

Table 13 - Bonferroni post-hoc test results

			Traditional		Collaboration		Lottery		Exploration	
	Group A	Group B	t	p_{bonf}	t	p_{bonf}	t	p_{bonf}	t	p_{bonf}
Age	[18-29]	[30-39]	-3.115	0.019	-1.953	0.509	2.845	0.045	-0.018	1.000
		[40-49]	0.595	1.000	0.836	1.000	3.284	0.010	2.380	0.174
		[50-59]	1.790	0.736	0.512	1.000	5.168	< .001	3.588	0.003
		[60-69]	1.063	1.000	1.794	0.730	4.069	< .001	3.554	0.004
	[30-39]	[40-49]	3.577	0.004	2.683	0.073	0.380	1.000	2.286	0.223
		[50-59]	4.773	< .001	2.412	0.159	2.109	0.350	3.430	0.006
		[60-69]	3.862	0.001	3.501	0.005	1.302	1.000	3.421	0.006
	[40-49]	[50-59]	1.138	1.000	-0.331	1.000	1.744	0.813	1.112	1.000
		[60-69]	0.488	1.000	0.977	1.000	0.953	1.000	1.277	1.000
	[50-59]	[60-69]	-0.574	1.000	1.307	1.000	-0.670	1.000	0.254	1.000
Region	Riga	Riga Region	0.439	1.000	-1.153	1.000	2.845	0.045	-0.018	1.000
		Big city	-0.069	1.000	-1.827	0.678	3.284	0.010	2.380	0.174
		Other city	1.333	1.000	-1.227	1.000	5.168	< .001	3.588	0.003
		Countryside	2.659	0.079	1.652	0.986	4.069	< .001	3.554	0.004
	Riga Region	Big city	-0.454	1.000	-0.352	1.000	0.380	1.000	2.286	0.223
		Other city	0.576	1.000	0.182	1.000	2.109	0.350	3.430	0.006
		Countryside	1.704	0.884	2.315	0.207	1.302	1.000	3.421	0.006
	Big city	Other city	1.222	1.000	0.639	1.000	1.744	0.813	1.112	1.000
		Countryside	2.436	0.149	3.019	0.026	0.953	1.000	1.277	1.000
	Other city	Countryside	1.399	1.000	2.565	0.104	-0.670	1.000	0.254	1.000
Income	<199	[200-399]	-2.761	0.122	3.335	0.018	5.026	< .001	1.042	1.000
		[400-599]	-1.883	1.000	1.563	1.000	5.284	< .001	3.360	0.017
		[600-799]	0.096	1.000	2.819	0.102	4.946	< .001	4.092	< .001
		[800-999]	-0.380	1.000	4.008	0.001	6.109	< .001	3.692	0.005
		>1000	0.120	1.000	6.112	< .001	5.440	< .001	5.103	< .001
		Don't know	3.060	0.047	4.876	< .001	10.362	< .001	7.626	< .001
	[200-399]	[400-599]	1.251	1.000	-2.392	0.353	0.021	1.000	2.807	0.106
		[600-799]	3.388	0.015	-0.564	1.000	-0.013	1.000	3.683	0.005
		[800-999]	2.444	0.306	1.165	1.000	1.835	1.000	3.194	0.030
		>1000	3.289	0.021	3.461	0.011	0.735	1.000	4.874	< .001
		Don't know	7.245	< .001	1.769	1.000	6.362	< .001	8.041	< .001
	[400-599]	[600-799]	2.401	0.344	1.734	1.000	-0.035	1.000	1.195	1.000
		[800-999]	1.513	1.000	3.254	0.024	1.914	1.000	0.982	1.000
		>1000	2.330	0.418	5.916	< .001	0.762	1.000	2.562	0.219
		Don't know	6.510	< .001	4.428	< .001	6.850	< .001	5.731	< .001
	[600-799]	[800-999]	-0.534	1.000	1.638	1.000	1.819	1.000	-0.051	1.000
		>1000	0.032	1.000	3.933	0.002	0.735	1.000	1.311	1.000
		Don't know	3.554	0.008	2.319	0.429	6.238	< .001	4.025	0.001
	[800-999]	>1000	0.546	1.000	1.920	1.000	-1.109	1.000	1.220	1.000
		Don't know	3.662	0.005	0.307	1.000	3.537	0.009	3.567	0.008
	>1000	Don't know	3.371	0.016	-1.940	1.000	5.198	< .001	2.468	0.287

Source: Created by the authors

Income

ANOVA results in Table 12 show that all loyalty programs yield p-values < 0.001, so that some income groups have significant differences in their answers to the questionnaire.

Bonferroni post-hoc test results in Table 13 illustrate that most statistically significant differences in answers can be found in the gamified loyalty programs. Nevertheless, all loyalty programs show significantly different responses when comparing most income brackets to the response “Don’t know”. Also, most other significant differences can be observed when comparing lower income brackets to higher ones, especially in gamified programs.

Gender

ANOVA results in Table 12 show that only the traditional loyalty program produces a p-value < 0.05 (even < 0.001) when testing different responses associated with gender. Bonferroni post-hoc test was not conducted for the gender due to only two groups.

5 Discussion and conclusions

This chapter has six sections. First, we shall link the results we received with our research question and literature and discuss possible reasons for the outcome. Second, we shall further deepen our insight in the results and illustrate observations for specific demographics. Third, we shall summarise the implications of this research for the academic and managerial world. Fourth, we shall describe limitations which impacted our research. Fifth, we shall describe avenues for further research based on our observations. Finally, we shall provide a brief conclusion of our research and final thoughts.

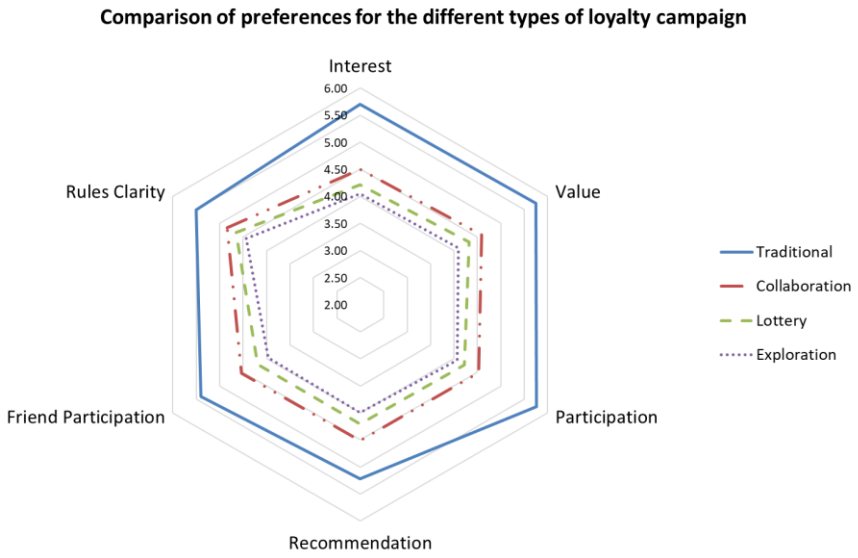
5.1 Gamification impact on the intentions to participate in loyalty program

The research question of our study was to understand whether the incorporation of gamification elements in a grocery loyalty program influences customer intentions to participate in such programs. To answer this question, we formulated three different loyalty programs with gamification elements and compared each to a traditional loyalty program. The latter program was based on observations of existing loyalty programs in Latvia's grocery industry.

To compare the programs, we conducted a survey among a sample representative of Latvia's population, though only in the age range of 18-69 years. To assess customer behaviour through the survey, we designed the questions on the basis of Ajzen's (1991) theory of planned behaviour. Ajzen's model states that intention can be described by a person's attitude, subjective perception about social norms and perceived own ability to perform a given behaviour.

The results of the survey show that the traditional loyalty program gained more positive responses in all three key variables of the theory of planned behaviour. Figure 2 illustrates the average response values per key variable and for each loyalty program.

Figure 2 - Average points per question and per loyalty program



Source: Created by the authors

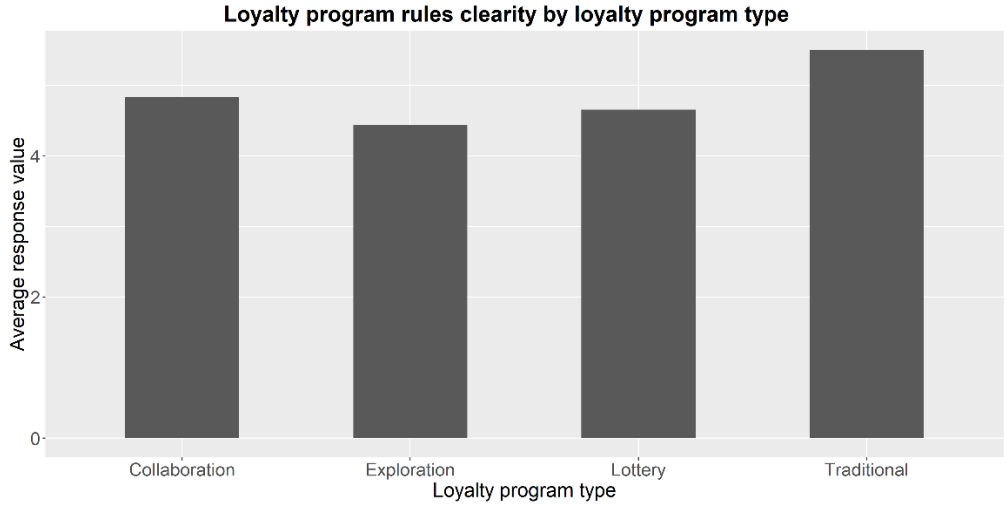
We conclude that Latvia's grocery customers are more willing to participate in the traditional loyalty program than in any of the proposed gamified loyalty programs. Also, we infer that customers are more likely to participate in a loyalty program when it is the traditional one.

The results of the questionnaire also reflect some of the opinions voiced in our focus groups. Common doubts about the effectiveness of gamification programs were that people generally choose grocery stores based on the distance to their homes and/or average price of the products. Consequently, it would be hard for a program to engage customers sufficiently for them to outweigh the other factors and change their chosen store.

Another point of interest is the declining initial intention of participating with the perceived complexity of the loyalty program, i.e. from the collaboration to exploration program. This may contradict academic literature such as Hwang and Choi (2019), Chia-Lin and Mu-Chen (2018) and Alvine (1969), which argue that there is a positive impact of applying gamification to loyalty programs. This outcome could be explained by various reasons.

Figure 3 illustrates the differences in “Rules Clarity” responses for each program.

Figure 3 - Rules Clarity by loyalty program



Source: Created by the authors

The traditional loyalty program was the most clearly understood of all programs. We acknowledge that this might be due to the wording in the questionnaire rather than the nature of the gamified loyalty programs.

One possible solution to resolve this issue could be to test multiple differently worded questionnaires for all programs. However, most Latvians are used to traditional loyalty programs, which could also promote the high “Rules Clarity” for the traditional program.

Another possible reason for the lower response values of gamified loyalty programs could be that they are on paper, and in text form, not exciting enough for customers. Therefore, a replication could test an illustration of the gamified elements e.g. with a mobile app. Such a measure would change value perception of the gamification elements and go in line with the approach employed in Hwang and Choi (2019).

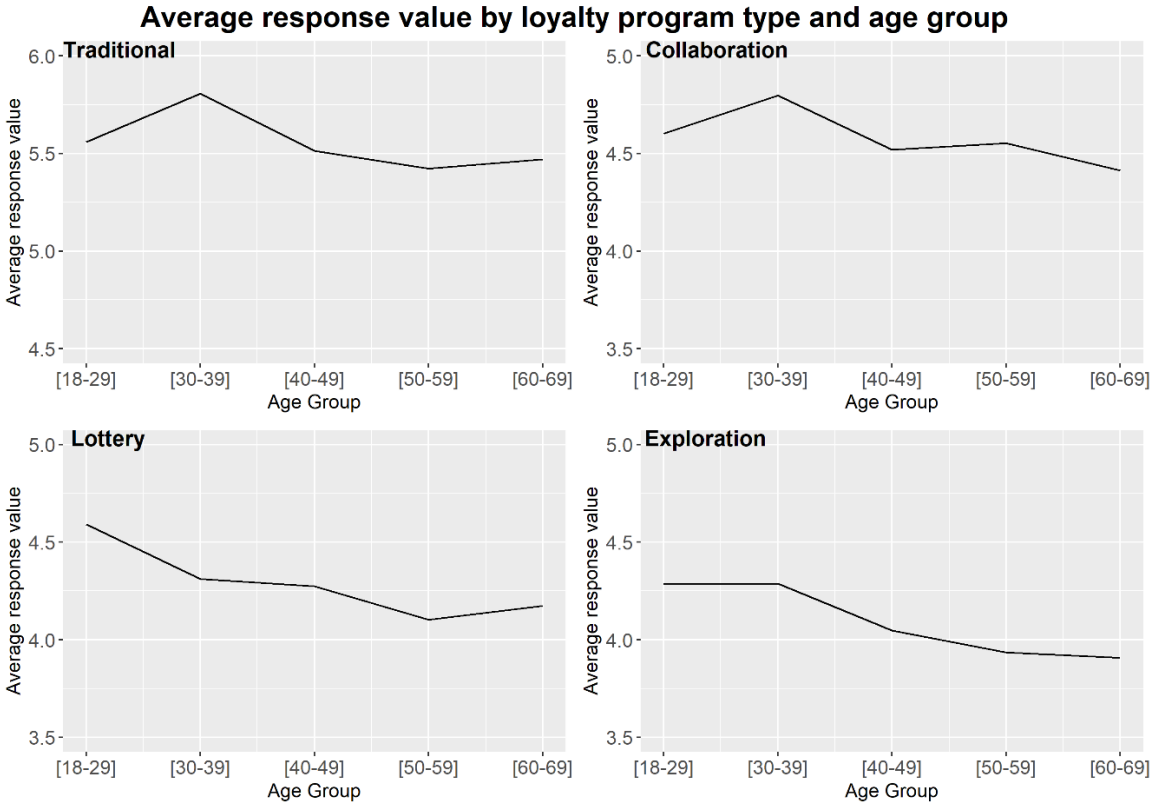
Nevertheless, it should be considered that due to the low value of discounts especially in the grocery sector, the interest of most customers is simply low and loyalty programs may just be a must for stores in order to be competitive. That perspective also resembles the current status of grocery loyalty programs as described by Meyer-Waarden and Benavent (2006). This view is also supported by our focus groups, in which no person indicated to choose a grocery shop because of its loyalty program, but mostly because of location, products and shop atmosphere.

5.2 Demographics impact on customer intention toward loyalty program

Results segmented by age

Figure 4 illustrates the response values for each loyalty program by age category. This visualization shows that younger people perceive gamified loyalty programs more positively, with the effects being statistically significant. This could have various reasons and we cannot give a consolidated conclusion why it is the case. Nevertheless, we assume that younger people have more exposure to gamified services and therefore have a better value perception due to experience.

Figure 4 - Value perception by age group



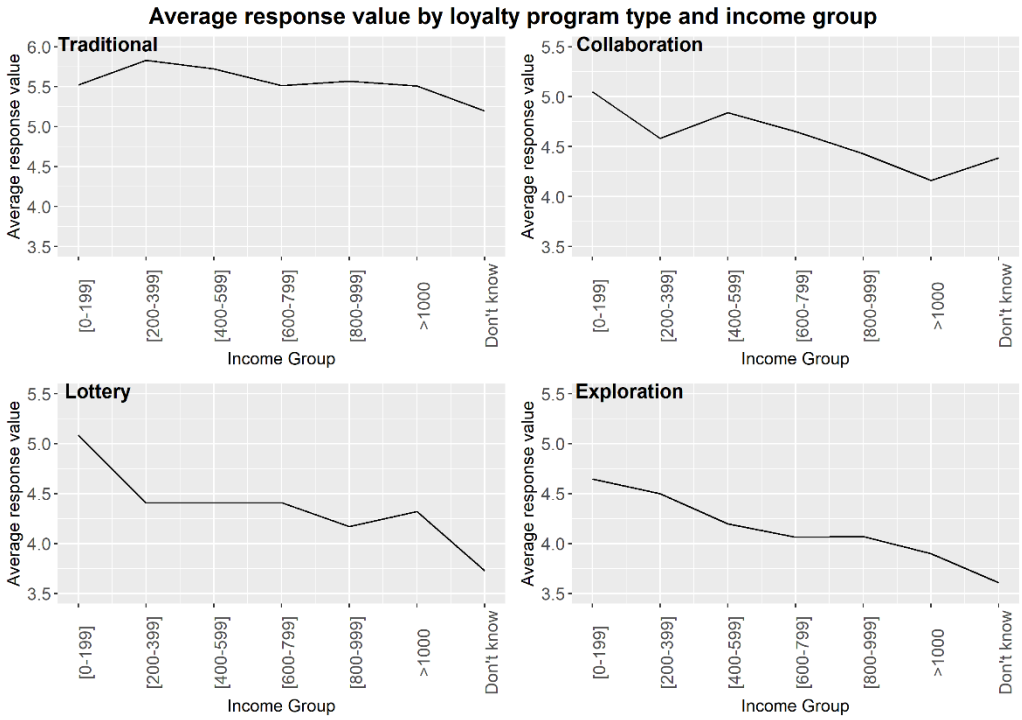
Source: Created by the authors

Results segmented by income

Figure 5 illustrates the response values by income group and visualizes another interesting trend.

As can be seen, the value perception of any loyalty program is generally higher for lower income buckets. This observation makes sense as lower income buckets have a higher relative uplift due to their lower disposable income. The finding is also supported by our focus groups, in which we observed the indifference of high-income individuals towards loyalty programs, presumably because of the little impact on their disposable income.

Figure 5 - Value perception by income group



Source: Created by the authors

Results segmented by region

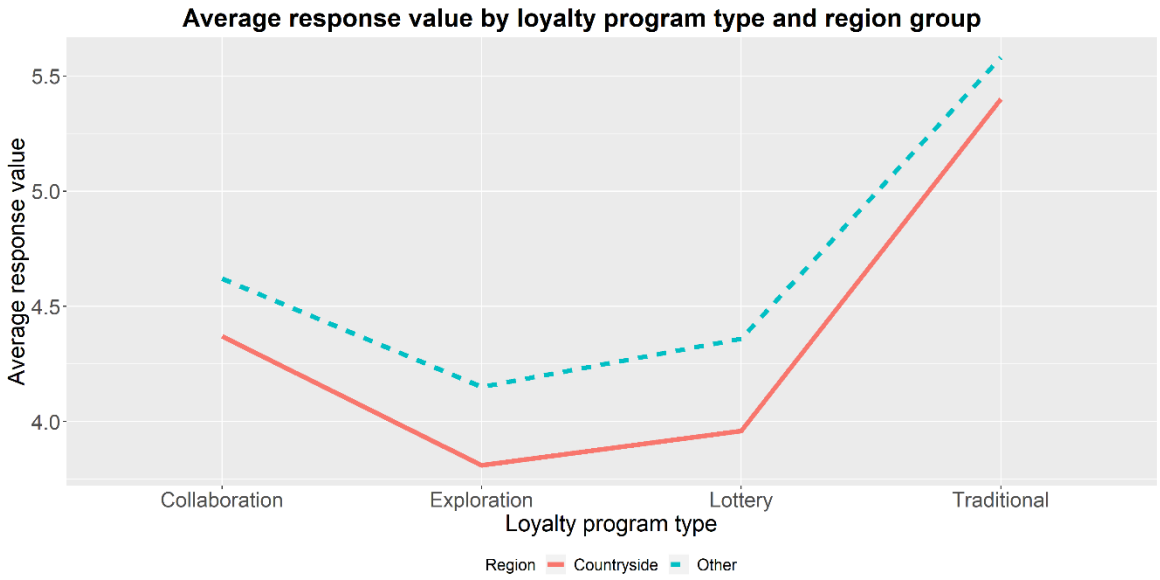
Figure 6 shows the response values by regions, grouped either countryside or other, and loyalty programs.

As can be seen, the value perception of loyalty programs is generally higher in other regions than the countryside. In further detail, the differences between countryside and other regions are greater for gamified programs. This observation indicates that customers living in the countryside have a worse perception of gamified loyalty programs than other people.

One reason for this finding could be that countryside customers are more conservative and subsequently less willing to participate in gamified programs. Also, countryside people might have less experience with loyalty programs, and fewer types available, due to having mostly small local shops in the proximity of their homes.

An in-depth analysis of the regional factors with influence on customer behavior are outside of the scope of this research and should be explored separately.

Figure 6 - Value perception by region



Source: Created by the authors

5.3 Implications

Theoretical

As a contribution to academic marketing research, our work finds that gamification does not seem to provide additional value for Latvian grocery customers. This is reflected by lower customer intentions to participate in gamified loyalty programs compared to traditional ones.

Consequently, gamification seemingly cannot solve grocery loyalty programs' issue of distributing sufficient costly benefits in order to differentiate. Moreover, we showed that gamification is more accepted among younger people as well as lower income groups and less accepted by people living in the countryside.

Managerial

First, one key outcome of the focus group was that the gamification element "Collaboration" is desired by participants. However, this gamification element is already available in the current loyalty programs of two major players in Latvia, but customer awareness of the element's existence is missing. Therefore, we recommend having a good communication strategy of gamification elements to customers in place.

Second, it seems to be a necessity for companies to address the topic of data privacy with regard to loyalty programs. Data privacy concerns were a recurring theme in our focus groups, and Leenheer et al. (2007) described negative effects of these concerns towards loyalty programs as well. Therefore, we recommend communicating proactively regarding data privacy.

Third, it may lead to a public backlash when overemphasizing gamification elements. Some participants of our focus groups viewed gamification as a way to "trick" customers into over-consumption. To circumvent this perspective, grocery stores could employ gamification elements which do not aim at consumption but other topics such as choosing products for eating healthier.

Fourth, based on the survey results, we cannot generally recommend introducing gamification elements in the grocery sector, at least until more research is conducted. Nevertheless, as it resonates well with low income, non-countryside and younger people, some gamified campaigns for certain target segments could be tested.

5.4 Limitations

One major limitation of our work was budget and time, which both had a significant impact on the choice of methodology and the execution of focus groups and the survey. Namely, we would have preferred to have had more focus groups with higher diversity among participants, so that a better representation of Latvia's population would be established. Subsequently, this may have affected our selection of gamification elements used in the surveys. Also, the survey participants neither represent Latvian-Russian population nor all Latvian regions, due to some regions having only a small number of respondents.

The gamification elements studied were expressed only in text form. Therefore, it should be considered that different presentations of the gamification elements might have resulted in different results of the survey.

Finally, our research does not distinguish new and repeat customers. The importance of this is described in section 2.2.

5.5 Suggestions for future research

The literature regarding gamification does not provide a comprehensive definition of gamification, as noted by Deterding et al. (2011) - a vast amount of variations and elements are used, but a consolidated list which comprises more than the most often employed elements is lacking.

Current research of gamification states that the interest in gamification gained popularity after 2010. This contradicts earlier literature such as Alvine (1969), which studied a positive impact on grocery store revenues by introducing games in their marketing activities in the 1960s. The link between gamification and historical approaches in

marketing is blurry and there is no clear picture whether gamification is something new or rather the evolution of old methods with new technology.

We have found more avenues for further research from the insights of our focus groups. Recurringly, participants recalled to have changed their purchase behavior due to loyalty programs aimed at their children, such as sticker collections. This implies that loyalty programs might be better suited for targeting children instead of parents in order to increase the share of wallet of the family.

As regards methodology, we reflected that for future studies on gamification, a cleverly designed presentation and methodology as a whole might be crucial. Due to gamification's novelty, at least in its technological context, the concept might be better understood by having experienced it rather than having it described to. This is no new approach in innovation, which was famously expressed by Henry Ford with regards to his successful Ford T-model: *"If I had asked people what they wanted, they would have said faster horses."*

Therefore, experiments might produce different results depending on their type of presentation to participants. Ideally, a methodology should include multiple research scenarios with different visualizations as well as descriptions of the same gamification elements. In our view, that would enable a better distinction of the impact of gamification elements compared to their visualization.

5.6 Concluding thoughts

The aim of our executive master thesis was to identify whether the introduction of gamification elements in loyalty programs increase the perceived value of the loyalty program for the customer, and thereby the intention to participate in the loyalty program. In chapter 2, we described the significance of grocery loyalty programs as they see a widespread use across many countries (Meyer-Waarden & Benavent, 2006). However, grocery loyalty programs have undeniable issues in terms of differentiation, which can be observed in reality via Maxima's and Rimi's loyalty programs in Latvia. We conclude from our literature review that the effectiveness of loyalty programs can be increased through non-economic benefits (i.e. innovation), and that gamification, with its recently growing popularity, is a suitable tool to drive that value enhancement.

In contrast, both our focus groups and survey results revealed that across all included demographic variables, traditional loyalty programs are superior at increasing customers' willingness to participate in loyalty programs. These results contradict some gamification

research such as Hwang and Choi (2019) as well as Chia-Lin and Mu-Chen (2018), which attribute gamification a positive impact on customer behaviour. However, this finding is consistent with Hamari et al. (2014), who state that not all studies show distinct positive effects from including gamification elements in loyalty programs.

While our findings underlie the limitations pointed out in section 5.4, they were significant and robust enough for us to conclude that further research is necessary in order to reject them.

Our results show that customers have a higher intention to join a traditional loyalty program than a gamified one. Still, our opinion is that gamification remains interesting as a concept and should be researched by further studies as well as tested extensively in Latvian grocery stores. Such tests should be focused on lower-income, younger and/or non-countryside customers, as indicated by our results.

As a final assessment, we conclude that gamification can be a valuable tool for specific target audiences, but further research and/or experiments need to be conducted.

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7 Appendices

Appendix A Introduction to gamification presentation

Figure A. 1 Presentation for introduction of gamification elements to focus group

Game Mechanics

- Exploring: (possibilities to freely explore the game / game world).
- Collecting: (acquisition of useful or collectable game resources).
- Competition: (possibility for a player or a group of players to win while other loose).
- Status acquisition: (conditions that have to be met for players to reach a higher level).
- Collaboration: (players must act together to achieve a common goal).
- Challenge: (quizzes, quests and other tasks that require effort to solve it).
- Development: (conditions allowing players to acquire new knowledge or skills).

Visualisation Components

- Points (usually a numerical representation of rewarding the player for activities carried out in a game).
- Badges (the visual representation of player achievements indicating that player reached specific status or level).
- Leaderboards (listing of players based on their performance in the game).
- Rewards (benefits or (game) assets given to a player based on his achievement in the game).
- Levels (a system of advancing in the game by collecting a certain amount of points or carrying out specific actions).
- Feedback (providing the player with information about his performance in the game).

Source: Created by the authors

Appendix B Questionnaires forms

Figure B. 1 Questionnaire form in Latvian

Lūdzu sniedziet savu viedokli par aprakstītam lojalitātes kampaņam pārtikas veikalā!

Kampaņa 1

Iepērcies izmantot veikala lojalitātes karti un par katru pirkumu uzkrāj virtuālo naudu 5% no pirkuma summas. Tu vari izmantot uzkrāto virtuālo naudu apmaksājot savus nākotnes pirkumus.

	Pilnīgi piekrītu	Nepiekrītu	Daļēji piekrītu	Ne piekrītu, ne nepiekrītu	Daļēji piekrītu	Piekrītu	Pilnība piekrītu
Piedalīšanas lojalitātes kampaņā šķistu man interesanta	○	○	○	○	○	○	○
Piedalīšanās lojalitātes kampaņā būtu man izdevīga	○	○	○	○	○	○	○
Es labprāt piedalītos šadā lojalitātes kampaņa	○	○	○	○	○	○	○
Es ieteiktu saviem draugiem piedalīties šaja lojalitātes kampaņā	○	○	○	○	○	○	○
Vairums cilvēku manu tuvu draugu vai ģimenes lokā labprāt piedalītos šajā lojalitātes kampaņā	○	○	○	○	○	○	○
Kampaņas noteikumi man ir pilnā skaidri un saprotami	○	○	○	○	○	○	○

Kampaņa 2

Apvieno savu un draugu lojalitātes kartes un izmantojiet kartes priekšrocības kopā. Iepērcieties izmantot lojalitātes karti un par katru pirkumu uzkrājiet virtuālo naudu 5% no pirkuma summas. Ikviens no jums var izmantot virtuālās naudas uzkrājumu apmaksājot savus nākotnes pirkumus

	Pilnīgi piekrītu	Nepiekrītu	Daļēji piekrītu	Ne piekrītu, ne nepiekrītu	Daļēji piekrītu	Piekrītu	Pilnība piekrītu
Piedalīšanas lojalitātes kampaņā šķistu man interesanta	○	○	○	○	○	○	○
Piedalīšanās lojalitātes kampaņā būtu man izdevīga	○	○	○	○	○	○	○
Es labprāt piedalītos šadā lojalitātes kampaņa	○	○	○	○	○	○	○
Es ieteiktu saviem draugiem piedalīties šaja lojalitātes kampaņā	○	○	○	○	○	○	○
Vairums cilvēku manu tuvu draugu vai ģimenes lokā labprāt piedalītos šajā lojalitātes kampaņā	○	○	○	○	○	○	○
Kampaņas noteikumi man ir pilnā skaidri un saprotami	○	○	○	○	○	○	○

Kampaņa 3

Uzmini savu pirkumu svaru un laimē atlaidi no 0% līdz 20% pirkuma apmaksai. Atlaides apjoms tiek izlozets pie kases apmaksājot pirkumu. Lai piedalītios kampaņā Tavā pirkuma grozā jābūt vismaz 10 dažādām precēm par kopējo summu 30 EUR.

	Pilnīgi piekrītu	Nepiekrītu	Daļēji piekrītu	Ne piekrītu, ne nepiekrītu	Daļēji piekrītu	Piekrītu	Pilnība piekrītu
Piedalīšanas lojalitātes kampaņā šķistu man interesanta	○	○	○	○	○	○	○
Piedalīšanās lojalitātes kampaņā būtu man izdevīga	○	○	○	○	○	○	○
Es labprāt piedalītos šadā lojalitātes kampaņa	○	○	○	○	○	○	○
Es ieteiktu saviem draugiem piedalīties šaja lojalitātes kampaņā	○	○	○	○	○	○	○
Vairums cilvēku manu tuvu draugu vai ģimenes lokā labprāt piedalītos šajā lojalitātes kampaņā	○	○	○	○	○	○	○
Kampaņas noteikumi man ir pilnā skaidri un saprotami	○	○	○	○	○	○	○

Kampaņa 4

Veikalā ir paslēptas preces, kuras iekļaujot savā pirkumā vari iegūt papildus atlaidi pirkumam no 1% līdz 20%. Atlaides apjomu nosaka atrasto preču kombinācijas un skaits. Jo vairāk paslēptas preces atrodi, jo lielāku atlaidi vari saņemt. Norādes kā atrast paslēptas preces vari saņemt veikala informācijas centrā vai savā mobilajā aplikācijā.

	Pilnīgi piekrītu	Nepiekrītu	Daļēji piekrītu	Ne piekrītu, ne nepiekrītu	Daļēji piekrītu	Piekrītu	Pilnība piekrītu
Piedalīšanas lojalitātes kampaņā šķistu man interesanta	○	○	○	○	○	○	○
Piedalīšanās lojalitātes kampaņā būtu man izdevīga	○	○	○	○	○	○	○
Es labprāt piedalītos šadā lojalitātes kampaņa	○	○	○	○	○	○	○
Es ieteiktu saviem draugiem piedalīties šaja lojalitātes kampaņā	○	○	○	○	○	○	○
Vairums cilvēku manu tuvu draugu vai ģimenes lokā labprāt piedalītos šajā lojalitātes kampaņā	○	○	○	○	○	○	○
Kampaņas noteikumi man ir pilnā skaidri un saprotami	○	○	○	○	○	○	○

Source: Created by the authors

Figure B. 2 Questionnaire form in Russian

Пожалуйста предоставьте своё мнение о кампании лояльности в продуктовом магазине!

Кампания 1

Делайте покупки используя карту лояльности магазина и накапливайте виртуальные деньги за каждую покупку в размере 5% от суммы покупки. Вы можете использовать накопленные виртуальные деньги для оплаты Ваших будущих покупок.

	Полностью несогласен	Несогласен	Частично несогласен	Не несогласен не согласен	Частично согласен	Согласен	Полностью согласен
Участие в кампании лояльности мне кажется интересным	○	○	○	○	○	○	○
Участие в кампании лояльности было бы выгодно для меня	○	○	○	○	○	○	○
Я хотел бы принять участие в такой кампании лояльности	○	○	○	○	○	○	○
Я рекомендовал бы своим друзьям принять участие в этой кампании лояльности	○	○	○	○	○	○	○
Моя семья и близкие друзья были бы рады принять участие в этой кампании лояльности	○	○	○	○	○	○	○
Условие акции мне полностью ясны	○	○	○	○	○	○	○

Кампания 2

Объединив свою карту лояльности с картами друзей, Вы поделитесь преимуществами карты. Делайте покупки использовав карту лояльности магазина, и накапливайте виртуальные деньги за каждую покупку в размере 5% от суммы покупки вместе. Каждый из вас может использовать накопленные виртуальные деньги для оплаты будущих покупок.

	Полностью несогласен	Несогласен	Частично несогласен	Не несогласен не согласен	Частично согласен	Согласен	Полностью согласен
Участие в кампании лояльности мне кажется интересным	○	○	○	○	○	○	○
Участие в кампании лояльности было бы выгодно для меня	○	○	○	○	○	○	○
Я хотел бы принять участие в такой кампании лояльности	○	○	○	○	○	○	○
Я рекомендовал бы своим друзьям принять участие в этой кампании лояльности	○	○	○	○	○	○	○
Моя семья и близкие друзья были бы рады принять участие в этой кампании лояльности	○	○	○	○	○	○	○
Условие акции мне полностью ясны	○	○	○	○	○	○	○

Кампания 3

Угадайте вес своих покупок и выиграйте скидку от 0% до 20% на оплату покупки. Размер скидки разыгрывается у кассы во время оплаты покупки. Для участие в акции в вашей корзине должно быть не менее 10 различных товаров на общую сумму 30 евро.

	Полностью несогласен	Несогласен	Частично несогласен	Не несогласен не согласен	Частично согласен	Согласен	Полностью согласен
Участие в кампании лояльности мне кажется интересным	○	○	○	○	○	○	○
Участие в кампании лояльности было бы выгодно для меня	○	○	○	○	○	○	○
Я хотел бы принять участие в такой кампании лояльности	○	○	○	○	○	○	○
Я рекомендовал бы своим друзьям принять участие в этой кампании лояльности	○	○	○	○	○	○	○
Моя семья и близкие друзья были бы рады принять участие в этой кампании лояльности	○	○	○	○	○	○	○
Условие акции мне полностью ясны	○	○	○	○	○	○	○

Кампания 4

В магазине спрятаны товары, которые в случае покупки дадут Вам дополнительную скидку от 1% до 20% на Вашу покупку. Размер скидки зависит от комбинации и количество найденных товаров. Чем больше предметов Вы найдете, тем больше скидка. Подсказки о том, как найти спрятанные товары в магазине можно получить в информационном центре магазина, или в Вашем мобильном приложении.

	Полностью несогласен	Несогласен	Частично несогласен	Не несогласен не согласен	Частично согласен	Согласен	Полностью согласен
Участие в кампании лояльности мне кажется интересным	○	○	○	○	○	○	○
Участие в кампании лояльности было бы выгодно для меня	○	○	○	○	○	○	○
Я хотел бы принять участие в такой кампании лояльности	○	○	○	○	○	○	○
Я рекомендовал бы своим друзьям принять участие в этой кампании лояльности	○	○	○	○	○	○	○
Моя семья и близкие друзья были бы рады принять участие в этой кампании лояльности	○	○	○	○	○	○	○
Условие акции мне полностью ясны	○	○	○	○	○	○	○

Source: Created by the authors

Appendix C Detailed statistical analysis of survey

Figure C. 1 Survey participant distribution by region

Region	Count	%
Rīga	164	32.5%
Pierīga	56	11.1%
Daugavpils	16	3.2%
Jelgava	17	3.4%
Jēkabpils	8	1.6%
Jūrmala	8	1.6%
Liepāja	16	3.2%
Rēzekne	4	0.8%
Valmiera	9	1.8%
Ventspils	14	2.8%
Other city	116	23.0%
Lauki	77	15.2%

Source: Created by the authors

Figure C. 2 Gamified loyalty campaign comparison with Paired T – test

Paired Samples T-Test

			t	df	p
Col Q1 Interest	-	Lot Q1 Interest	3.797	504	< .001
Col Q1 Interest	-	Exp Q1 Interest	5.710	504	< .001
Col Q2 Value	-	Lot Q2 Value	3.505	504	< .001
Col Q2 Value	-	Exp Q2 Value	6.436	504	< .001
Col Q3 Participation	-	Lot Q3 Participation	3.973	504	< .001
Col Q4 Recommendation	-	Lot Q4 Recommendation	4.305	504	< .001
Col Q4 Recommendation	-	Exp Q4 Recommendation	6.750	504	< .001
Col Q5 Friend participation	-	Lot Q5 Friend participation	4.917	504	< .001
Col Q5 Friend participation	-	Exp Q5 Friend participation	7.906	504	< .001
Col Q6 Rules clarity	-	Lot Q6 Rules clarity	2.590	504	0.005
Lot Q1 Interest	-	Exp Q1 Interest	2.559	504	0.005
Lot Q2 Value	-	Exp Q2 Value	3.532	504	< .001
Lot Q3 Participation	-	Exp Q3 Participation	2.579	504	0.005
Lot Q4 Recommendation	-	Exp Q4 Recommendation	3.646	504	< .001
Lot Q5 Friend participation	-	Exp Q5 Friend participation	3.924	504	< .001
Lot Q6 Rules clarity	-	Exp Q6 Rules clarity	3.780	504	< .001

Note. Student's t-test.

Note. All tests, hypothesis is measurement one greater than measurement two.

Test of Normality (Shapiro-Wilk)

			W	p
Col Q1 Interest	-	Lot Q1 Interest	0.919	< .001
Col Q1 Interest	-	Exp Q1 Interest	0.924	< .001
Col Q2 Value	-	Lot Q2 Value	0.920	< .001
Col Q2 Value	-	Exp Q2 Value	0.921	< .001
Col Q3 Participation	-	Lot Q3 Participation	0.919	< .001
Col Q4 Recommendation	-	Lot Q4 Recommendation	0.893	< .001
Col Q4 Recommendation	-	Exp Q4 Recommendation	0.903	< .001
Col Q5 Friend participation	-	Lot Q5 Friend participation	0.878	< .001
Col Q5 Friend participation	-	Exp Q5 Friend participation	0.904	< .001
Col Q6 Rules clarity	-	Lot Q6 Rules clarity	0.851	< .001
Lot Q1 Interest	-	Exp Q1 Interest	0.871	< .001
Lot Q2 Value	-	Exp Q2 Value	0.867	< .001
Lot Q3 Participation	-	Exp Q3 Participation	0.903	< .001
Lot Q4 Recommendation	-	Exp Q4 Recommendation	0.843	< .001
Lot Q5 Friend participation	-	Exp Q5 Friend participation	0.861	< .001
Lot Q6 Rules clarity	-	Exp Q6 Rules clarity	0.784	< .001

Note. Significant results suggest a deviation from normality.

Source: Created by the authors

Figure C. 3 ANOVA table, Traditional loyalty program

ANOVA Traditional

ANOVA - Traditional

Cases	Sum of Squares	df	Mean Square	F	p
Income	128.729	6.000	21.455	10.875	< .001
Residual	5964.110	3023.000	1.973		

Note. Type III Sum of Squares

Post Hoc Tests

Post Hoc Comparisons - Income

		Mean Difference	SE	t	p_{bonf}
1	2	−0.305	0.110	−2.761	0.122
	3	−0.198	0.105	−1.883	1.000
	4	0.011	0.112	0.096	1.000
	5	−0.047	0.123	−0.380	1.000
	6	0.014	0.115	0.120	1.000
	7	0.328	0.107	3.060	0.047
2	3	0.106	0.085	1.251	1.000
	4	0.315	0.093	3.388	0.015
	5	0.258	0.106	2.444	0.306
	6	0.319	0.097	3.289	0.021
	7	0.633	0.087	7.245	< .001
3	4	0.209	0.087	2.401	0.344
	5	0.152	0.100	1.513	1.000
	6	0.212	0.091	2.330	0.418
	7	0.526	0.081	6.510	< .001
4	5	−0.057	0.107	−0.534	1.000
	6	0.003	0.099	0.032	1.000
	7	0.317	0.089	3.554	0.008
5	6	0.060	0.111	0.546	1.000
	7	0.374	0.102	3.662	0.005
6	7	0.314	0.093	3.371	0.016

Source: Created by the authors

Figure C. 4 ANOVA table Collaboration loyalty program

ANOVA Collaboration ▾

ANOVA - Collaboration

Cases	Sum of Squares	df	Mean Square	F	p
Income	193.375	6.000	32.229	10.260	< .001
Residual	9495.663	3023.000	3.141		

Note. Type III Sum of Squares

Post Hoc Tests

Post Hoc Comparisons - Income

		Mean Difference	SE	t	p_{bonf}
1	2	0.464	0.139	3.335	0.018
	3	0.208	0.133	1.563	1.000
	4	0.398	0.141	2.819	0.102
	5	0.620	0.155	4.008	0.001
	6	0.887	0.145	6.112	< .001
	7	0.659	0.135	4.876	< .001
2	3	−0.257	0.107	−2.392	0.353
	4	−0.066	0.117	−0.564	1.000
	5	0.155	0.133	1.165	1.000
	6	0.423	0.122	3.461	0.011
	7	0.195	0.110	1.769	1.000
3	4	0.190	0.110	1.734	1.000
	5	0.412	0.127	3.254	0.024
	6	0.680	0.115	5.916	< .001
	7	0.452	0.102	4.428	< .001
4	5	0.222	0.135	1.638	1.000
	6	0.489	0.124	3.933	0.002
	7	0.261	0.113	2.319	0.429
5	6	0.268	0.139	1.920	1.000
	7	0.040	0.129	0.307	1.000
6	7	−0.228	0.118	−1.940	1.000

Source: Created by the authors

Figure C. 5 ANOVA table, Lottery loyalty program

ANOVA Lottery ▾

ANOVA - Lottery ▾

Cases	Sum of Squares	df	Mean Square	F	p
Income	360.773	6.000	60.129	20.393	< .001
Residual	8913.122	3023.000	2.948		

Note. Type III Sum of Squares

Post Hoc Tests

Post Hoc Comparisons - Income

		Mean Difference	SE	t	p_{bonf}
1	2	0.678	0.135	5.026	< .001
	3	0.680	0.129	5.284	< .001
	4	0.677	0.137	4.946	< .001
	5	0.915	0.150	6.109	< .001
	6	0.765	0.141	5.440	< .001
	7	1.357	0.131	10.362	< .001
2	3	0.002	0.104	0.021	1.000
	4	−0.002	0.114	−0.013	1.000
	5	0.237	0.129	1.835	1.000
	6	0.087	0.118	0.735	1.000
	7	0.679	0.107	6.362	< .001
3	4	−0.004	0.106	−0.035	1.000
	5	0.235	0.123	1.914	1.000
	6	0.085	0.111	0.762	1.000
	7	0.677	0.099	6.850	< .001
4	5	0.238	0.131	1.819	1.000
	6	0.089	0.121	0.735	1.000
	7	0.681	0.109	6.238	< .001
5	6	−0.150	0.135	−1.109	1.000
	7	0.442	0.125	3.537	0.009
6	7	0.592	0.114	5.198	< .001

Source: Created by the authors

Figure C. 6 ANOVA table, Exploration loyalty program

ANOVA Exploration ▾

ANOVA - Exploration

Cases	Sum of Squares	df	Mean Square	F	p
Income	309.746	6.000	51.624	16.174	< .001
Residual	9648.946	3023.000	3.192		

Note. Type III Sum of Squares

Post Hoc Tests

Post Hoc Comparisons - Income

		Mean Difference	SE	t	p_{bonf}
1	2	0.146	0.140	1.042	1.000
	3	0.450	0.134	3.360	0.017
	4	0.582	0.142	4.092	< .001
	5	0.575	0.156	3.692	0.005
	6	0.747	0.146	5.103	< .001
	7	1.039	0.136	7.626	< .001
2	3	0.304	0.108	2.807	0.106
	4	0.436	0.118	3.683	0.005
	5	0.429	0.134	3.194	0.030
	6	0.601	0.123	4.874	< .001
	7	0.893	0.111	8.041	< .001
3	4	0.132	0.111	1.195	1.000
	5	0.125	0.128	0.982	1.000
	6	0.297	0.116	2.562	0.219
	7	0.589	0.103	5.731	< .001
4	5	−0.007	0.136	−0.051	1.000
	6	0.164	0.125	1.311	1.000
	7	0.457	0.114	4.025	0.001
5	6	0.171	0.141	1.220	1.000
	7	0.464	0.130	3.567	0.008
6	7	0.292	0.119	2.468	0.287

Source: Created by the authors