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OPPORTUNITY FOR BANKS TO UTILIZE GAMIFICATION AS A TOOL TO PROMOTE FINANCIAL EDUCATION TO CHILDREN

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BACHELOR´S THESIS | ABSTRACT
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OPPORTUNITY FOR BANKS TO UTILIZE GAMIFICATION AS A TOOL TO PROMOTE FINANCIAL EDUCATION TO CHILDREN

This thesis has several objectives: to investigate how banks benefit from promoting financial education for children via gamified solutions, to investigate how customers perceive the use of gamification in education as well as to understand the general opinion regarding financial education for both adults and children. The research portrays bank and customers' points of view.

To meet these objectives, a mixed-method research model has been adopted. In order to collect qualitative and quantitative data the researcher has conducted a set of interviews and has distributed 88 surveys.

This thesis touches on financial literacy, the banking sector and gamification as three main areas of the research. In the first part of the thesis the researcher presents a rigorous analysis of the existing theories on these topics. An extended primary data analysis is presented in the second part of the research and provides a deep overview of how these areas interrelate leading to the conclusion of the thesis.

The findings of the research suggest that there is a tremendous need for financial education among both adults and children. Since this need is not fully addressed by the government organizations it allows third party providers (in this case banks) to seize opportunity and benefits of being "first to market". However interacting with children may be challenging and new approaches should be elaborated. The researcher presents a gamified solution developed for ING bank that illustrates all the principles of gamification as well as bank's reasons to invest in this solution. Interviews and surveys of the potential customers support the hypothesis that utilizing gamification as a tool to deliver financial education to children can benefit both adults and banks.

KEYWORDS: Financial literacy, financial education, online banking, children savings account, gamification, gamified solution

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LIST OF ABBREVIATIONS (OR) SYMBOLS

HSPP	High School Planning Program
IMF	International
OECD	Organisation for Economic Co-operation and Development
COA	Cost of acquisition per customer
CSR	Corporate Social Responsibility
UN	the United Nations
CYFI	Child and Youth Finance International
CFPB	The Consumer Financial Protection Bureau

1 INTRODUCTION

This thesis has been written for the International Business degree program at Turku university Of Applied Sciences. This thesis follows the regulations set by the degree program and was supervised by the teacher supervisor Mr. Querrec Emmanuel.

1.1.1 Research background

Financial products and services have become increasingly accessible the general population. However, the availability of financial products such as loans, mortgages, credits cards, retirement plans proves to be very complex and hard to understand for an average individual who has little or no financial education (Lusardi and Mitchell, 2014). Being financially literate enables individuals to make sound financial decisions by assessing all the risks and opportunities that the financial industry offers. It is worth noting that being financially literate benefits not only individuals but also economy and society.

Researchers have undertaken multiple international studies to test the level of financial literacy among populations and the results show that individuals demonstrate a very low level of financial knowledge. Another interesting observation reveals that individuals usually overestimate their knowledge of financial topics and only through rigorous testing is it possible to measure an adequate level.

The importance of financial education for both adults and children has been acknowledged throughout the world, as a result different approaches (both in-school and out-of-school) have been developed. There are many providers of financial education to the average citizen, from government institutions to private organizations. Banks also play an active role in financial education by engaging in mutually beneficial relationship with the customers. However banks role in education usually focuses solely on adults. Only a few focus on children since this market segment has been perceived for a long time as difficult and challenging to work with. Yet banks that pioneer in providing financial education to children enjoy a wide range of benefits from creating a socially responsible reputation to greatly increasing their customer base before competitors realize these opportunities.

Since children and teenagers of the twenty first century grow up surrounded by technology banks as well as other financial education providers face a challenge finding a way to engage and interact with this generation. Research on Children's preferences reveals that children/teenagers prefer technology, games, competition, and rewards to ordinary lectures and worksheets (McCormick, 2008).

"Gamification" is a relatively new approach that addresses these challenges. In this thesis the researcher uses the definition of Deterding et al. (2011) who defines gamification as "the use of game design elements in non-game contexts". Gamification is used throughout different industries such as education, business, health care, marketing, etc.

Several researchers advocate that using gamification in education increases motivation and engagement among children/teenagers hence facilitates better assimilation of presented information and ensures long-lasting result.

1.1.2 Research objectives

This thesis has several objectives:

- To understand the general opinion regarding the importance of financial literacy for both adults and children

- To investigate how banks benefit from promoting financial education for children via gamified applications

- To investigate how customers perceive banks that provide financial education for children

Motivation of this research came from my personal interests. I have been following gamification trends for the last two years on my own initiative. Reading books and articles about this topic made me enthusiastic about the possibilities that can be achieved through the use of gamification. As a result I chose to write my thesis about gamification, however it was hard to decide which aspects to focus on. An interview with a professional in the gamification field helped me to decide the direction of my future research.

I believe this thesis is a great opportunity to combine my knowledge and passion about this subject. Moreover I feel this thesis could be a good base for my master's thesis in the future.

Additionally, this research may be useful for banks and financial institutions that consider introducing gamification into their existing services as well as third party providers that can also exploit gamification.

1.1.3 Research questions

To meet the above-mentioned objectives, the researcher aimed to answer the following set of research questions:

1. How important is financial literacy for both adults and children?
2. What is the public opinion regarding the use of gamification in education?
3. How do banks benefit from promoting gamified financial programs for children?

1.1.4 Structure of the thesis

The first part of the thesis is Literature Review (Chapter 2). This part introduces existing knowledge and theories that were chosen based on their relevance to financial literacy, banking industry and gamification.

The second part is Research Methodology (Chapter 3). This part describes the research approach, research design, the process of data collection as well as reliability and limitations of the research.

The third part is Research Findings (Chapter 4). This part analyzes the research findings obtained from the interviews and questionnaires.

The final part is the Conclusion (Chapter 5). This part provides the answers to the research questions shown in the Chapter 1.

2 LITERATURE REVIEW

This section will define and explain the value of financial literacy throughout the world. Then analyze and review banks' existing and potential role in assisting with financial literacy through multiple channels with a special focus on Gamification and its potential in educating/marketing to minors.

2.1 Financial literacy

2.1.1 The importance of financial literacy

In the last 20 years a range of financial products and services have grown tremendously and these products have become more accessible to an average household. Despite the rapid spread of complex financial products, including student loans, mortgages, credit cards, electronic and online banking, many of them are proven to be difficult to assess by an average consumer unfamiliar with the basics of finances and economics (Lusardi and Mitchell, 2014). The variety of financial services challenges people to take personal responsibility on when and how much to borrow, spend, invest and save. Lusardi (2008) points out that these decisions are far from simple. They require consumers to gather, process, and project data on compound interest, risk diversification, inflation, and the asset universe. These are important decisions to make and mistakes can be very costly. The risk is even larger for financially illiterate investors. Therefore there is a need for improving financial literacy among households through financial education that would prepare consumers to make sound financial decisions.

The Presidents Advisory Council on Financial Literacy (PACFL, 2008), defines financial literacy as following:

> Knowledge of basic economic and financial concepts, as well as the ability to use that knowledge and other financial skills to manage financial resources effectively for a lifetime of financial well-being.

Different researchers and organizations define “financial literacy” in many distinctive ways, highlighting different components that are all interrelated. Figure 1 explains the logic of relationships among various components.

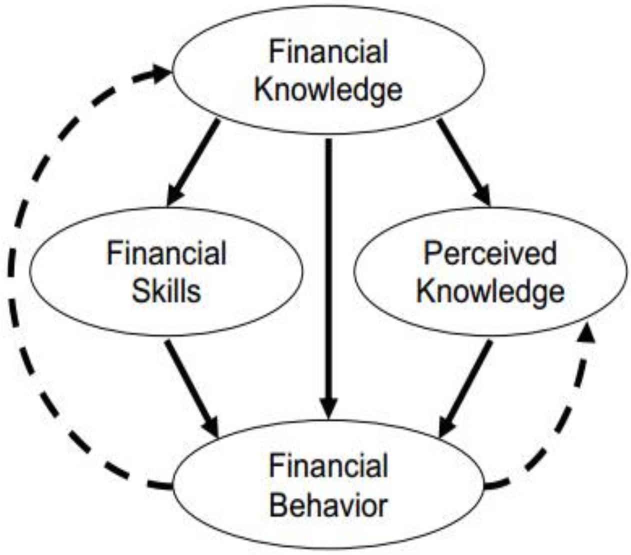


Figure 1 Conceptual Model of Financial Literacy (Hung et al. , 2009)

The importance of financial literacy is recognized in both developed and developing countries. World Bank, European Commission, OECD and other government and non-government organizations invest in various financial education programs in order to promote financial literacy. Financial literacy benefits consumers, financial system and economy (Capuano and Ramsay, 2011). Financial literacy enables consumers to behave in a particular way that creates a whole range of benefits, including greater capacity to save money, set retirement goals, pay off credit cards, be realistic as for personal financial knowledge that therefore translates into more adequate financial behavior. Financially knowledgeable consumers better understand the financial market and thus they possess greater bargaining power. The European Commission (2007) notes:

People who understand financial issues make better choices of financial services for their particular needs, and are more inclined to heed regulatory risk warnings. They are less likely to purchase products they do not need, be tied into products that they do not understand, or take risks that could drive them into financial difficulty.

2.1.2 International evidence of financial literacy

The first step to improve financial literacy among populations is to be able to measure it. Multiple researches have been conducted on this topic and the result is far from positive. The surveys used to assess people's knowledge show that a large proportion of the adult population knows very little about finances and that many individuals are unfamiliar with the basics of finances, such as risk diversification, interest compounding, inflation, and other financial instruments (Lusardi, 2008).

Also Lusardi and Mitchell (2011) note, "While it is important to assess how financially literate people are in practice it is difficult to explore how people process economic information and make informed decisions about household finances". However, a set of three questions developed by Lusardi and Mitchell for the American Health and Retirement Study (HRS) in 2004 is commonly used to assess the level of financial literacy not only in the United States of America but in other countries as well.

The Figure 2 shows these three questions that reflect three basic financial concepts: interest rate compounding, inflation and risk diversification.

1) Suppose you had $100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?

   More than $102
   Exactly $102
   Less than $102
   Do not know
   Refuse to answer

2) Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?

   More than today
   Exactly the same
   Less than today
   Do not know
   Refuse to answer

3) Please tell me whether this statement is true or false. "Buying a single company's stock usually provides a safer return than a stock mutual fund."

   True
   False
   Do not know
   Refuse to answer

* Correct answers in bold.

Figure 2 Financial literacy questions (Lusardi and Mitchell, 2011)

The first two questions require some numeracy skills while the third question tests if the responder is familiar with the notion of stocks and mutual funds.

The key findings of these surveys are the following:

- Only few people can give a correct answer to all three questions. In the United States only 30% of respondents, with similar low percentage in other high-income countries like Germany, Netherlands, Japan;

- Out of three questions, the risk diversification concept is the least familiar for respondents; in the United States the answer “do not know” received 30 %, in Germany 32%, Netherlands 33%, Sweden and Switzerland 18% and 12% respectively.

A concern that such a large portion of population is financially illiterate urges government and non-government organizations to pay more attention towards existing problem and to find a way to promote financial education.

2.1.3 Existing studies on financial education

First, it is important to define Financial Education. The Organization for Economic Cooperation and Development (OECD, 2005) defines it as:

> “The process by which financial consumers/investors improve their understanding of financial products and concepts and, through information, instruction, and/or objective advice, develop the skills and confidence to become more aware of financial risks and opportunities to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being.”

Building upon this definition, the aim of financial education is to provide a consumer with a toolkit that would help to increase awareness of financial products and services and influence consumer’s financial behavior. These financial education programs focus on different target groups, such as youth, children, young adults, elderly, employees, low-income families, minorities, and financial counseling clients.

The most common topics covered by financial education programs are budgeting and cash flow management, credit/debt management, savings and investment, consumer protection, homeownership, retirement planning, risk management, and insurance with its biggest focus depending on the selected target group and the ultimate goal.

Most programs are delivered through workshops/seminars, multi-session courses, printed materials, one-on-one counseling sessions, Internet delivery, and distance education (Lyons et al., 2006). In most developed countries policymakers are trying to incorporate financial education initiatives into school curriculum.

providers think of something different? Should financial education be episodic or integrated through the lifecycle (Hastings et al., 2013)

2.1.4 Youth financial education

As was stressed in the previous sections, the primary goal of financial education is to educate consumers about a wide range of financial products and help them in making sound financial decisions. Many scholars adhere to the idea that there is a big opportunity in reaching this goal by focusing financial education on youth. Young people have more chances to establish positive financial behavior and create good habits if they are exposed to appropriate financial education programs and activities from their childhood.

Danes and Dunrud (2013) argue that "… life-long benefits of teaching children good money habits make it well worth the effort. Children who are not taught these lessons pay the consequences for a life-time". CFPB (2013) also states, "… young people have a greater need than ever before for resources that help improve their knowledge and capability" pointing out that even being unbanked in its majority, youth is exposed to all sort of financial mechanisms, such as prepaid debit cards, PayPal, and mobile payment methods. The problem is the majority of young people are not ready to cope with such a complex variety of options but a lot of them are willing to receive more information about finances.

A survey conducted by Sallie Mae (Student Loan Marketing organization) on credit card use among youth reveals that 84% of undergraduate students admit that they need more education on financial management topics, 64% would be glad to receive this information within high school program and 40% within college (Creditcards.com, 2009).

The need to educate children was acknowledged in many countries, especially in developed societies and in order to address this need, different approaches started to emerge. However the effectiveness of programs targeting youth is hard to evaluate.

There might be multiple reasons behind this. Some researchers call to note the impact of different socio-demographic factors such as gender, family background, ethnicity and motivation besides the program itself on the effectiveness of financial education. Danes, Huddleston-Cases, and Boyce, (1999) state that “family is the primary source for learning about finances and that non-formal financial education within a family starting with very young children sets a foundation for further financial education”.

According to a 2011 survey of high school seniors sponsored by Capital One 87% of respondents acknowledged that they consider their parents as a primary resource to seek financial information but only 22% reported to talk frequently to their parents about money management and 44% of respondents “sometimes” ask their parents questions about financial issues. The same survey reveals that 37% of high school seniors receive allowance and of those 54% talk “sometimes” to their parents about how to manage the money while 34% reported these conversations never take place in their family. (CapitalOne, 2011)

Another important factor besides the family context is the role of motivation itself. Early surveys conducted by different researchers didn’t include the questions about motivation, about how students feel about the programs and if they consider personal financial courses relevant to their lives. In 2006 Mandell and Klein (2006) conducted a survey including questions on motivation and they concluded that “low financial literacy scores among young adults, even after they have taken a course in personal finance, is related to lack of motivation to learn or retain these skills”. This finding is also accurate for adult educational financial programs where researchers observed that those adults who volunteered for the programs usually score better than those who attended mandated seminars or programs. For example seminars on retirement plans offered at work. Motivation is a powerful drive for any activity whether it has learning objectives or some personal goals, thus it poses a challenge for financial education providers, especially those whose target group is children.

Many different approaches have been elaborated by government and non-government organizations while new ways of delivering programs are emerging.

The current approaches are:

Teaching financial education at school: this approach includes integrated curricula where basic financial concepts are added to existing courses and separate curricula dedicated to teach financial concepts as a stand-alone class. The last one is targeted on the high school students and is designed to cover personal financial management matters, such as savings, investing, retirement planning, financial decisions making and goals. This approach is gaining popularity in Unites States of America where 46 states now include personal finances in their curriculum standards. European initiatives include so far a project on “Guidelines for Financial Education in School” with the aim to assist policymakers and interested stakeholders in designing and implementing efficient programs in schools (European Banking Federation, 2012).

Bank-at-school programs: this approach focuses on partnering with banks that give an opportunity for children to open a bank account/savings account at the school premises. Children learn about finances in the classroom that give them knowledge on their real bank accounts. This activity proves to be very engaging and efficient for participants and it is a unique opportunity for banks to target this segment of the market. This approach is very popular in United States, in European countries banks are also trying to get involved with schools in other ways, like giving lectures on finances, organizing exhibitions and events for youth, encouraging them to write theses on topics within the banking industry and so on.

Online teaching tools and resources: this approach includes online materials, online training modules, and websites. With multiple useful resources to seek for more detailed information, online and mobile games (also known as financial entertainment). The most known advocates of this approach are Doorways to Dreams (D2D), a nonprofit that creates financial games to improve financial engagement among kids and JumpStart, an educational media franchise for kids D2D and JumpStart also conduct multiple surveys on the effectiveness of their games and are known for partnering with banks, schools and other interested parties.

Comparing to other approaches, online teaching tools are easier to deliver to consumers and due the rise of technology and the place it occupies in our everyday life, online tools are becoming more and more widespread across many countries. Online tools are not just easier to create and deliver but also with the right design they can be interactive and engaging for both adults and children.

To sum up, the need to focus financial education on young adults has been acknowledged and actions have been taken across many countries. Even though there is still a debate on the effectiveness of different financial education programs, researchers agree that "one-fit-all" approach is the less effective and that multiple factors should be included into the evaluation process, such as family environment, appropriate design of the programs, delivery method, role of motivation, and engagement. The growing number of independent providers of financial education programs boosts the creation of new innovative approaches to solve the problem of financial illiteracy and thus making it more accessible, interesting and engaging for people around the world.

2.2 Banking sector

2.2.1 The place of banks in financial systems

Banks are a vital financial institution. Banks provide various services that contribute to the development and improvement of the economy. Banks channel resources between lenders and borrowers, facilitate trade, provide funds to companies and help them and the economy to grow. Banks also play an important role in sharing risk in the economy by diversifying fluctuations over time (Allen and Carletti, 2008). Besides the crucial role banks play in the economy, they play an indispensable role for households as well. Everyday payment transactions, credit provisions, savings and investment plans are among the most used services banks provide to households. World Bank's Global Findex database reports that in developed countries 89% of adults have a bank account compared to 49 % of adults in developing countries (IMF, 2012). But this percent is growing constantly due to the expansion of financial services and its advantages for an "average" household and removal of unnecessary physical and financial barriers that facilitates the process to open a bank account. Moreover new generations that grew up surrounded by technology are becoming active financial players in the market and thus challenging banks to come up with new alternative channels of delivering its products and services.

2.2.2 Consumers' and banks' perspective on online banking

Tremendous progress in the field of information technology has changed forever the way companies interact with customers. Financial and banking industries were also affected by this change. Furthermore growing fierce competition forced the banks to introduce new alternative channels to deliver its products to the customers. Hence, banks have adopted electronic banking services to provide information in a more convenient and cost-effective way.

The term E-banking is not commonly agreed among researchers because it embraces all technology initiatives that take place within the banking industry.

Basel Committee on Banking Supervision (2003) defines E-banking as “the provision of retail and small value banking products and services through electronic channels [internet and mobile phones] as well as a large value electronic payment and other wholesale banking services which are delivered electronically. Such products and services can include deposit taking, lending, account management, the provision of financial device, electronic bill payment, and the provision for other products and services such as electronic money.”

The use of electronic banking services is growing every day since the importance of such services has been proven for both banks and customers. From 2009 until 2014, growth was estimated to be approximately 4% per year as 66 million households enter the field (WWW Metrics, 2013).

Benefits of E-banking to banks include following aspects:

- Increased efficiency and profits at low cost
- Opportunity to reach out to more customers
- Competitive advantage over banks that don’t use E-banking
- E-banking website can be used as a promotional tool for bank’s products and services and its navigability can become the decisive factor when choosing a bank
- Due to E-banking, banks have immense cost savings with the reduction of brick and mortar establishments needed. This allows banks to focus on innovative marketing approaches
- Enhanced customer service that contributes to a positive brand image of the bank
-

Benefits of E-banking for customers:

- Quick access to their information from anywhere in the world
- Possibility to get access to personal accounts, pay bills, transfer funds, access to any kind of financial information at any point of time
- Online purchases
- Time saving in managing personal financial tasks

- Lower risk associated with carrying cash (Al-Smadi, 2012)

Despite multiple benefits of E-banking as of April 2012, global E-banking penetration accounts for only 28,7 % with considerably higher percentage in developed countries, for instance North America accounts for 45 % and the European Union on average has 49,5% with the highest penetration in Iceland with 91% and the lowest in Romania with only 4% (The Statistic Portal, 2012)

Since banks view E-banking as a new channel to attract and retain customers, all these reasons should be taken into consideration. Banks should increase customers' awareness of E-banking usefulness through educational materials and advertisement, especially targeting technology illiterate customers. At the same time banks should always improve and diversify their services trying to meet customers' needs, bearing in mind demographic differences such as age, occupation, country of origin and so on. Since the banking industry is one of the most influenced by technology. Technology facilitates providing customers with ever improving service, especially in the light of fierce competition. Among new alternative channels mobile banking and social media are attracting more and more attention, especially among young generations. Given that, banks might discover a new niche of unbanked customers to focus on.

2.2.3 The rational to bank youth

The researcher has reviewed the importance of financial education for both adults and children and the many channels to deliver these educational programs. In this part the researcher will focus on how to facilitate financial education through Banks and online Banking. As mentioned and cited in previous sections, to effectively educate, one needs to provide access to tools needed for achieving the desired result. Youth benefits have already been discussed so now this section will cover the benefits to banks for providing financial education programs.

By offering financial education banks can benefit in a number of ways. Due to the harsh competition in the banking industry, focusing on providing financial education programs opens new roads into previously unbanked population such as children and teenagers. Financial education programs with incentives, such as opening a savings account for children, engage banks in a long-term relationship supplemented by many benefits. The UN estimates that in 2010 there were 1.7 billion children in the world under the age of 15, a huge market to reach out to. Despite such a large youth market, most financial institutions do not consider children as potential customers. This is due to country specific legislation put in place to protect the youth, the risk factors associated with working with this segment, and the non-economic role children still play in the society. (CYFI, 2014)

However some banks are starting to realize that children are potential future investors, even though initially they have limited amount of savings, over the years they may invest more money into different financial products.

Children who have a savings account on their own are more likely to remain with their banks and invest in their accounts when they grow up. If banks set long-term goals for their customers, children have more time to establish savings habits and become educated financial players in the financial market that eventually brings profit to the banks. Aside from future generated profits, by offering savings accounts to children, banks are investing in long-term relationships with their customers. By grasping this segment of unbanked population, banks grow the customer base that will bring benefits in the future and acquire a strong competitive advantage.

In their study “Children as potential future investors” Friedline and Elliott (2013) they analyzed a sample of 1,003 adults ages 17 to 23 and concluded that young adults who had a savings account as a child are two times more likely to have a savings account in their adulthood. Another important finding of their study is that “young adults are two times more likely to own savings accounts, two times more likely to own credit cards and four times more likely to own stocks when they have savings accounts as children”.

Building upon this finding it is possible to say that financial institutions that provide financial education and savings accounts for children not only broaden their customer base but also address a social necessity. In conclusion, besides future generated profits banks enjoy other benefits from targeting children and youth as a new customer segment.

A social responsibility

Nowadays most financial institutions have a Corporate Social Responsibility (CSR) and the main goal of CRS is to utilize the company's resources with the aim to create positive social and ethical impact on the society. For many banks it means offering products and services of high quality, delivering excellent customer service, innovating in the delivery channels, lowering interest rates and maintaining long-term trustworthy relationship with their customers. Educating children and providing them with savings product offerings opens a new opportunity in fulfilling CSR. At the same time this socially beneficial experience creates a positive reputation of the bank that cares about the society and hence contributes to creation of a positive brand image.

Deliver profitability and return on investment

MasterCard analysis (2010) on Europe shows that the average annual profit per customer depends on the customer's age and the number of services the bank can offer. The segment of age 50-55, called "Empty Nesters" is considered as the most profitable. However, considering the compound effect of ownership of an account reveals that a 10-year-old account owner will accumulate higher profit over time (smaller revenues from earlier stages of the life plus higher revenues later in life) than a newly acquired "Empty Nester".

Another important factor to mention is the cost of acquisition per customer (COA). COA goes higher as the age goes up. Banks in order to grow their customer base invest a lot in acquisition campaigns and all other sort of activities in order to attract new customers. The same MasterCard analysis shows that COA for teenagers in considerably lower than for other segments, thus with the same COA budget a bank is able to acquire more customers that pays off in a long run.

Improving brand image

Innovative technology is becoming an indispensable part of our lives. The financial industry is also affected by new technology trends. By serving the new digital generation of children, banks are forced to adopt new approaches to deliver products and services as well as diversify these products in order to meet and exceed customers' needs. In return this creates a positive impact on the brand and improves awareness of the bank.

However by targeting this technology savvy generation financial institutions may run some risk. Since we live in a digital world with easy access to any information, reputation must always be upheld or any negative actions by a bank will be spread quickly across reviews and social media. Thus by engaging in relationship with youth banks should think carefully about implementation of their strategy and maintain transparent and honest relationship with their clients, otherwise unsatisfied customers powered by social media channels can damage the reputation and brand of the bank.

In summary the benefits to the banks prove the rational to invest in financial education for children, especially when these programs are supplemented with affordable savings accounts. Supporting children not only benefits banks in long term but also create a positive impact on the society right now.

As the reasoning behind financial education is clear, now banks are challenged to engage the young segment of their customer base and provide them with an interactive solution. One of the best approaches for this age group in other industries has been through gamification. Gamification while not a new concept is emerging in more and more marketing efforts. We will analyze how this approach not commonly used in the Banking sector may be a great channel to youth.

2.3 Gamification

2.3.1 Defining gamification

The term “gamification” was first introduced in 2000 but didn’t bring much attention until 2010. The term became a trending topic mentioned and discussed at various conferences, blog posts and books. In a wide sense gamification is understood as a way to support user engagement, enhance user activity, social interaction and improve overall user experience. The desired effect is achieved through activating intrinsic motivation and incorporating game design elements. Therefore many gamified applications have been created across various industries, such as education, health, marketing, business, social change, sports etc. One of the most famous examples of gamification is associated with well-known NikeFuel and location-based application FourSquare. There is a whole range of other applications that incorporate gamification concept such as Speed Camera Lottery hosted by Sweden’s National Society for Road Safety and Volkswagen, Codecademy, Language Quality Game launched by Microsoft etc. Companies like Badgeville and Bunchball build their entire service around gamifying services of traditional companies. According to Gartner, the world's leading information technology research and advisory company, by 2015, more than 50 percent of organizations that manage innovation processes will gamify those processes (Gartner Group, 2011). Besides an increasing number of startups and applications featuring gamification elements, the term is also reflected in an academic context. Finnish researchers Hamari, Koivisto and Sarsa (2014) in their paper “Does Gamification Work? – A Literature Review of Empirical Studies on Gamification.” explore a peer-reviewed empirical studies on gamification and one of their finding is that the number of published papers on gamification is growing. Their finding is reflected in Figure 3 and proves the suggestion that gamification is gaining a lot of interest among scholars.

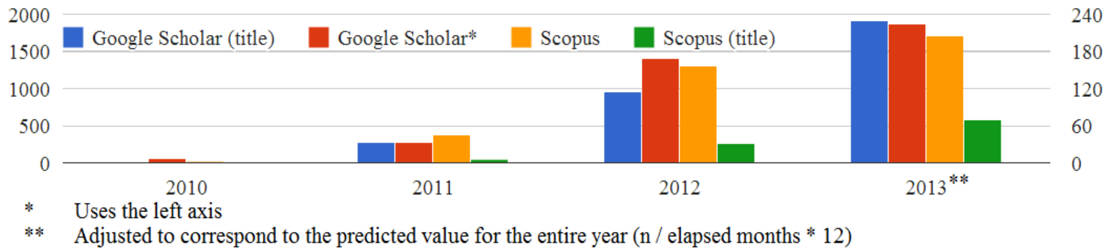


Figure 3 Search hits fot gamification (Hamari et al., 2014)

(The above graph shows the amount of internet searches using different search engines. This shows the recent surge in gamification related searches)

Despite a large number of academic papers on gamification, the definition still varies among scholars. In this thesis the researcher uses the definition of Deterding et al. (2011) who defines gamification as "the use of game design elements in non-game contexts". In their academic research "From game design elements to gamefulness: Defining gamification,"(2011) Deterding et al. broke down the definition into 4 smaller parts (game, elements, design, non-contexts) explaining the meaning of each part and thus giving a broader understanding of the concept "gamification". The researhcer will cover each part to give a better understanding of each term.

Game

First, Deterding et al. (2011) urges to distinguish the difference between "play" and "game", where "play" is perceived as a broader, wider category that contains but differs from "games".

According to Caillois's (1961) concept, paidia references playing as a free-form improvisational behavior and ludus describes gaming as rule-based playing concentrated on achieving goals. Following this concept, gamification is mostly focused on ludus with several industry critiques emphasizing that "gamified" applications lean more on game design elements with goal-oriented play. Therefore, gamification in its broader concept incorporates game elements pursuing various goals, from employee motivation to customer engagement.

Element

In this part Detering et al. (2011) contrasts gamification to "serious games" where “serious games” are full-fledged games with non-entertainment purpose and gamification just uses game elements.

“Serious games” aim to train or teach users or they are used when the problem cannot be solved by technology and human interaction is required. To name few examples of “serious games”: America’s Army that has as a goal to train and recruit soldiers, Artigo a game where two users compete against each other by putting tags on the images of famous paintings from the digital database of the Institute for Art History or IBM Innov8 2.0, a game that gives users better understanding on how effective Business Process Management benefits the entire business ecosystem.

By contrast, gamification just uses game elements with the primary goal to enact “gameful experience” and then the question rises “what is the set of these game elements”? According to Werbach and Hunter (2012) game-design elements consist of dynamics, mechanics and components that are all tied to each other. For instance dynamics represent the big picture aspects of the gamified system and are influenced by the use of mechanics and components. Examples are creating innovation culture within a company or enhance employee development. Mechanics generate the user engagement and stimulate user’s fun and curiosity. For example ranking can induce competitive dynamics that should satisfy social recognition. And components are a more specific form that mechanics or dynamics can take. It is impossible to use all the components or mechanics within one gamified module, therefore before applying the elements a developer should consider the big picture and figure out what goals this specific gamified module is aimed to achieve. It is not about just checking game elements but about creating a gameful experience with an overall value for users such as incentives to enjoy the service or product, motivate them to learn or to install healthy habits. Table 1 highlights the most important game-design elements.

Table 1 Game-design elements (adopted from Werbach and Hunter, 2012)

Game-design elements		
Dynamics	**Mechanics**	**Components**
Constraints	Challenges	Achievements
Emotions	Chance	Avatars
Narrative	Competition	Badges
Progression	Cooperation	Boss Fight (hard challenges)
Relationships	Feedback	Collections
	Resource	Content unlocking
	Rewards	Leaderboards
	Transactions	Levels
	Turns	Points
	Win States	Win States
		Social Graphs
		Teams
		Virtual Goods

Design

Since "gamified" applications are not the only instances where game elements have been repurposed for the conceptual clarity Deterding et al. (2011) uses "design" instead of game-based technologies when defining gamification. After analyzing game design elements Deterding et al. (2011) came to the conclusion that these game-design elements can be identified at the different abstraction levels, therefore they have created a "level model" that distinguish these levels from concrete to abstract. Table 2 summarizes this finding.

Table 2 Levels of game design elements

Level	Description	Example
Game interface design patterns	Common, successful interaction design components and design solutions for a known problem in a context, including prototypical implementations	Badge, leaderboard, level

Game design patterns and mechanics	Commonly reoccurring parts of the design of a game that concern gameplay	Time constraint, limited resources, turns
Game design principles and heuristics	Evaluative guidelines to approach a design problem or analyze a given design solution	Enduring play, clear goals, variety of game styles
Game models	Conceptual models of the components of games or game experience	Challenge, fantasy, curiosity; game design atoms;
Game design methods	Game design-specific practices and processes	Play testing, play centric design, value conscious game design

Non-gaming context

Game-designed elements have been always used for entertainment purposes. However in case of gamification these elements aim towards joy of usage and enhanced user experience in any context. Deterding et al. (2011) suggest not limiting the non-game context to any specific usage since there is no clear advantage in associating the term with some specific context.

2.3.2 Principles for gamifying applications

According to a Gartner report on gamification, by 2015, 40 % of Global 1000 organizations will use gamification as the primary mechanism to transform business operations and 70% of business transformation efforts will fail due to lack of engagement and poor design (Gartner Group, 2011). The reason for such a high percentage of failure is that many companies perceive gamification as a meaningless process of appointing points, badges and leaderboards on everything. In the short run it may raise interest among users, but in the long run such tactics appear to be ineffective.

FourSquare location-based application that is perceived as a blue print for gamification can be used as an example. After the application launched users highly enjoyed this app, but over time the hype disappeared as more and more users failed to see the value of the application besides meaningless points and badges. On another hand, application like Codecademy, a gamified platform to teach users basics of coding, even without points or badges still creates meaningful content and delivers value to the users.

In his presentation at Google Tech Talk “Meaningful Play: getting gamification right” Deterding (2011) highlights the importance of three principles required for a successful gamified application. These principles are relatedness, competence and autonomy.

Relatedness

As in the example with FourSquare and Codecademy, the most important is to identify user’s personal goals and to build an application around their interest and passions that already exist in their everyday life. In this case, whatever activity performed would bring meaning and value.

Moreover, in order to activate mechanics like status, competition, reputation or recognition, it is vital to connect the user to a meaningful community that shares the same interests. Otherwise badges, points, leaderboard, the most common components of game design elements, wouldn’t matter much to the user. A common method to reach more relatedness is to create a meaningful story around the activity that would connect users within the same community of shared interest.

Competence

Everyone likes the feeling of being good at something, at mastering new skills and progressing through a game or any other task. Thus interesting challenges should be incorporated into user experience. These challenges should be represented by short-term missions and long-term goals to keep users interested and engaged. At the same time the challenges should constantly progress in difficulty and should be represented in a clear visual way accompanied by immediate feedback. What makes it more challenging for a developer is to vary the difficulty of the tasks so that users don't perceive them as too easy or too difficult

It correlates with one of the core psychological theory around why games are fun. “Flow theory” of Csikszentmihalyi (2008) states “As long as the difficulty of the challenge is within the flow, people are neither over challenged nor under challenged”, meaning that under challenged activities make users bored and over challenged make them frustrated, while that middle state of flow matches users' ability and creates a feeling of achievement while mastering the task.

Autonomy

The excitement of the experience comes from the user's sense of autonomy, whether that is a decision to purchase something, to re-tweet a post or to take any actions (Werbach and Hunter, 2012).

Autonomy is an innate need to be in charge of one's life and to be able to do what is in harmony with one's values. Therefore all the undertaken activities are voluntary and fueled by intrinsic motivation. Intrinsic motivation refers to the motivation that comes from within and the pleasure that one gets from accomplishing the task. Therefore if a user feels that he/she loses autonomy or he/she is being controlled and manipulated by the “if…then” system of rewards, it undermines the motivation to pursuit the task and creates unpleasant user experience.

However there are ways to enhance autonomy by providing informational feedback as well as unexpected rewards. Informational feedback provides reinforcement to the user about how they are doing and also informs what should be improved in order to achieve the goal. Unexpected rewards will maintain the interest throughout the activity and will increase intrinsic motivation.

In summary, gamification is a set of various components usually adapted from games, meaningful content and a social layer. Gamification projects aim at altering users' behavior by appealing to their personal interest or passion.

Gamification applications are also used in a non-game context such as business, marketing, sports, organizational environment or education.

2.3.3 Gamification in e-banking

Since the first part of Research Findings part describes an educational gamified module delivered by banks, the researcher decided to look into other cases where banks implement gamification strategy and what are the results.

The fast development in the field of information technology prompted the banks to transform the traditional way they have been conducting business. The constant attempt to match clients' desires and to increase customer loyalty urged banks to incorporate e-banking, the use of which is constantly growing.

In light of fierce competition and growing cost of customer acquisition banks are challenged to develop new approaches on how to engage clients and how to make the most of their behavior. Some banks have started seeing gamification as the future of online banking because it can help banks to transform traditional dull activities into more interesting, exciting and enjoyable ones. On top of that, by introducing gamification, customers are faced with various challenges and by completing them they reveal more of their preferences, interests and needs. By analyzing this data, banks have a better chance to meet consumers' needs and to be more accurate in approaching specific target groups with tailored services and products. There is demographic data to back up this presumption.

According to “2013 State of Online Game Report” (Spil Games, 2013) 1.2 billion people play games with 700 million of those online. Around 45% of gamers are of ages 15-44, a promising target group for banks. Moreover the Figure 4 shows that women occupy a considerable share in the gaming industry.

Therefore more and more banks are considering incorporating gamification concept into online banking in order to differentiate themselves in the market.

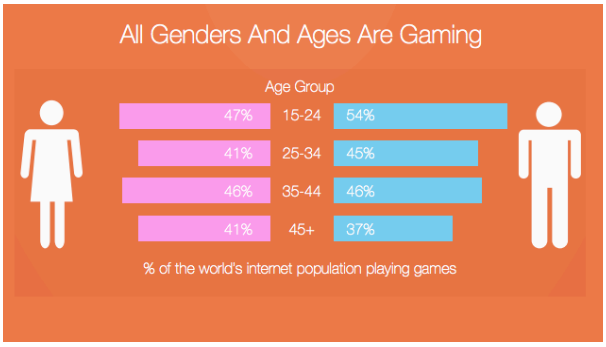


Figure 4 % of the world's internet population playing games (Spil Games, 2013)

The research "How gamification can influence the web design and the customer to use the e-banking systems" by Rodrigues et al. (2014) backs up the assumption that banks would highly benefit from using gamification and answer the question of whether gamification characteristics influence the behavior of customers who use e-banking systems.

The research was conducted by analyzing 180 publications and 210 variables that could possibly have an influence on the use of certain technology. In addition, a survey was conducted with a sample group of 219 e-banking customers. Based on this literature the researchers developed a theoretical model that represent the influence of gamification of the following aspects: gamification websites, website ease of use, design of the website, web page characteristics, website information and website intention to use. Figure 5 presents the result of mentioned research.

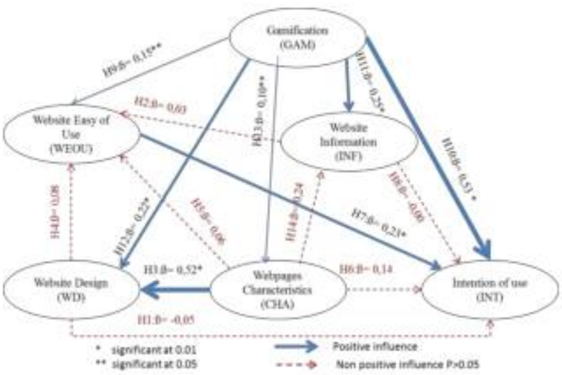


Figure 5 Conceptiual model (Rodrigues et al., 2014)

The findings suggest that implementing gamification had a significant influence on the intention to use the website with medium use on the website design and information. Also the results reveal that gamified characteristics help customers to navigate websites and better absorb information.

Overall researchers concluded that using gamification as a part of the e-banking strategy enhance customers' behavior and encourages them to spend more time on the website which leads to increased activity within the bank. Moreover, based on the experience and results of this study, Rodrigues et al. (2014) suggest that there is no need to conduct further research in the field of importance of gamification in e-banking, since their study already contributes solid findings in this specific area.

2.3.4 Gamification in education

Another large field where gamification can be applied is in the educational environment. Considering the fact that games play a vital role in our day-to-day life, the approach to use game elements in the learning process has been gaining popularity in recent decades. The most common reasons for low performance among students are boredom and lack of engagement; but advocates of the use of gamification suggest that gamifying the learning process encourages specific students' behavior and raises motivation and engagement. Since the subject of gamification of education is relatively new, there is presently little work done in this field. However several researches are worth mentioning.

Muntean (2011) based his research on the Fogg's Behavioral Model that consists of three main elements: motivation, ability and trigger. The Model suggests that motivation (willingness to take an action) and ability (proficiency in a particular area) are not enough to determine specific behavior. It requires a trigger or in other words "call to action". Therefore using this Behavioral Model Muntean (2011) states that mechanics used in gamification can trigger and motivate desired behavior among students.

Also he recommends a set of gamified elements by answering his research question "How to gamify an e-learning application" such as cascading information principle by dividing all the content into smaller parts followed by exercises and evaluation after each part; constant feedback indicate each user's progression; make the application social; use of bonuses, badges, and leaderboards are among the top elements used as well.

More extensive research is presented by Simões et al. (2013) who developed a gamification framework for a K-6 learning platform. The aim of the research was to "assist educators and schools with a set of powerful and engaging educational tools to improve students' motivation and learning outcomes". The authors also described a set of game mechanics and dynamics and explained how each of them can be integrated into the framework and how its use can benefit students, teachers and users. However an empirical study that could prove this theory hasn't yet been conducted.

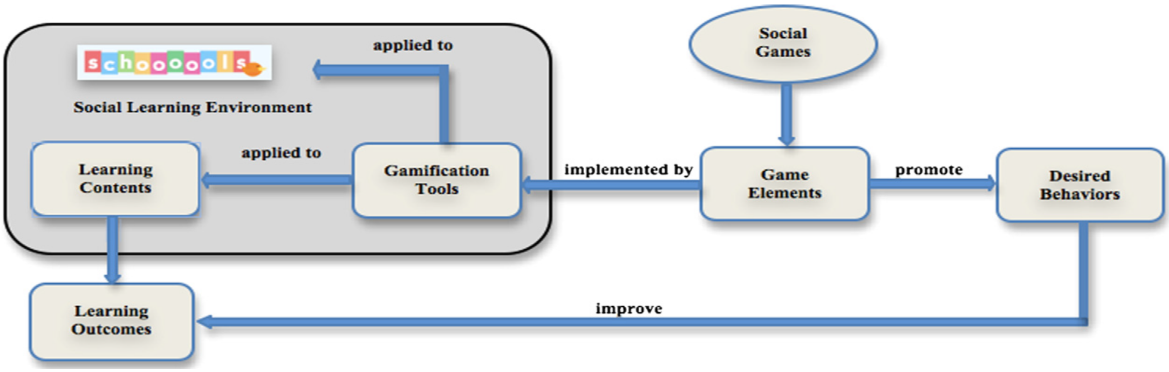


Figure 6 social gamification frameworks: context of use (Simoes et al, 2013)

The last study is the empirical research "Game mechanic based e-learning" conducted by Gåsland (2011). In her research she conducts an experiment by creating an E-learning platform featured with game mechanics and having as a goal "to create a more rewarding learning experience around the existing course content". The results are obtained after testing the platform in the university class in a real life education setting. 44 participants have been surveyed on the topics such as usability, usefulness, motivation and fun. The findings suggested that the platform was somewhat motivating and helpful to the audience meeting the initial goal.

The provided literature overview encourages further investigation in the field of gamification of education.

In the second part of the thesis the researcher will present a gamified financial education module that has children as its primary target group

3 RESEARCH METHODOLOGY

3.1 Introduction

This section will explain the chosen research approach, research design and the process of data collection as well as reliability and limitations of the research. The aim of this research is to answer the fore-mentioned research questions in section 1.3. :

4. How important is financial literacy for both adults and children?
5. What is the public opinion regarding the use of gamification in education?
6. How do banks benefit from promoting gamified financial programs for children?

3.2 Approach

This thesis uses a deduction approach or testing theory to its research. This involves the development of a theory that is subjected to a rigorous test (Saunders et al., 2009). One of the important characteristics of a deductive approach is the attempt to explain casual relationships between variables and to test them through hypothesis. Once hypothesis are established, it is usually tested through the collection of quantitative data (qualitative data also can be used).

In this study the theories presented in the literature review explain the current situation of financial literacy among adults and children, current approaches to enhance motivation to improve financial knowledge, the role of banks in the field of financial education and the possible benefits from financial education for both banks and children. These theories have been collected using documentary secondary data such as books and research papers and multiple-source secondary data such as government publications, statistics, and reports. To test the hypothesis the researcher gathered quantitative data as well as qualitative data since the objectives of the research are hard to meet using only one data collection method.

3.3 Research design and data collection

Since it is hard to answer these research questions by using only one method, a mixed-method research model has been adopted for this thesis. Mixed-method approach uses quantitative and qualitative data collection techniques and the researcher analyses them either at the same time or one after another but does not combine them; quantitative data is still analyzed quantitatively and qualitative data qualitatively (Saunders et al., 2009).

First, qualitative primary data was collected through semi-structured one to one interviews. In semi-structured interviews the researcher prepares questions and themes beforehand, but he or she still has the freedom to omit or add some questions depending on the flow of the interview (Saunders et al., 2009).

It is worth noting that the researcher interviewed different target audiences in order to collect diverse and non-biased data on the topic.

The first interview was conducted with a professional in the field of gamification. He provided detailed information about a gamified module designed for a specific bank that targets children. The first interview was conducted face-to-face and follow up questions were asked and answered via Skype due to distance and availability of the interviewee. The goal of this interview was to get deep insight into the details of the gamified module that he designed for a specific bank. Another goal was to identify reasons why the bank decided to get involved in financial education programs for children and what benefits this bank expects to obtain as a result of this gamified module. Using this approach the researcher gained the information needed to provide a real life example of gamification in education that is backed up by the theory presented in the Literature Review section 2.3. of the thesis.

Another set of face-to-face interviews was conducted with 7 adults who have children in the age range of 7-12 years old. These interviews pursued three purposes: firstly, to gather interviewees' opinions on the importance of financial education for children; secondly, to find out what the interviewees think about using gamified modules for the purpose of motivating children to learn about money and third, to find out if providing financial education for children enhances the bank's image and reputation.

Additionally, quantitative primary data has been collected with 2 self-administered internet-mediated questionnaires (see Appendix 2 and 3). Two questionnaires were designed in order to collect data from two different target groups: adults with children (Group A) and adults without children (Group B). The questionnaires are similar, but the questionnaire for Group A is more extensive as it comprises three additional questions that only adults with children can answer. The purpose of multiple questionnaires was to compare the obtained results and see if having children affects respondents' attitude towards 1) banks that provide financial education for children; 2) using gamification in education; 3) importance of financial education both for adults and children in general.

The decision to distribute questionnaires in addition to the interviews was made in order to gain result from a bigger and more diverse population sample that would allow generalized conclusions that are accurate.

The questionnaire was designed to answer the stated research questions. Pilot testing was conducted to make sure that respondents understood all the questions and all the included terms were clearly defined. After pilot testing was completed, changes were applied based on the pilot testing groups' observations as well as remarks of the teacher supervisor. The questionnaire was distributed through emails and social-media channels. The questionnaire was kept active online for a period of 1 week. As a result the total number of respondents is 88, 43 for Group A and 45 for Group B.

3.4 Research reliability and limitations

Reliability refers to the extent to which data collection techniques or analysis procedures yield consistent findings. (Easterby-Smith et al., 2008)

The reliability of this research is rather high because qualified academic literature was used for the theoretical part and for the practical part the researcher has used multiple techniques from both qualitative and quantitative methods ensuring a broader scope of gathered information.

With the objective to ensure reliability of interviews, the questions have been provided to interviewees a day before the interview. Therefore interviewees had enough time to familiarize themselves with the topic and were able to provide accurate information.

Sending interview questions was especially important concerning the interview with a professional from the gamification field since very specific information was asked and the interviewee wouldn't be able to answer to all the questions without extra time for preparation. In addition to the main interview, several follow up questions were sent to the interviewee while writing the thesis and an additional interview was held via Skype. By doing this the researcher made sure that she has all the necessary data on the particular gamified module that will be described more in details in Research Findings chapter 4.1.2. With the objective to ensure reliability of questionnaires, the questionnaires have been pilot tested and needed changes have been made.

However every research has limitations. In this case, the amount of interviews and questionnaires could affect the reliability. Even though interviewing 7 adults with children provided more profound information on the covered topics than data collected from the questionnaires, it is still hard to conclude if these parents will take action or not on what they stated. Yet the obtained results allow the researcher to make some generalization about people's opinions on the importance of financial literacy among children, the use of gamified modules to engage children to learn about money and the potential benefits to the bank as a result of providing financial education to the youth segment.

4 RESEARCH FINDINGS

This section of the thesis presents and analyzes data collected through interviews and questionnaires. Since the researcher presents data from bank's perspective and customer's perspective, the Research Findings section will be divided into three parts.

The first part will present in details the gamified module developed for ING bank as well as the bank´s reasoning behind the decision to invest in the project; the second and third parts will present customer's points of view on financial education for both adults and children, their thoughts and opinions on how to motivate children to learn about money management and how customers view banks that promote financial education for children.

Research findings are supported by the theory presented in Literature Review Chapters 2.1.,2.2 and 2.3.

4.1 Part I, "Planet Orange", a gamified financial education solution

4.1.1 Background of the interviewee

The interviewee's name is Chris Wallace and he is a senior art director and consultant for Trellist Marketing and Technology located in DE, USA. The company assists mid to large sized financial and banking sector clients in customer acquisition and retention, marketing of new offers (digital and print), as well as data mining and analytical reviews of different campaigns.

Chris has been in his position for six years and his first gamification project was in 2011. At the time the interview took place, Chris was involved in five gamification projects.

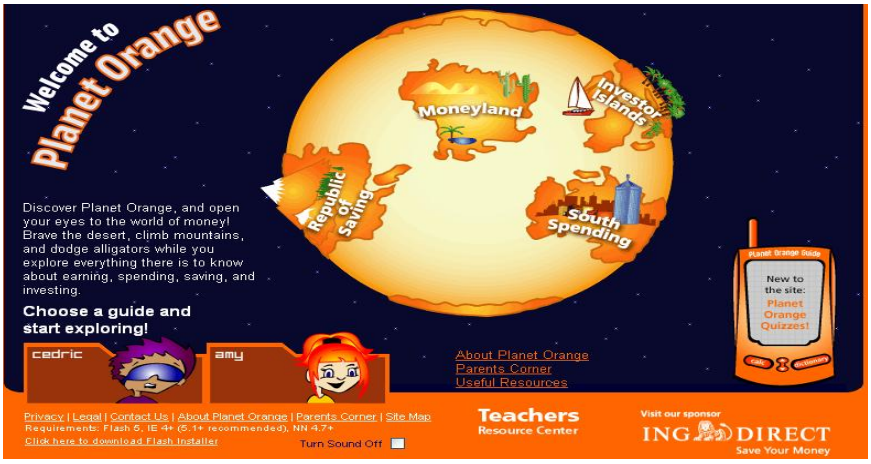
4.1.2 Gamified solution "Planet Orange"

The "Planet Orange" project was developed for the American branch of ING bank. The goal was to increase the number of ING savings bank accounts among the youth audience (8-14 years old). The long-term goal of “Planet Orange” was to increase invested capital in ING bank. To achieve this goal the project team was tasked to create a lasting and educational experience that the customers will remember and hold onto to retain their checking/savings accounts into adult age and then utilize ING’s other services before competitors’. If ING can retain these customers into adult hood, when these youth are now earning salaries, it will have a large positive effect on the level of capital in ING bank.

The goal of the “game” is to teach kids to save money and invest in the future, this is free education to the kids that will entice their parents into opening ING accounts (plus at this age in the USA children must have parental permission to open a bank account). The secondary goal was to create a positive perception of the bank among family members and friends and to encourage them to join ING as well.

“Planet Orange” has an online banking interface combined with a flash game that requires real life actions to move forward in the game. While playing the game, a child unlocks content on various financial aspects and at the end of each level he/she must correctly answer the quiz (at least 70 %) in order to proceed to the next level. If the quiz is failed, a child has to replay the levels that educate them on the information for that quiz. This procedure forces the learning to occur and through repetition to retain the knowledge while playing a game. Besides quizzes, in order to move forward in the game a child must create a savings account and to make initial deposit, transfers and even withdraws. These tasks’ goals are to educate children on how to use a banking account in general as well as to familiarize them with the specifics of ING bank.

The following screenshots provide some visual aspects of “Planet orange”.



Screenshot 1 Planet Orange

Screenshot 2 Planet Orange

The screenshots show that once a user is logged in, he/she can choose an avatar that will help him/her throughout the game. There are different continents on “Planet Orange” that serve as different levels, and there are badges/awards, missions and upgrades for different achievements in the game. There is also virtual money, which is similar to points in most games. All of these elements work with each other to create the gaming experience.

To better understand the purpose of each element here is more elaborated description of each element used in the “game”:

Badges – are achieved for all sorts of things done throughout the game. For example finishing a continent (level) or saving more than 10,000 Moneys. These badges serve to unlock other aspects of the game and also serve as a “collect them all” aspect of the game, which is the real way to beat the game – receive all the badges.

Money - is gained for almost everything you do and is slowly accrued throughout the game and used to purchase upgrades.

Upgrades - are purchased with money but not all are immediately available, for example you need to have at least two badges to be able to buy a new space suit, once you have these badges you can then buy the upgrade with X amount of money.

Missions – missions are generally received as soon as you complete a prior mission, however based on the continents available, and the number of badges you have you can receive extra missions.

Continents – are groups of levels that have a different design and background to keep the users interest.

While playing users are engaged in the following activities: problem solving, role playing, exploring new continents, discovering new content and collecting badges. As it was mentioned before answering quizzes plays an important part in succeeding in the game. While a user can pass a quiz with 70% he won’t receive as much Money (points) as he would receive with 100% of correct answers. This means satisfactory results makes it harder to proceed in the game since the user cannot purchase improvements to the spaceship and character straight away. This serves as a way to motivate children to answer correctly the quizzes hence to motivate them to learn but at the same time it does not completely stop the user if they don’t learn everything.

The game can be played on all digital devices, with or without Internet. However bonuses and certain parts of the game do not function if played without Internet. This ensures that users use Internet from time to time so that analytic team has an access to users' data. Like most games the goal is to keep interest as long as possible. To do this there are some things in the game that are related to the device calendar. For example a user has to wait a day before he receives more "virtual interest" so that he can afford what he needs to continue in the game. The game is also capable of online updates so expansions are possible.

There is also an analytics system attached to the game that logs everything the users do. The analytical team has access to the data when the player goes online. Also since a child needs to open a bank account (with parent's permission) to play the game, Trellist has very detailed information on the customers before gameplay to assist in their analytics gathering. The analytics system allows the analysts to know many things, such as the amount of interest in each part of the game by each age group. This information is all logged and helps them to create updates to increase user's interest and keep them from "leaving" the game before completion.

Furthermore, it is possible to track the deposits into the new accounts created as a result of the game. Seeing the increases or steady investments into their accounts is a way to see the results of the project. The team is also able to track account opening by parents of children who play this game, since a secondary goal is to influence the whole family and then have parents/family/friends also join the bank.

Chris's professional opinion on the project is very positive, even though he admits that the long-term goal of education and association with bank is hard to track in the short term. However he adds that by insuring customers have learned all the desired items to win the game and making the game attractive/interesting enough for users, he and his team assume the best possible result in the gamification project.

As it was mentioned in the Literature Review section, gamification as a concept is relatively new, especially in the banking field. However more and more banks have started to incorporate various gamification projects into their business activity. Also more and more banks recognize the benefits of providing banking services to youth. However the amount of banks that provide financial education to children is small. The “Planet Orange” project for ING bank is a great example of combining gamification with financial education for children in an interactive and engaging way to motivate children to learn about money management. The researcher didn’t plan on reviewing competitors of ING bank; however a quick review of the American market shows that there are few banks that provide some sort of financial education material for children and teenagers. However these other banks are not direct competitors since the information is delivered through articles and/or videos.

Some related competitors:

TD bank Wow!Zone, an interactive website that provide educational material for kids, teens, parents and educators. The site has few games for children but they are rather boring and limited.

Federal Reserve Bank of Richmond, has a whole section on education that targets students, teachers and bankers. The information is provided via articles.

Bank of America and the Khan Academy with their project BetterMoneyHabits .The site features’ videos on various financial topics that are more suitable for high school students and graduates.

Visa launched the site Financial Literacy for everyone, with various free games, videos and articles on financial topics.

Since the researcher studies in Finland and the majority of people who took part in the questionnaire reside in Finland, the researcher decided to review what financial education programs Finnish banks offer to their customers. The results show that none of the banks offer a gamified solution that covers financial topics focusing on children as a main target group. The researcher has checked three main banks, OP-Pohjola Group, Nordea bank and Danske bank and has the following summary of their activities:

OP-Pohjola Group, holds local events for local and elderly citizens and publishes customer magazines where different banking matters are addressed.

Nordea bank engages in corporate volunteering projects by visiting schools throughout Nordic countries.

Danske bank, that acquired Sampo bank in 2007, has a wide variety of financial education material, games included, for children and teenagers. Unfortunately the games are only in Danish and Norwegian; therefore they are not applicable for Finnish market. Their Finnish branch doesn't yet offer any financial education material.

Collecting information on smaller banks such as Säästöpankki, Handelsbanken, LähiTapiola, and POP Bank Group didn't reveal any positive results.

This quick overview suggests that providing financial education in an interactive way, especially for children, is a new strategy that banks are only starting to employ in order to acquire more customers. Since it is relatively new, competition is still weak at the moment, but is growing consistently.

The theory obtained from the secondary data suggests tremendous benefits that the banks may enjoy by investing in similar projects. A goal of the second part of the research findings is to investigate customer's point of view on the use of gamification in education, the benefits of opening savings accounts for children and what are the most important characteristics when opening one.

4.2 Part II, Data analysis gathered through the interviews

4.2.1 Introduction

Since the first part of analysis focused on the "Planet Orange" gamification module and the goals the banks have for this project, the second part focuses on the customers' point of view of financial literacy for children, the perception of games with financial content and the attitude towards banks that provide such games.

The researcher held 7 interviews and received 88 responses, 43 from adults who have children (Group A) and 45 from adults who do not have children (Group B).

Using the qualitative method allowed more profound and accurate information on the discussed topics while questionnaires gathered a more general opinion of the population.

4.2.2 Background of interviewees

The researcher has conducted 7 one-on-one interviews, 4 of which were face-to-face and 3 via Skype due to their geographical location.

Table 3 **Interviewees' background**

Interviewee number 1 is a female, 35 years old, married, has a business background and works as a project manager in a mid-sized marketing company, has two children (son and daughter), 8 and 5 years old. She resides in the USA.
Interviewee number 2 is a female, married, 30 years old, has a business background, works in a logistic company and has a son of 6 years old. She resides in Finland.
Interviewee number 4 is a female, 29 years old, married, works as a nurse and has a daughter of 5 years old. She resides in Finland.
Interviewee number 5 is a female, 38 years old, married, works as a nurse and has 2 sons, 12 and 10 years old. She resides in Finland.
Interviewee number 6 is a female, 28 years old, married, has an educational background in the arts, and is currently unemployed. Has a daughter of 5 years old. She resides in Finland.
Interviewee number 7 is a male, married, 32 years old, has an associates degree and works as a construction worker. Has a daughter of 7 years old. He resides in the USA.

4.2.3 Interviewees' reflections regarding financial literacy for both adults and children

The questionnaire for the interview follows the same structure as the surveys however during interviews the researcher had an opportunity to ask extra questions and to obtain more honest and accurate data.

The first set of questions covered the following topics:

- Financial literacy in general
- How important it is to be financially literate
- How do the interviewees assess their financial knowledge
- How does it help them in life
- Where they receive financial education

Another set of questions was focused on the interviewees' opinion on financial education for children. The researcher attempted to find out how interviewees felt about children's capabilities of understanding basics of money management in their young age.

Additional questions that were discussed include:

- How to talk to children about money and money management in way children understand the material and at the same time don't become bored?
- What interviewees do to teach their children about money and how often
- Do they agree that being financially literate will benefit their children in future and why?

All the interviewees agreed that there is an importance of financial literacy. All of them think that due to the wide range of financial products and services available nowadays in the financial market, it is almost impossible to make sound financial decisions without possessing any knowledge on the topics.

However, the level of importance of financial literacy was slightly different among the interviewees depending on their country of residence.

Further conversation revealed that for those who lived in the USA, being financial literate was of a bigger priority than for those who lived in Finland. The researcher deducted this based on the socioeconomic systems of their respective countries. While Finnish interviewees said that they don’t worry about paying off school debt or taking care of personal retirement plans because it is all taken care by the government, American interviewees said that possessing financial knowledge is crucial in order “to be smart with money” and be able to pay off the debts such as school debt, mortgage, credit cards and start saving money for the retirement.

In the next set of questions it was discussed how each interviewee assess his/her financial knowledge. The results show those with a business background feel very confident in comparison to the interviewees whose professional expertise is in other areas. Interviewees without financial/business background say they know the basics of finances such as the role of inflation and interest rates, however they admit that they could learn more; especially about investments and the way different world economies interact between each other.

Important information that the researcher managed to obtain via interviews was where and how the interviewees receive financial education themselves. Interviewees 1,2,3,5 admitted they learned the basics of money management from within their families and they consider that experience to be invaluable for their further life decisions. Interviewees 1 and 2 went to business schools where finances were a part of their curriculum. All interviewees recall that they had some sort of financial classes at high school but most of the interviewees found it difficult to assess its significance.

Furthermore, an interesting observation was what interviewees do in order to improve their financial knowledge. Only interviewees 1, 2 and 3 read financial news on the regular basis while interviewees 4 and 6 never read financial news and they claim a lack of time, lack of habit and difficulty to understand the information presented in those articles as the reasons for not reading financial news.

The next topic in the interviews related to children. Again all the interviewees were unanimous on the importance of financial education for children. All parents admitted that they want their children to be financially educated and successful in their lives. The interviewees also agreed that it is necessary to teach children about money from the early childhood because it will help them to carry on those lessons into their adulthood. However, despite the fact that all interviewees acknowledge the importance of teaching their children about basics of economics, only a few of them feel that they do enough.

All interviewees talk to their children at least once a week about the value of money in the topics of: where money comes from, why to compare prices, and how to save etc. Interviewees 1, 3, 5 and 7 have savings accounts for their children while the others are considering opening one in the future. Moreover, interviewees 1, 3, 5 and 7 have monthly allowances for their children (interviewees 1 and 3 give allowance only to their oldest child) while others think that their children are too young to have their own money. However, most consider giving monthly allowance in the future. The interviewees 1, 3, 5, and 7 believe that giving spare money to their children will help to teach them how to save and spend money wisely and will encourage them to make their own financial decisions.

Further conversation revealed that the interviewees are worried about what to do next and how to proceed to the next level of more profound financial topics. The interviewees 2, 3, 4 and 6 said that they were not sure if they could present the information to their children in an understandable and engaging way. Another concern for interviewees 4, 6, and 7 is their personal lack of profound financial knowledge.

All interviewees wished that their children had opportunities to learn about finances from different sources, for example at school or at events organized by third parties.

4.2.4 Parents' perception of banks that provide financial education for children

This part of the interview intended to investigate the relationship of the interviewees with banks and if the interviewees see banks as a provider of financial education.

All of the interviewees have personal checking accounts and the interviewees 1, 3, 5 and 7 have savings accounts for their children. The interviewees see banks as an important financial advisor and a place where they would go to seek financial advice.

The researcher observed different attitudes towards the process of choosing a bank. This observation is based on Finnish interviewees' comments that "there are rather too few banks to choose from and they are all more or less the same". In comparison with the interviewees living in the USA who admitted that they have conducted rigorous research before opening a bank account because "there are so many options" to consider.

All the interviewees see banks as a potential provider of financial education and as a source of financial information. Interviewees 1, 2, 3, and 7 and say that their bank has some useful information for adults on the bank's website. Others admitted that they haven't paid much attention to their bank's website. When asked how the interviewees would perceive a bank that provides financial education for children all of them agreed that it would create a positive image of the bank. The researcher briefly described the gamified module "Planet Orange" and asked how the interviewees would react on this type of offer from a bank. In general, the overall opinion of the interviewees was positive.

However in addition to gamified solutions the interviewees 1, 3, 5 and 7 who already have savings accounts for their children said it was very important to know all the details of opening a savings account, such as minimum deposit, service fee, transfer fees, and rate of return before signing up just because of a game. Also an important criterion was how big and trustworthy different banks are. Given that the rates/fees are better or the same than in the existing bank, the interviewees reported that they would consider switching the bank if one had gamified education applications. For those who do not have savings accounts for their children it was still important to know all the details about the bank and the conditions of opening a savings account. This group would consider opening a savings account for their children to encourage him/her to learn about money while playing a game.

4.2.5 Parents' perception of gamified solution

In the last part of the interview the researcher discussed the interviewees' opinions on games in general and gamification as an interactive approach to motivate children to learn. The term gamification was explained using an example of Nike+ and "Planet Orange" in order to avoid confusion. The interviewees responded well to the explanation and didn't seem confused.

The first set of questions was about children playing games in general and if parents try to influence their choice of games.

All the interviewees admitted that their children play all sort of games such as video, mobile and console games. Also the interviewees revealed that they try to restrict the amount of time their children spend playing games by allowing them to play a maximum of a couple of hours per day.

The interviewees 1, 4, 5 and 6 highly encourage their children to play educational games, mainly games on arithmetic and foreign language. They believe that learning in a gamified way helps their children to absorb the information and ensure a long lasting effect. Also the interviewees 1, 4, 5, and 6 admitted that it is easier to make their children learn via a game than via basic routine exercises. Therefore, the interviewees' opinion on gamified solution for financial education is very positive; moreover the interviewees admit that they would encourage their children to play this kind of game.

In conclusion, all the interviewees perceive financial literacy as an important aspect of their lives as well as the lives of their children. Even though most interviewees already try to teach their children about money at home, none of them would reject different approaches to motivate and engage their children to learn about the basics of finances.

The fact that all the interviewees' children already play various games helps the parents understand how involved games can be and would rather their children's' time be spent playing games that can better their futures.

While a burden to some parents to open an account for their children, the added value of a gamified educational system for their children makes it worth it. Additionally the perception of the bank is increased allowing the bank to compete in ways other than price, fees, and interest rates. Moreover 4 out of 7 interviewees already opened savings account for their children and the others plan to in the future regardless of the availability of the educational game.

Therefore, the researcher's conclusion is that the gamified application could be a great business opportunity for banks to build larger customer bases as well as for parents and children to acquire financial knowledge in a fun and interactive way.

4.3 Part III, Data analysis gathered through the surveys

This section of the research presents the primary data conducted by a self-administered online questionnaire. There are 88 total participants, 45 are adults without children and 43 are adults who have children. The survey was distributed to these two different groups in order to see if having children affects respondents' attitude towards 1) banks that provide financial education for children; 2) using gamification in education; 3) importance of financial education both for adults and children in general.

The researcher will present and compare data from Groups A and B. The survey is similar for both groups; with the survey for Group A having 3 more questions that only respondents with children are able to answer.

4.3.1 Respondent demographics

Three questions have been asked in order to understand the respondents' demographics and level of education:

1) What is your gender?

2) What is your age?

3) What is the highest degree or level of school you have completed or are currently enrolled in?

In the Group A 27 (63%) out of 43 respondents are female and 16 (37%) are male. The two biggest age segments are represented by the respondents in the age range of 26-30 (39.5 %) and 31-35 (39.5%) years old that amount of total 34 people out of 43. Only 5 respondents (11.6%) are in the age range of 21-25 years old.

Of the 43 respondents:

- 18 have a bachelor's degree (41.9%)
- 17 have a master's degree (39.5%)
- 3 have a doctorate's degree (7%)
- 3 have a trade/technical/vocational training degree (7%)
- 2 have a high school degree (4.7%).

The respondents' demographics show that the majority of participants are well educated and possess considerable life experience.

In comparison, in the Group B 27 (60%) out of 45 respondents are female and 18 (40%) are male. The two biggest age segments are represented by the respondents in the age range of 21-25 (53%) that amounts for 24 people and 26-30 (36%) that accounts for 16 respondents. There are only 5 respondents older than 30 years old.

The result shows that respondents in the Group B are younger on average. This difference in age can be explained by the fact that respondents from the Group

A have children and respondents from the Group B do not, therefore it was expected that respondents from the Group B would be younger on average.

Despite younger age, the level of education stays the same. Of the 45 respondents:

- 5 respondents have bachelor´s degree (56%)
- 17 respondents have master´s degree (38%)
- 2 respondents have doctorate's degree (4%)
- 1 respondent has a high school degree (2%)

Demographics data analysis shows that the two groups differ only in age and if they have or do not have children. Further comparison will show how these factors affect respondents´ perception of the above-mentioned topics.

4.3.2 Respondents' opinions regarding financial literacy

Question 5 asks the respondents to describe their opinion on three characteristics of financial literacy: how accessible, how difficult to learn and how beneficial it is.

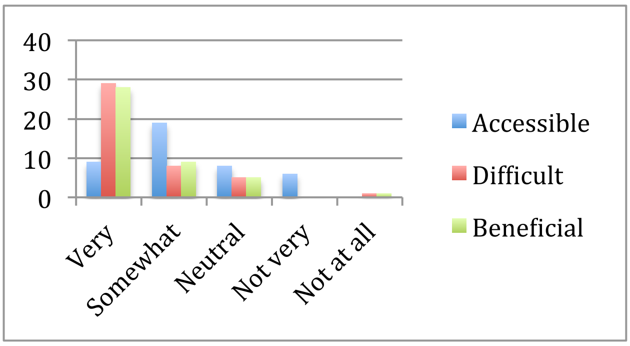


Figure 7 Question 5 for Group A

Figure 7 shows the results for Group A:

Respondents feel equally strong about the benefit of financial literacy as they do towards its difficulty. This is interesting because while we see education as important the difficulty may dissuade people from taking the initiatives to learn.

Only 1 respondent thinks that it is not at all difficult to acquire financial knowledge and only 1 respondent thinks it is not at all beneficial in life to be financially literate. Due to the small amount that feel this way we can consider these answers as outliers and not relevant to this research.

As for accessibility 19 (45%) respondents perceive financial literacy to be somewhat accessible, followed by 9 (22%) respondents who think it is very accessible. 8 (19%) respondents are neutral on the subject and 6 (14%) respondents think it is not very accessible. From these responses we see that people do feel accessibility exists, but not as strongly as they agree on the other characteristics.

Figure 8 illustrates the result for Group B:

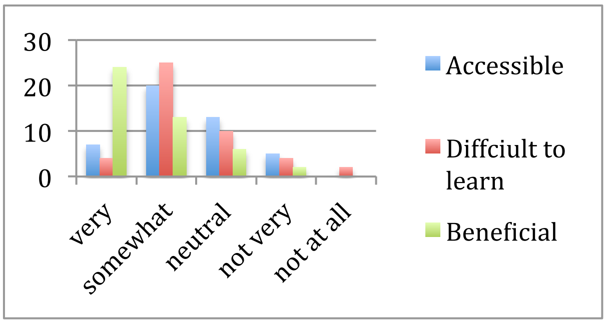


Figure 8 Question 5 for Group B

Respondents from Group B feel the same about each characteristic however they are not as strong in their responses as Group A.

An interesting observation is that in Group B more respondents chose “neutral” as an option:

- 13 (29%) are neutral about accessibility
- 10 (22%) are neutral about difficulty to learn
- 6 (13%) are neutral about how beneficial it is in life

  The fact that there are more respondents from Group B who are neutral on the questions can be explained by the fact that respondents are younger on average and they don’t have enough experience to base their judgment on.

Question 6 “How confident do you feel about your financial knowledge”

The goal was to ask the respondents to assess their own financial knowledge.

Figure 9 presents data of Group A:

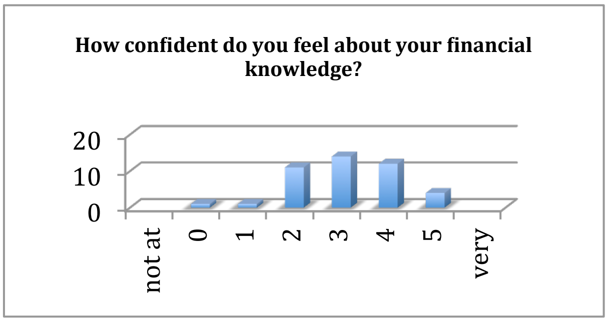


Figure 9 Question 6 for Group A

This Figure shows that there are only 9% of respondents that feel very confident about their financial knowledge. This may be due to the respondenets having a business background. 28% of respondents from Group A assess their financial knowledge positively and only 2 respondents (4%) do not feel confident at all on financial matters.

The results suggest that respondents possess some knowledge on the basics of finances and economics however the majority of respondents (59%) are doubtful about their ability to make sound financial decisions.

Figure 10 presents data of Group B:

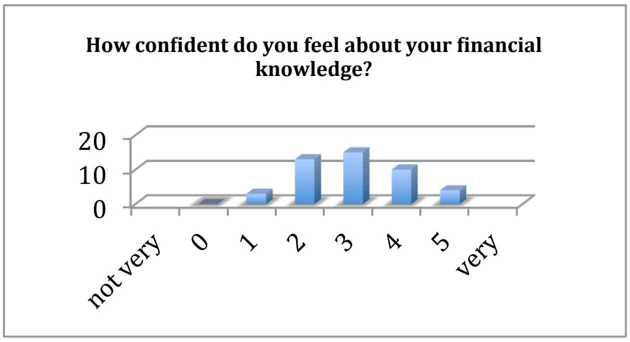


Figure 10 Question 7 for Group B

This Figure shows that there is not a big difference in how the answers are distributed compared to Group A:

9% feel very confident about their financial knowledge;

7% do not feel confident at all and the majority (62%) expresses doubts about their ability to make sound financial decisions.

Researcher suggests that the responses are similar for both groups because people in general tend to think that finances are a very specialized subject and without appropriate education it is impossible to be very good at finances. This result lines up with Question 5 where the majority of respondents categorized financial literacy as difficult to learn.

Question 7 asks respondents to state how much they agree with the following statement: *Being financially educated helps make more sound financial decisions*.

Figure 11 illustrates the findings:

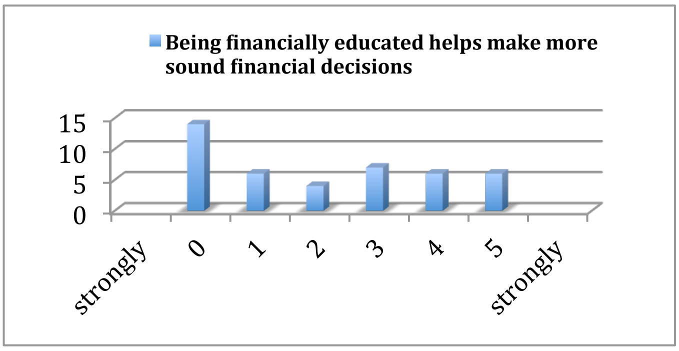


Figure 11 Question 7 for Group A

Here is an interesting observation:

- 14 respondents (33%) strongly agree with the statement;
- 10 respondents (23%) agree to some extent (Columns 1,2);
- 13 (30%) respondents disagree (30%) (Columns 3 and 4);
- 6 respondents (14%) strongly disagree with the statement.

Obtained data conflicts with the answers from Question 5 where the majority of respondents categorized financial literacy as very beneficial.

A closer look of the question made the researcher think that using “0” instead of “5” for “strongly agree” could confuse some respondents who might not have paid enough attention to the gradation of the scale.

The same result was obtained from Group B.

Figure 12 illustrates the data:

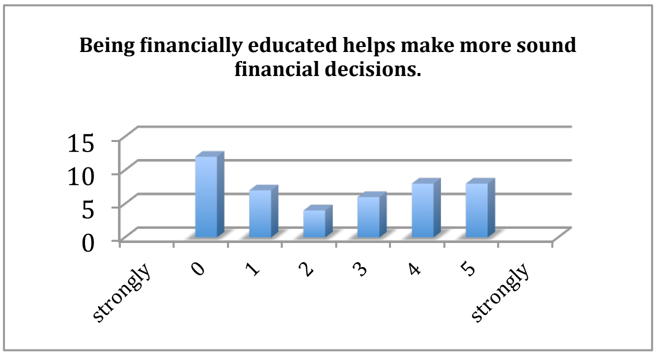


Figure 12 Question 7 for Group B

- 12 respondents (27%) strongly agree with the statement
- 11 respondents (24%) agree to some extent
- 8 respondents (18%) strongly disagree
- 14 respondents (31%) do not agree with the statement.

The conflicting results from both groups make the researcher think that a wrong gradation of the scale heavily affected the answers of the question. The researcher decided to omit the data obtained from Question 7.

4.3.3 Respondents' opinions regarding importance of financial literacy for children

This part of the survey investigates respondents' opinions on the importance of financial literacy for children. It covers the following topics:

- Are children capable to learn about money management between the ages of 7-12 years old?
- What respondents teach their children and how often?
- Do their children have classes on financial topics at school?

Question 8 *"In your opinion how important is teaching children about money management?"*

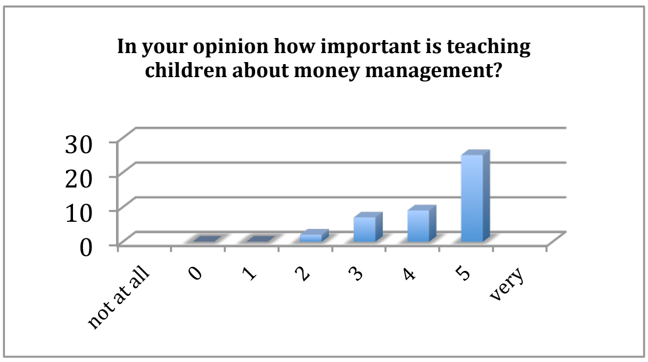


Figure 13 Question 8 for Group A

Figure 13 illustrates the results for Group A:

The question asks respondents to provide their opinions on the importance of teaching children about money management.

On the graph where 0 stands for not at all important and 5 very important, the majority of respondents (58%) stated it is very important to teach children about money management. Only 5% of respondents expressed doubts of whether it is important or not to teach children about money.

These answers show that respondents acknowledge the need to teach their children about money and the following questions provide deeper insight on the topic.

Figure 14 illustrates the results for Group B:

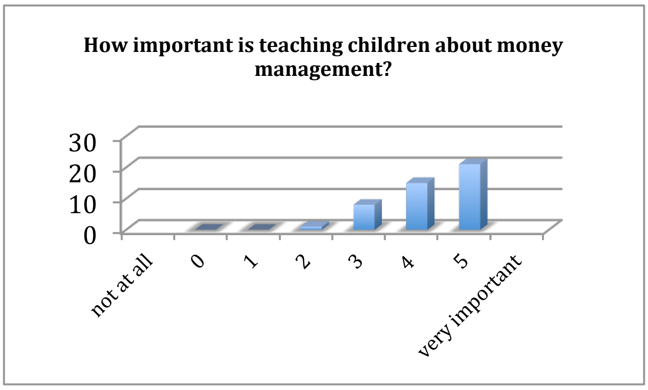


Figure 14 Question 8 for Group B

This figure shows that in general respondents from Group B feel that it is important to teach children about money management however they are not as strong in their opinions as respondents from Group A. 11% of Group B found it less "very important".

This difference suggests that adults with children care more about teaching money management. This is likely due to parents having a higher priority and understanding of education due to their children's active enrollment in school.

Question 9 *"How would you rate a child's (age 7-12) capability to learn the basics of money management?"*

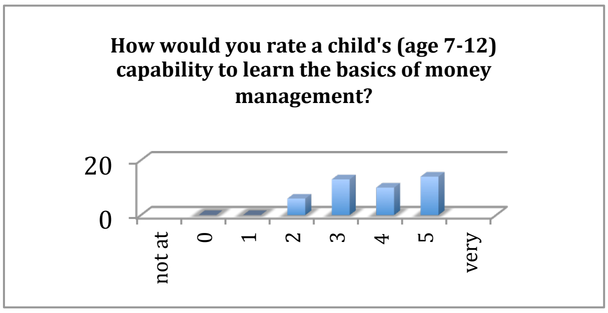


Figure 15 Question 9 for Group A

The purpose of this question was to find out what respondents think about educating children on financial topics while they are still young.

Figure 15 illustrates the results for Group A:

Opinions are almost equally divided among those who believe it is very possible children would grasp financial topics and those who don't feel strongly about this question.

On the scale from 0 to 5 where 5 is "very possible", the average of all participants' responses from group A is 3.75. The average score of 3.75 allows the researcher to draw conclusions that the respondents consider children to be capable of learning about money management. Due to respondents believing children are capable this reflects their efforts to teach children financial education.

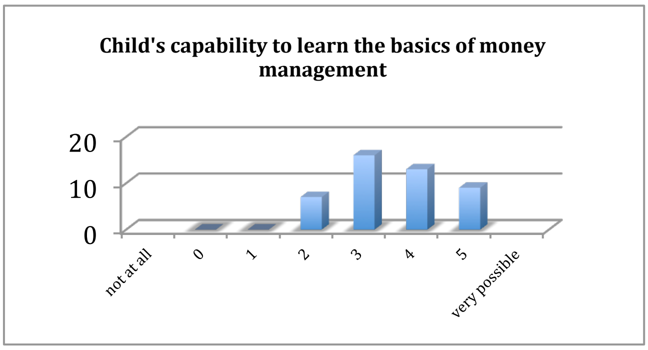


Figure 16 Question 9 for Group B

Figure 16 illustrates the findings for Group B:

This Figure shows that 7% less respondents from Group B think it is "very possible" that children are capable of understanding the topics on money management. Even though respondents from Group B still believe in children's capability to learn about money management, they are not as strong in their judgments compared to Group A. The average of all participants' responses from Group B is 3.5, which are slightly lower than the average score from Group A.

It can be explained by the fact that respondents from Group B can only make assumptions about children's capability to learn about finances while respondents from Group A base their opinion on their personal life experiences.

Researcher suggests that the way the respondents perceive the capability of children to understand money related topics affects the way they teach their children about money.

Question 10 *"Do you educate your children on finances? If yes, how old are your children and what exactly do you do?"*

In this question respondents were asked to share their experiences on how they teach their children about money and finances, if at all. This question was designed only for Group A.

Despite the different ages of children, the youngest is 8 month old and the eldest is 15 years old, it was still possible to make generalizations since parents with young children described in detail what they intend to do when their children grow up.

Here are the most common things practiced by the respondents:

- Talking to children about money in general: what money is, what salary is, why parents work, what savings is, why parents chose to buy or not buy certain things, why products have different prices, etc.
- Giving monthly allowance to children so they learn the value of money, how to make their own decisions concerning what to buy, and teach them how to save.
- Opening a savings account for children so they learn to save for larger purchases. Also it helps them to familiarize themselves with a bank and its services.
- Giving children the opportunity to earn small amounts of money by doing domestic chores
- Playing fun games that promotes learning (only couple of respondents use this technique)

7 respondents say that they don't do anything specific to teach their children about money management and 3 out of these 7 say that they expect schools to educate their children on financial topics.

The answers gathered from the survey are in line with the answers obtained from the interviews. However, it was not possible to find out through the survey how respondents intend to teach their children about more advanced financial topics and if they feel confident enough to do so.

Question 11 "Do your children receive financial education at school? If yes, please rate how satisfied you are with the program/class/curriculum at school". This question was designed only for Group A.

Figure 17 illustrates the answers:

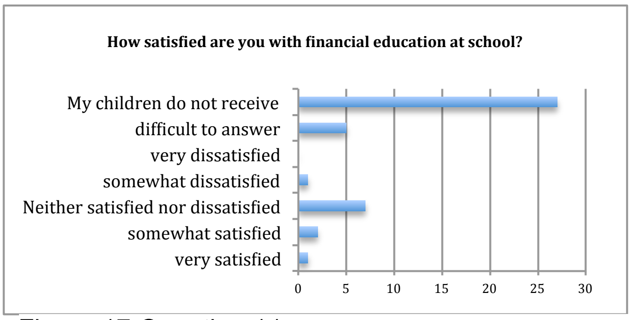


Figure 17 Question 11

63% revealed that their children do not receive any financial education at school. This may be due to the young age of children (average age of children is 6-10 years old). For 16 % of respondents it is difficult to answer and 12% are neither satisfied nor dissatisfied with financial education at school.

This result shows that since the majority of children do not yet receive financial education at school there is a clear need for extra efforts or activities that would fulfill this need.

Question 12 *"How often do you talk to your children about money at home?"*

This question was designed only for Group A.

Figure 18 shows the result:

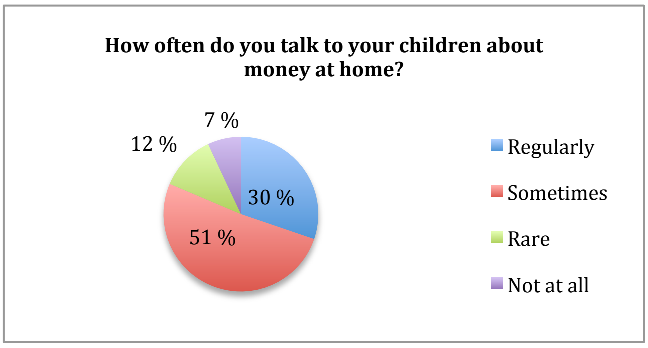


Figure 18 Question 12 for Group A

This figure shows that the majority of respondents talk to their children about money regularly or sometimes.

Only 7% of respondents do not talk at all to their children about money.

These results suggest that it is highly important for respondents to teach children about money and they are ready to allocate some time to do so. However only 30% of respondents teach their kids regularly which leads to the conclusion that respondents don't fully participate in their children's financial education. Hence, they are more likely to outsource the education process to a third party.

4.3.4 Respondents' perception regarding the role of banks and gamification in financial education

This part investigates respondents' opinion on the following topics:

- Use of gamification in education;
- Banks as a provider of financial education games for children;
- Savings accounts for children.

Answers from **Question 13** *"What do you think about using gamified solutions for education?"* provide an overall picture of what respondents think about using gamification in education.

In order not to confuse respondents, the term gamification was replaced by "gamified solutions" which was explained at the beginning of the questionnaire.

Figure 18 shows the results for Group A:

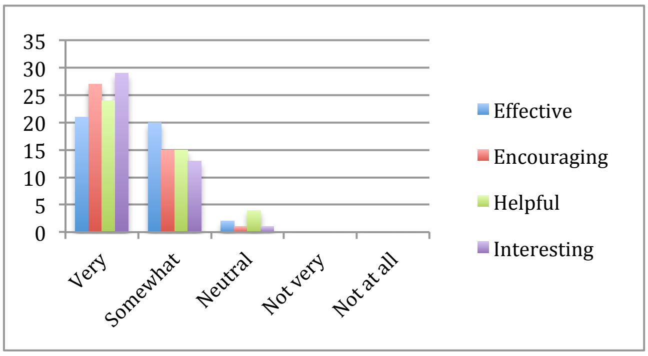


Figure 19 Question 13 for Group A

This figure shows that the majority of respondents believe using gamification in education can be very effective (49%), very encouraging (63%), very helpful (56%) and very interesting (68%). Another considerable amount of respondents also see gamification as somewhat effective (46%), somewhat encouraging (35%), somewhat helpful (35%) and somewhat interesting (30%) however they are not as strong in their opinions.

From these results compared to the low amount of companies providing gamified solutions, as referenced in section 5.1.2, shows the huge potential Banks and other financial institutions have in providing gamified applications to enhance their marketing and customer retention efforts.

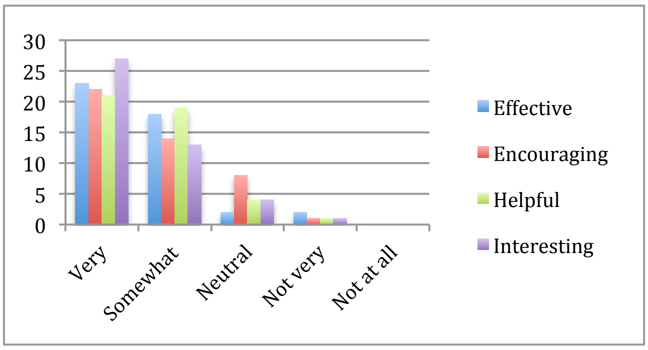


Figure 20 Question 13 for Group B

Figure 20 shows the results for Group B:

The table shows that respondents from Group B distribute their answers in a similar way. However, since there are only a few individuals who are neutral on these questions, the researcher doesn't consider this in her conclusions.

The data shows that both groups perceive the use of gamification in education as an effective, encouraging, helpful and interesting approach. Moreover since the answers are almost equally distributed among characteristics, the researcher suggests that having children does not influence the attitude towards the use of gamification in education.

Question 14 *"If a bank provides a financial education game how would this affect your perception of this bank?"*

The goal was to find out if promoting financial education games would really enhance a bank's image and reputation among respondents.

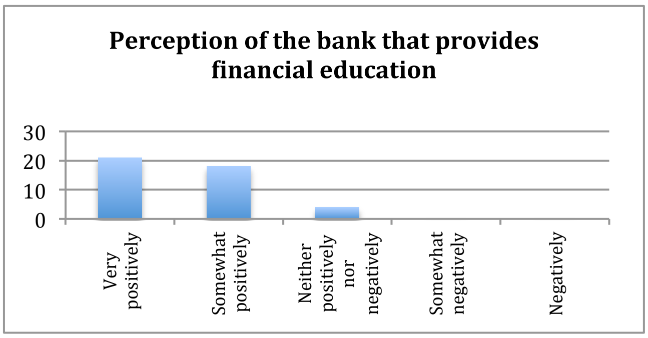


Figure 20 Question 14 for Group A

Figure 21 shows the result for Group A:

While only 9% of respondents answered “neither positively nor negatively”, the overall perception of banks that provide financial education games for children is positive.

49% would perceive such banks very positively and 42% somewhat positively.

These results suggest that banks will benefit from investing in financial education. These benefits include increased brand awareness, public relations, marketing effectiveness, and the other benefits discussed in section 2.3.3.

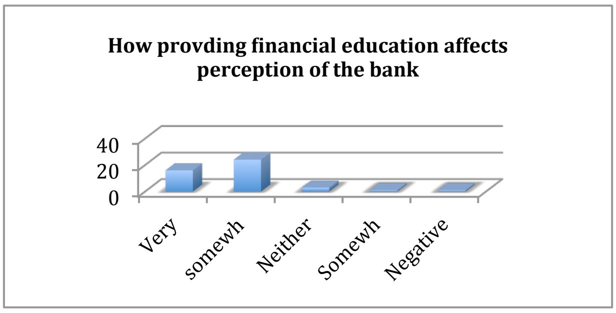


Figure 21 Question 14 for Group B

Figure 22 illustrates the findings for Group B:

The table shows that on average participants perceive banks that provide financial education games for children positively. However, respondents from Group A are stronger in their opinions than respondents from Group B.

Group A is likely stronger in their positive response because they have children and are actively seeking educational programs that banks can provide.

While Group A is stronger in there positive sentiments of this question, respondents from Group B help to understand that regardless of whether respondents have children or not, a bank providing financial education for children reflects positively on the bank.

Question 15 *“According to you, in which ways would the savings account benefit children to have their own savings account?”*

The goal of the question is to understand what motivates respondents to open a savings account for children. This question allows multiple responses.

Figure 23 shows the result for Group A:

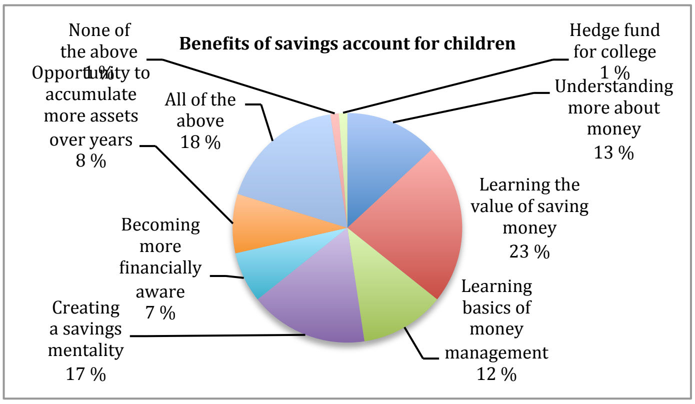


Figure 22 Question 15 for Group A

This figure shows why respondents are motivated to open savings accounts for children:

- The possibility for children to learn the value of saving money (23%)
- The opportunity to create a savings mentality (17%)
- Understanding more about money (13%)
- Learning basics of money management (12%).

15 respondents (18%) out of 43 chose “all of the above” and only one respondent doesn’t see any benefits when opening a savings account for children. One respondent suggested his own idea, which was “having a hedge fund for college”. This suggestion is also a form of savings account for children.

The overall result shows that respondents realize the many benefits of opening a savings account for children and previous questions and interviews show that some respondents already have one. In conclusion, banks should market/utilize these benefits toward the youth market segment to easily grow their customer base.

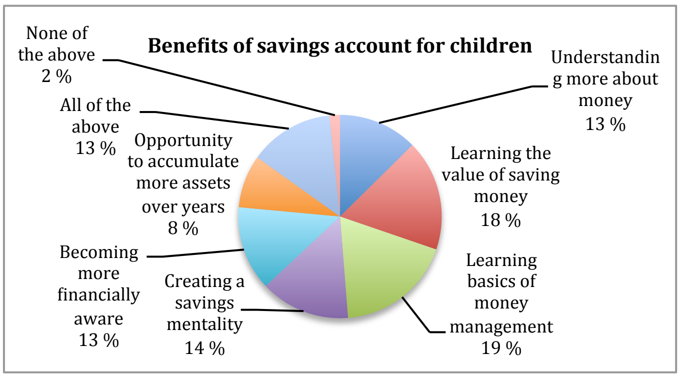


Figure 23 Question 15 for Group B

Figure 24 illustrates the findings for Group B:

The table shows that respondents from Group B see major benefits in the opportunities of learning the value of saving money (18%)

and basics of money management (19%).

Almost equally important to the respondents are the following benefits: understanding more about money (13%), becoming more financially aware (13%) and creating a savings mentality (14%). 13% of all respondents chose “all of the above” and only 2% “none of the above”.

While Group B distributed the answers fairly equally among “learning the value of saving money” and “learning basics of money management”, Group A views the biggest benefits “the opportunity to learn the value of saving money” (5% more) and “the opportunity to create a savings mentality” (3% more).

The answers from question 10 and interviews support this data since these are the most common goals pursued by parents when teaching children about money management.

Question 16 “When opening a child's savings account, how important are the following characteristics to you?”

The goal of the question was to identify what the respondents consider to be important when opening a savings account for children.

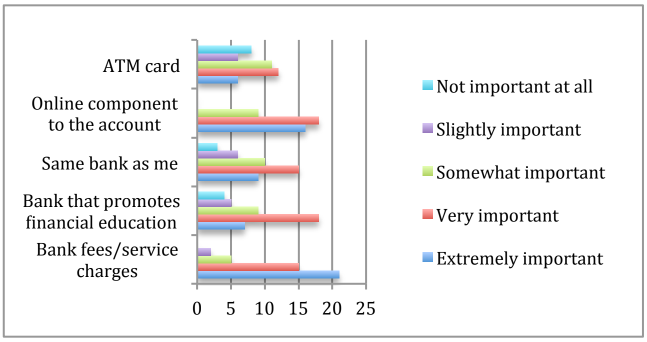


Figure 24 Question 16 for Group A

Figure 27 illustrates the results for Group A:

On a scale from 1 to 5 where 5 is the “most important” for Group A, the average for each characteristic is:

- 4.3 bank fees/service charges;
- 4.2 online component of the bank;
- 3.5 bank that provides financial education and same bank as me

- 2.9 ATM card

The average score for each characteristic clearly shows that all of them are important but bank fees/service charges with the online component are the most crucial factors that respondents take into consideration when opening a savings account.

The same question was addressed to the respondents of Group B. The goal was to find the opinion of people who are not presently concerned with the decision to open a children's savings account, but may have to make this decision in the future.

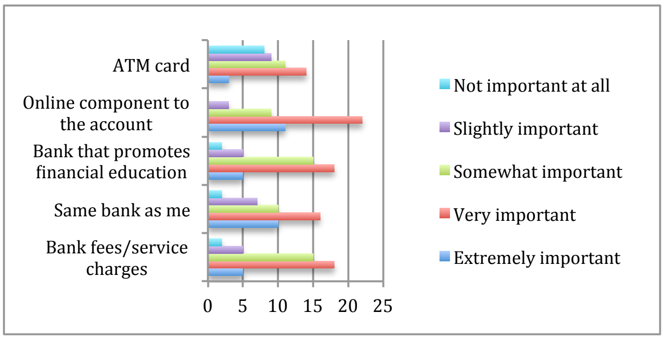


Figure 25 Question 16 for Group B

Figure 26 illustrates the results for Group B

On a scale from 1 to 5 where 5 is the "most important" for Group B, the average for each characteristic is:

- 3.9 online component to the bank;
- 3.5 the same bank as me;
- 3.4 bank that promotes financial education
- 3.4 bank fees/service charges and
- 2.8 ATM card.

In comparing these averages between groups, the first noticeable difference is that the average score for each characteristic is considerably lower in Group B than in Group A.

Also for Group B the most important characteristic is "online component of the bank" while for Group A the most important are bank fees and service charges.

While no direct conclusion can be made as to why some reasons for choosing a child's bank account are more important than others from comparing Group A and B, we can see that those with children have stronger feelings about what a child would want/need.

While some factors like bank fees are still the most important to bank customers, most likely because it directly affects customers, financial education ranks highly in importance to banking customers. Additional findings from this survey are that respondents believe or agree that children are capable of learning finances, willing to open accounts for children, a gamified approach is a good way to educate, education is equal to other consideration when opening accounts, and a banks reputation is increased from educational programs. In Conclusion by performing a complete analysis of all of the survey questions there is overwhelming evidence that banks should provide financial education to youth and that a gamified approach is a welcome delivery method.

5 CONCLUSION

The researcher deduced her hypothesis from the theory covered in the Literature Review chapter. This hypothesis stated that banks could use gamification as en effective way to promote their brand and grow their customer base by delivering financial education to children. Quantitative and qualitative data collection techniques used by the researcher proved the initial hypothesis to be correct.

Quantitative data was obtained through the questionnaires. The questionnaires have been sent to two different groups: adults with children (Group A) and adults without children (Group B). The researcher concluded that there is no crucial difference in how each of these groups percieve finacial literacy, banks that provide financial education to children and the use of gamification in education.

In order to prove the fore-mentioned hypothesis a set of research questions was set and answered:

7. How important is financial literacy for both adults and children?
8. What is the public opinion regarding the use of gamification in education?
9. How do banks benefit from promoting gamified financial programs for children?

The first question was answered using secondary data and primary data obtained through interviews and questionnaires.

A rigorous analysis of the existing knowledge and theories on the importance of financial literacy showed that financial literacy enables consumers to save money, set retirement goals, make sound financial decisions in the field of investments, and understand better financial markets. All this knowledge translates into more adequate financial behavior that benefits not only consumers but the economy and society as well. However international evidence on the level of financial literacy is very disappointing. People from different countries show little to no knowledge on the basics on finances. Hence there is a huge need for financial education. Many scholars claim that financial education should target not only adults but children as well. They also suggest that children have more chances to become financially literate adults if they are exposed to appropriate financial education programs and activities from their childhood.

From conducting seven semi-structured interviews with parents, the data obtained supported the theory presented in section 2.1.

All interviewees acknowledged the importance of financial literacy in their lives and all of them see the benefits of being financially literate. However only those interviewees with business backgrounds feel very confident about their financial knowledge while others admit that they possess only basic knowledge on financial matters.

Data obtained through the surveys also showed that the majority of respondents perceive financial literacy as “very beneficial” (67%) and “very difficult” (65%) at the same time. A question that asked respondents to grade their confidence on their financial knowledge revealed that only 9% feel “very confident” while 59% are doubtful about their ability to make sound financial decision.

Data obtained through the interviews and surveys for parents regarding the importance of financial literacy for children is also in line with the theory covered in section 2.1.4

Interviewees were unanimous that it is highly important to teach children about money from early childhood and all interviewees revealed that they already attempt to educate their children on basic financial topics at home.

Data obtained through the survey also shows that the majority of respondents believe it is “very important” to teach children about money. Further questions showed that the majority of respondents’ children do not receive financial education at school. Hence there is a big opportunity for third parties to enter the market and fulfill this need.

The second question was answered using the results obtained from interviews and surveys.

Multiple researches regarding gamification in education showed that the reasons for low performance among adults and children were boredom, lack of motivation and engagement. Advocates of gamification insist that gamifying the learning process addresses these problems by raising engagement among participants and therefore transforming the learning process from dull into a fun activity.

Analyzing the results from the interviews and surveys, the researcher came to the conclusion that public opinion regarding the use of gamification in education is very positive and people would gladly accept the opportunity to teach their children money management using a gamified solution.

In addition, all interviewees admitted that their children play various games. Moreover four interviewees encourage their children to play educational games. They stated, "…. it is more effective to make children learn via games than via standard exercises".

Data obtained through the surveys supported interviewees' opinions regarding the use of gamification in education. The majority of respondents recognize gamification as an effective, encouraging, helpful and interesting approach.

Positive attitude towards games in the educational process further proves that banks and other financial education providers have tremendous business opportunities in this area.

The third question was answered by investigating two perspectives:

- The first perspective was from an interview with a gamification professional that provided a full overview of a gamified solution

developed for ING bank (Planet Orange), as well as explained the bank's reasoning behind the decision to invest in this solution
- The second perspective was customer's perception of banks that provide financial education for children

The reasons ING bank made the decision to invest in the "Planet Orange" project was:

- The opportunity to bank a previously unbanked segment of the market before competitors, resulting in growing its customer base and generating future revenues
- A possibility to cross sell and up sell products and services to the family members of the "Planet Orange" users
- Creating a positive image of financial solution provider
- Gaining loyalty from the next generation of customers
- Increased reputation

The results from the conducted interviews reflect the bank's reasons to invest in "Planet Orange". All interviewees admitted that they would perceive banks that provide financial education to children more positively. Moreover interviewees would consider opening savings account from these banks or even switching their banks in order to access the "game".

The results obtained from the surveys revealed that the majority of respondents would perceive such banks as "very positively" (49%) or "somewhat positively"(42%). This shows that the surveys are in line with the interviews and the banks reasons for investing in similar projects.

In the example of "Planet Orange", ING bank insists that in order to access the financial educational game it is compulsory to open a children's savings account. Based on this the researcher decided to find out what the respondents opinions on savings accounts for children are in general. The results showed that respondents' attitude towards savings accounts for children is very positive and that they see a whole range of benefits from opening one. The biggest benefits according to respondents are learning the value of saving money (23%) and creating a savings mentality (18%). This means that even though ING makes opening a savings account compulsory it shouldn't be an issue gaining new customers.

Thus the researcher concludes that utilizing gamification as a tool to deliver financial education to children can benefit both banks and consumers. Since competition is low in the existing market and acceptance is high among customers, Banks that provide financial education via gamification will enjoy a tremendous opportunity to increase their existing customer base as well as enhance their reputation. At the same time consumers and their children will have an entertaining way to increase their financial knowledge that will result in better personal finances that will then benefit their society and even the economy as a whole.

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SURVEY

This survey aims to collect data and opinions on financial literacy (the possession of knowledge and understanding of financial matters), specifically on the importance of financial education for children. Also the survey aims to investigate people's perception/acceptance of gamified solutions in the financial education sector. In this context, "gamified solution" means adding game elements to existing educational content, thus creating more engaging, motivating and interesting experience for the users (children).

1. What is your gender?

- Male
- Female

2. What is your age?

- Under 20 years old
- 21-25 years old
- 26-30 years old
- 31-35 years old
- 36-40 years old
- Other:

3. Do you have children?

- Yes
- No

4. What is the highest degree or level of school you have completed or are currently enrolled in?

- High school graduate
- Trade/technical/vocational training
- Bachelor’s degree
- Master’s degree
- Doctorate degree
- Other:

5. Please describe your opinion on the following characteristics of financial literacy. Is it:

	Very	Somewhat	Neutral	Not very	Not at all
Accessible	◯	◯	◯	◯	◯
Difficult to learn	◯	◯	◯	◯	◯
Beneficial	◯	◯	◯	◯	◯

6. How confident do you feel about your financial knowledge?

	0	1	2	3	4	5	
Not at all confident	◯	◯	◯	◯	◯	◯	Very confident

7. How much do you agree with this statement: Being financially educated helps make more sound financial decisions.

	0	1	2	3	4	5	
Strongly agree	◯	◯	◯	◯	◯	◯	Strongly disagree

8. In your opinion how important is teaching children about money management?

	0	1	2	3	4	5	
Not at all important	◯	◯	◯	◯	◯	◯	Very Important

9. How would you rate a child's (age 7-12) capability to learn the basics of money management?

0 1 2 3 4 5

Not at all possible ◯ ◯ ◯ ◯ ◯ ◯ Very possible

10. Do you educate your children on finances? If yes, how old are your children and what exactly do you do?

If your children are too young but you intend to educate them on finances later on, what exactly do you plan to do?

11. Do your children receive financial education at school? If yes, please rate how satisfied you are with the program/class/curriculum at school.

- ☐ Very satisfied
- ☐ Somewhat satisfied
- ☐ Neither satisfied nor dissatisfied
- ☐ Somewhat dissatisfied
- ☐ Very dissatisfied
- ☐ Difficult to answer
- ☐ My children do not receive financial education at school

12. How often do you talk to your children about money at home?

If you dont have children, please skip this question.

13. What do you think about using gamified solutions for education? It could be:

	Very	Somewhat	Neutral	Not very	Not at all

	Very	Somewhat	Neutral	Not very	Not at all
Effective	○	○	○	○	○
Encouraging	○	○	○	○	○
Helpful	○	○	○	○	○
Interesting	○	○	○	○	○

14. If a bank provides a financial education game how would this affect your perception of this bank?

- ☐ Very positively
- ☐ Somewhat positively
- ☐ Neither positively nor negatively
- ☐ Somewhat negatively
- ☐ Negatively

15. According to you,in which ways would the savings account benefit children to have their own savings account?

If yes, check all that apply. If no, check "none of the above".

- ☐ Understanding more about money
- ☐ Learning the value of saving money
- ☐ Learning basics of money management
- ☐ Creating a savings mentality
- ☐ Becoming more financially aware
- ☐ Opportunity to accumulate more assets over years
- ☐ All of the above
- ☐ None of the above
- ☐ Other: ☐

16. When opening a child's savings account, how important are the following characteristics to you?

	Extremely important	Very important	Somewhat important	Slightly important	Not important at all
Bank fees/service charges	○	○	○	○	○
Bank that promotes financial education	○	○	○	○	○
Same bank as me	○	○	○	○	○
Online component to the account	○	○	○	○	○
ATM card	○	○	○	○	○

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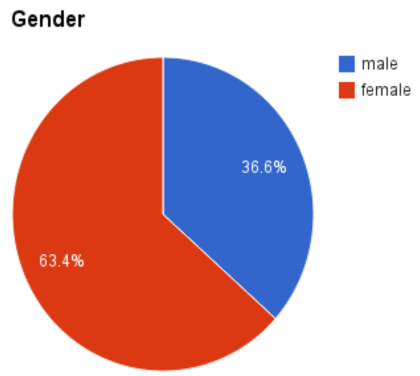
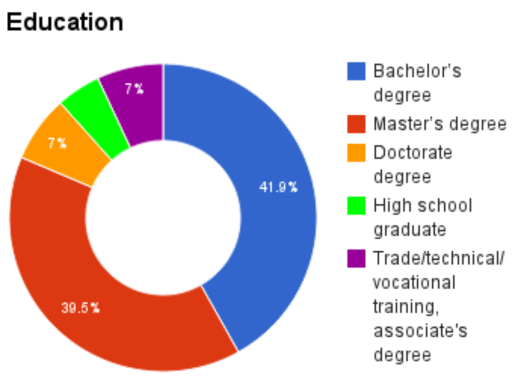
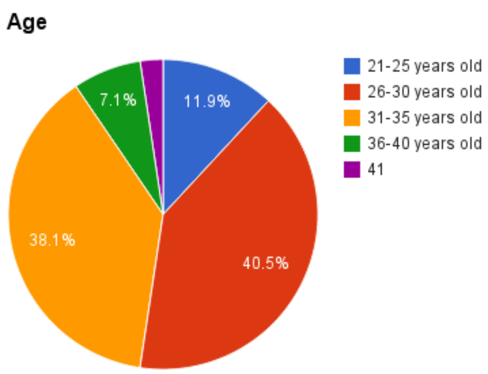
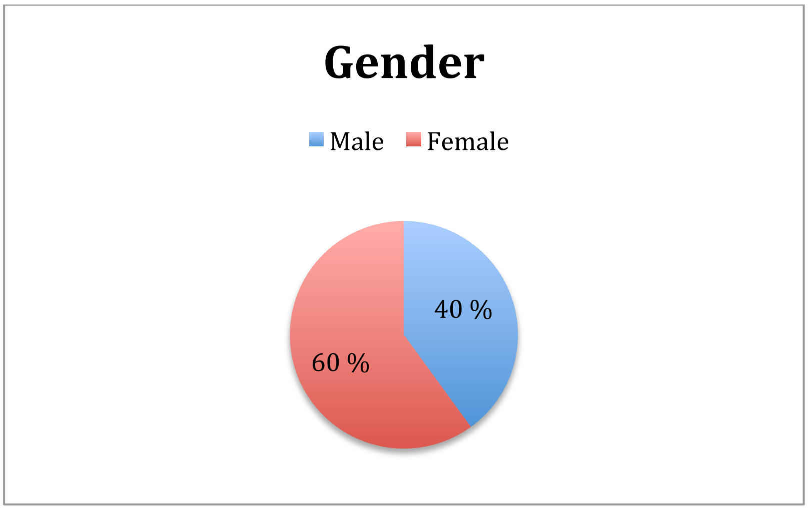
Appendix 2 Respondents demographics for Group A

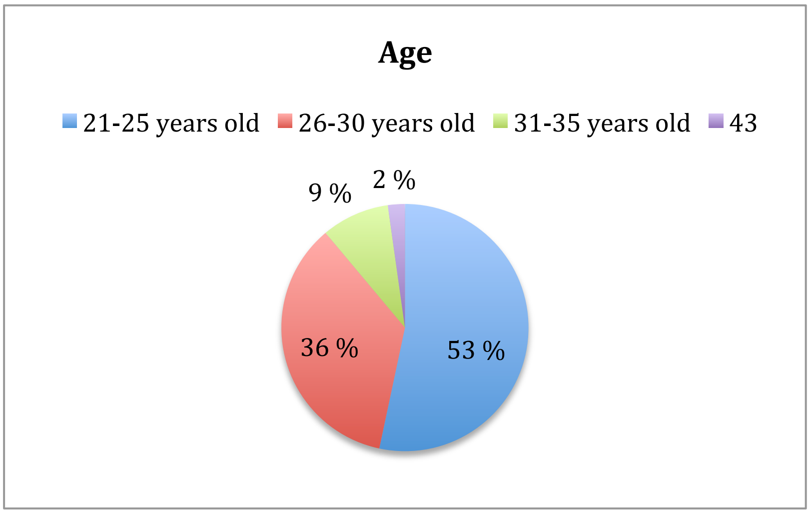


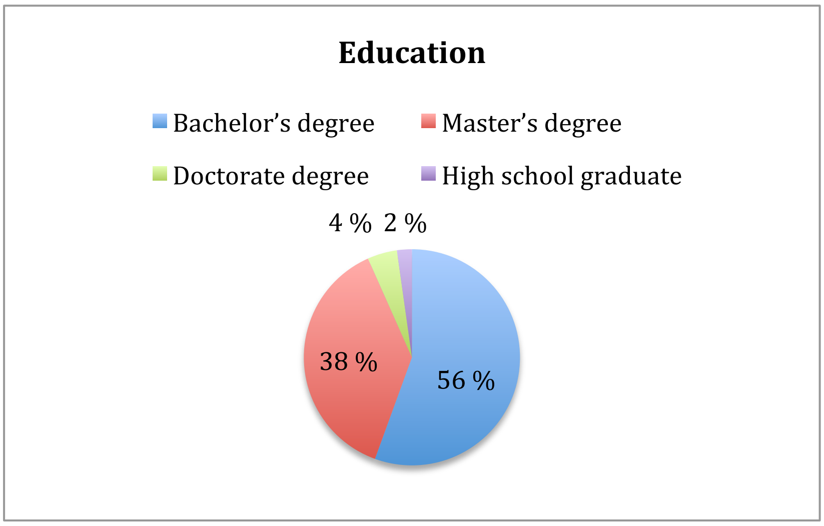




Respondents Demographics for Group B


Gender
Male
Female
40 %
60 %


Age
21-25 years old
26-30 years old
31-35 years old
43
9 %
2 %
36 %
53 %


Education
Bachelor's degree
Master's degree
Doctorate degree
High school graduate
4 %
2 %
38 %
56 %