FINANCIAL SOCIALIZATION OF CHILDREN

Using education to encourage lifetime saving

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Financial socialization of children is imperative in the context of consumer protection policies, but also in improving the financial well-being of individuals. Today more than ever, our personal and family safety depends on personal saving. Even though children are told they should save, many of them together with their parents relate saving only to bank savings or just never develop a solid savings habit. The times we live in offer different types of saving and, more importantly, more reasons to save. One of the most important reasons for saving is certainly a safer future, and from today’s perspective of a financially developed market, which offers us a large selection of products, savings is not just money deposited in a bank, it also includes payments in the second and third pension pillars or investment funds, that is, it refers to giving up instant gratification for something in the future.

Ten years ago, World Bank cautioned that financial literacy, along with consumer protection, was one of the most important prerequisites for ensuring long-term stability of any country’s financial system. It is easy to agree with this view, as citizens today can greatly influence the movements of the financial system with their financial decisions. Therefore, it is important to help them learn to make the right decisions for themselves from the earliest age. It can be said that financial capability in today’s world is almost as important as all other forms of literacy.

Moreover, financial literacy in the 21st century is as important as computer literacy, without which it would be difficult to imagine modern life as we know it. Citizens who gain awareness of the importance of developing their own financial literacy and confidence in the early stages of life will be more successful in making decisions such as choosing college education, getting their first loan, starting their own business or a retirement savings plan.

If you ask me about positive developments in financial literacy, the truth is that they do exist, but are still insufficient. It is important for the benefit of the individual as well as the society as a whole to improve financial literacy continually. Experiences of developed countries like Finland confirm that the best results are achieved if financial education starts at an early age, that is, at the very beginning of school years.
Young authors wrote a book entitled ‘Financial Socialization of Children – Using Education to Encourage Lifetime Saving’ at the right social moment – when life expectancy is increasing and when demographic changes in every European country are radically altering old paradigms, with education and knowledge as key components of our daily lives.

In a very innovative, systematic, and analytical way, the authors approach the study of habits and behaviors of primary school children in different geographical and social environments.

The survey conducted on a sample of 715 students from 30 elementary schools across Croatia is an invaluable document for further study, but also a testament to a moment in time. Apart from the scientific aspect of the book and the importance of the data obtained in market research, we must not neglect its sociological and psychological aspects, where issues regarding the financial capacity of children, their behavioral habits, and their attitudes toward saving are analyzed from the aspect of different geographical cohorts, as well as the influence of media and the environment on children. Therefore, I would recommend this book to all who work in the field of financial education, but also to students and educators who are searching for a more detailed insight into children’s behavior and attitudes towards money.

Collaborating with Assistant Professor Lučić and Assistant Professor Barbić as educators on the project *Mala akademija financija* (Little academy of finance), I have witnessed their enthusiasm and creativity, but also the depth of their knowledge and expertise in teaching consumer finance concepts, and the energy they invested in bringing finance topics closer to students (grades 5 to 8). The *Mala akademija financija* project, which gave birth to this book, was also a very valuable experience for me and an opportunity to gain new knowledge, and above all, a confirmation that it is necessary to continue developing projects in areas of financial literacy with even stronger conviction and commitment, especially for the youngest.

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ACKNOWLEDGEMENTS

This book was inspired by the MAFIN project – *Mala akademija financija*, or Little academy of finance, and by collaboration with numerous schools, their principals, teachers and parents. The first “thank you” goes to Dijana Bojčeta Markoja, Managing Director of the Association of Croatian Pension Funds Management Companies and Pension Insurance Companies (UMFO), who recognized the importance of financial education of primary school children and initiated this project. Many thanks to Dražen Klarić from *Večernji list*, Blaženka Divjak, Croatian Minister of Science and Education, Nevenka Lončarić Jelačić and Tomislav Ogrinšak from the Education and Teacher Training Agency. We also wish to thank the dean of Faculty of Economics and Business prof. Jurica Pavičić who recognized the significance of this project and offered valuable support.

We thank all the schools and the professor coordinators who warmly welcomed us together with their students. Your work, ambition and dedication are inspiring.

We thank the reviewers, prof. M. Ivanov and prof. Z. Galić for their dedicated advice and effort to help us make this book what it is today.

A big thank you to all of our colleagues and friends who at all times support our academic projects and aspirations, as well as unconditionally recognize our success as their own.

The greatest thank you goes to our husbands, wives, children, mothers and fathers who are our implicit co-researchers. They provide the necessary mental, emotional and logistical support and encouragement without which a field research and a book like this would never be possible.

We hope this book will change many hands and minds and have a long-lasting life. At most, we hope it will build solid grounds for many other books, papers and projects that are yet to come.

Andrea, Dajana & Nikola
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“One child, one teacher, one book, one pen can change the world. Education is the only solution.”

— Malala Yousafzai
To educate children to save by influencing their saving attitudes and behavior is the first step in the process of responsible financial consumption behavior among adults. Knowing that poor financial choices can have a long-lasting effect on the well-being of both individuals and the society as a whole, and that saving is crucial for long-term financial stability, it has become very important for children to be educated in saving planning and rational spending, as early as possible. This book focuses on financial socialization, financial education, financial behavior and saving habits of children aged 10-15, also known as late childhood. It also examines the efficiency of traditional financial education and behavioral intervention within the Mala akademija financija project (Little academy of finance). The behavioral intervention was developed based on three psychological phenomena: self-persuasion, goal setting and the development of implementation intentions. The data was collected in two waves: two months prior to the intervention and three months after the intervention. This experimental project was conducted on the sample of 715 pupils (471 fully completed the pre and post experimental questionnaires) from 30 primary schools in Croatia participated in the research. The findings reveal that the majority of children engage in saving and that most of them receive allowance. The parents have been confirmed as important agents of the children’s financial socialization. The study has established that self-efficacy is the most important predictor of saving intentions and responsible financial behavior. Results suggest statistically significant differences between experimental and control schools for all four variables in different time frames. However, there were no significant differences between the two types of experimental schools.

These topics are discussed in the theoretical parts of the book (chapters 1, 2, 3 and 4), as well as on the empirical level, through primary microdata analysis (chapters 5 and 6).

KEYWORDS:
financial socialization of children, financial education, saving, responsible financial behavior, spending, experiment.
Every day more and more individuals face difficulties in managing their personal finances and experience problems recognizing and evaluating financial risks, especially when it comes to the risk of indebtedness. On the one hand, financial products are becoming increasingly intricate, requiring a higher level of financial knowledge and skills. On the other hand, many economies are currently facing serious problems in terms of long-term sustainability of their health and pension systems, thus shifting responsibility for health and pension savings from institutions to individuals. The overall situation on the market requires a higher level of financial literacy of all citizens, starting from a much earlier age.

Today, children are raised in a complex world, where they will eventually need to manage their finances and plan their everyday lives. They will need to comprehend quickly how to budget and how to make informed and rational financial decisions. They will also be expected to manage financial risk, save for “rainy days,” avoid taking on unmanageable debt, and save for retirement (OECD, 2012b). Furthermore, children start to contribute to the market much earlier than ever before, without having the necessary cognitive competencies. Marketing experts are becoming keener and keener in targeting children as consumers, not only through the pressure they place on their parents and other adults, but also on them as individuals (Buckingham, 2007).

The significance of saving and the necessity to motivate children has been recognized in many published papers (Browning and Lusardi, 1996; Attanasio and Weber, 2010; Bucciol and Veronesi, 2014). Saving is important for every individual and every household, and it is essential for various purposes: to protect against unexpected events and expenses, to purchase goods of high value (such as a car or a house), to ensure safe retirement and to provide household financial stability. In spite of that, people often do not save sufficiently or do not save at all (Lusardi, 1999, 2004; Van Rooij, Lusardi and Alessie, 2011, 2012; Banks, 2010; Banks, O’Dea and Oldfield, 2010; Ssewamala and Sherraden, 2004; Han and Sherraden, 2009; Schreiner and Sherraden, 2007).
Experts argue that it is becoming increasingly important for children to understand how to make sound financial choices as early as possible (Lunt, 1996; Lunt and Furnham, 1996; Suiter and Meszaros, 2005; Lucey and Cooter, 2008) because poor financial choices can have long-lasting effects on their welfare, their families, and the society as a whole (OECD, 2012a). Financial education of younger generations has become especially important since it is they who will probably face more financial risks and be confronted with increasingly complex financial products and services, compared to their parents. Moreover, the young have access to financial services at ever earlier ages (through pocket money, mobile phones, bank accounts, or even credit cards).

When talking about children, whose financial habits and strong patterns of financial behavior are still not fully developed, their financial behavior might be difficult to mold. The reason for that is that human behavior is influenced by various behavioral biases. Such biases might be the cause of the behavior that appears inconsistent or irrational (OECD, 2019). According to OECD (2019), applying behavioral insights into financial education programs and combining traditional ways of teaching with new tools is very important and might produce better results. Furthermore, financial educators and scholars discovered that children might learn more when financial education programs are experiential, when they include diverse experiential applications and target teaching techniques for various learning styles and diverse groups (Kourilsky and Carlson, 1996; Fox and Bartholomae, 1999; Hilgert, Hogarth and Beverly, 2003; Lucey and Giannangelo, 2006).

This book was written with the aim to contribute to the literature published in the field of financial socialization and financial education of children. From a scientific point of view, there is a considerable lack of literature in the field of experimental research into the behavior of children with regard to saving using behavioral interventions together with a more traditional approach to education. Also, the book represents the first experimental research study in the region conducted in the field of saving behavior of children, together with their propensity to save, and including such a large sample of primary school children.

From an applicative point of view, the importance of nurturing saving behavior as a lifelong habit and building responsibility toward money is of great value for individuals, but also for the stability of entire economic systems. As everything else in life, the foundations of responsible saving and financial behaviors are laid most efficiently at a young age, when all the “wrongs” can be easily undone.

The findings presented in the book are the result of a large project called Mala akademija financija (Little academy of finance), organized by the Associ-
ation of Croatian Pension Funds Management Companies and Pension Insurance Companies (Cro. Udruga društava za upravljanje mirovinskим fondovima i mirovinskih osiguravajućih društava – UMFO), the Faculty of Economics and Business in Zagreb, Croatia’s largest daily newspaper Večernji list, the Ministry of Science and Education and the Education and Teacher Training Agency. The project call for applications resulted in 87 schools entering the competition, with teams of pupils from the fifth to the eighth grade. A total of 30 schools were eventually chosen and 715 pupils given financial education.

The purpose of this research was:

- To get a complete overview of the children’s saving and spending behaviors and habits; to see how those relate to their gender, age, and residence, as well as their parents’ education levels
- To explore the predictors of children’s saving intentions and behaviors in terms of the Theory of planned behavior; specifically, to investigate the effects of saving attitudes, parental and peer norms, perceived behavioral control and self-efficacy, as well as materialism and self-control on saving intentions and responsible financial behavior
- To test the influence of financial education and psychological motivational intervention when compared to the traditional educational approach on responsible financial behavior and its determinants.

The theoretical foundation of this book arises from three separate yet connected areas: (1) financial socialization of children, (2) effectiveness of formal financial education programs aimed at children, with the intention of reinforcing their saving behavior, and (3) children and saving behavior studied from the perspective of the Theory of planned behavior.

Each part is researched in detail, with special focus on the implications of most recent papers published in reputable journals and books.
2. FINANCIAL SOCIALIZATION OF CHILDREN

2.1 Consumer culture as motive for financial socialization

Postmodern consumerist society is characterized by satisfying instant wants, by communication of social status through the process of consumption and possession, shallow values (O’Shaughnessy and O’Shaughnessy, 2007) and high levels of materialism, all of which implies that materialist goods, and striving toward them in life, are held in highest regard (Goldsmith, Flynn and Clark, 2011; Segal and Podoshen, 2013). People with materialistic tendencies focus on owning and generating possessions in order to create the right image of themselves in the society (Kasser, 2002).

In a consumer-oriented society, the “the experience of the present becomes powerfully, overwhelmingly vivid and ‘material’ ... with heightened intensity, bearing a mysterious and oppressive charge of affect, glowing with hallucinatory energy” (Jameson, 1983, p. 120). That would not be a problem per se if the overwhelming perception of now did not backfire; the moment our senses calm down, the reality immediately seems unpleasant, dull and unattractive. That is the essence of the consumption mechanism embedded in our contemporary society.

Growing into adulthood is per se a demanding process of internalizing various attitudes and values of oneself and of the society. Children need to develop attitudes and beliefs about money; however, when this is done under a strong influence of consumerist culture, it might lead to problems. The most dangerous element of consumerism among children is the fact that consumerism carries a very tight psychological connotation between identity and ownership of goods (Dittmar, 2007). Certain aspects of consumerism are associated with poorer adolescent well-being (Sweeting, Hunt and Bhaskar, 2012). If children are inclined toward materialism, they have lower levels of perceived well-being (Schor, 2004; Cohen and Cohen, 1996) and engage in more anti-social activities (Cohen and Cohen, 1996; Kasser and Ryan, 1993).
2.1.1. Marketing aimed at children

Children are progressively being introduced as active citizens in consumer society, and their presence is of great market value (Alhabeeb, 2002). According to an estimate done in the USA, children aged 4 to 12 spend on average 250 dollars per year, which represents the total of 8.5 billion dollars from 34 million children in the US (McNeal, 1992). US income of children aged 8 to 12 grew by 15 percent annually during the 10-year period between 1990 and 1999, to 31.7 billion (Rice, 2001). Some estimate that children present an immensely lucrative sector of consumer society worth 130 billion dollars annually (Buckingham, 2000). There are more than 800 million children of the same age in the industrial world who make or actively influence purchases for their own needs and wants (McNeal and Yeh, 1997). Even if one decreases the average yearly spending due to less available income than in the US – the market potential is still more than attractive.

As marketing strategies targeted at children have increased over time, and children have gained more consumer power in terms of the money made available to them, as well as the influence they have over their parents (Calvert, 2008) at all ages, they are unequipped to defend their financial well-being. Even though it is both the children and the adults who are being targeted by marketing messages geared specifically to their needs, the effects on children are felt much more intensely, which in turn leads to buying (Mau et al, 2016).

It is important to note that, in recent years, commercial communication targeted at children has become increasingly refined, almost invisible, putting children at greater risks than ever before (Seiter, 2004). Advertising is being prominently integrated into film and TV content, mixing pleasure of entertainment with consumption, thereby creating a key mechanism for luring the young into consumer society (Bullen, 2009).

The perfidiousness of advertising targeted at children is a much more serious problem than advertising itself. For example, Disney’s Zootopia can be interpreted as a movie-long advertisement not only of products but of consumerist lifestyle as such (Fritz, 2020). There are many popular authors who blame marketers for using unacceptably subtle and even deceitful practices to lure children into the “consumption cycle” (Quart, 2003; Lin, 2004), calling it “the hostile takeover of childhood,” as they are caught up in a manipulative culture they cannot escape. Such perspective promotes the idea that children are in danger of consumerism and are completely helpless and powerless.

At the same time, there exists a radically different construct of children as consumers presented in many publications, predominantly of academic nature. They tend to define contemporary children as sophisticated, demand-
ing and hard-to-please, competent, sovereign consumers who are not easily manipulated and are skeptical about the information they receive from marketing initiatives (Buckingham, 2000, 2007). Such a view is, of course, in line with what marketers want to hear, and what they boast when defending their persuasive marketing practices, mainly advertising.

There has even been a new category of children called “tween,” from ages 8 to 14, a coherent commercial group (Cook and Kaiser, 2004). They are a digital generation who speak a new language, stress about growing up and perceive brands as more important because they make their lives more enjoyable (Lindstrom and Seybold, 2004). Marketing specialists who tailor campaigns to fit that “new” market segment (Hill, 2011) and to be as effective as possible are advised to avoid conventional advertising and turn to peer-to-peer marketing and viral marketing (Lindstrom and Seybold, 2004).

The lack of cognitive skills and advanced reasoning expertise makes children extremely vulnerable in the contemporary world revolving around material possessions and overconsumption. Expressions of materialism can primarily be suppressed by priming high self-esteem (Chaplin and John, 2007). Therefore, it is essential to teach the children that they are the creators of their own worlds and to provide them with adequate tools so that they can learn how to control their money and save for the future. Teaching children how to save should be a central focus of child consumer protection in the development of money-related self-esteem.

### 2.2 Definition and elements of financial socialization of children

Financial socialization of children originates from the perspective of their orientation toward consumer society (Lunt, 1996) and is considered a part of economic socialization. Consumer and financial socialization are elements of economic socialization (Alhabeeb, 2002) that is focused on the acquisition and use of economic concepts and functions related to consumption.

Financial socialization is not only competence but also an orientation toward consumer society; it is “... much more inclusive than learning to effectively function in the marketplace. It is the process of acquiring and developing values, attitudes, standards, norms, knowledge, and behaviors that contribute to the financial viability and well-being of the individual” (Danes, 1994, p. 128). In terms of young people, financial socialization is seen as the “processes by which young people acquire skills, knowledge, and attitudes relevant to their functioning as consumers in the marketplace” (Ward, 1974, p. 2).
It is considered a lifelong learning process of continuous adaptation and change:

*Socialization of the consumer is the process in which the individual constantly harmonizes himself or herself with the environment by learning or changing new attitudes, values, and current learning or changing new attitudes, values, and current norms* (Hayta, 2008, p. 167).

According to Ward, Wackman and Wartella (1977), financial socialization of children happens as they observe their parents’ behavior, as well as during their own engagement and interactions while shopping. In terms of theoretical frameworks, children are under the influence of a complex set of agents (parents, the media, peers, school) that influence the process of their financial socialization (Sohn et al, 2012). Parents have the most prominent role in that process and are crucial for the development of financial literacy and responsible consumption of children (Jorgensen and Savla, 2010; Sohn et al, 2012). Moreover, parents are considered the primary source of information in the process of financial learning (Van Camenhout, 2015).

Socialization of children as consumers is a process determined by individual as well as social factors, together with different learning mechanisms (Hayta, 2008.). Respectively, individual factors include socioeconomic elements, age and gender of the child; social factors comprise family, friends and peer influences, as well as education received through the formal education system, the media and cultural forces; learning mechanisms deal with cognitive development and the comprehension of social norms.

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**Figure 1**. Factors of socialization process of children as consumers

The concept of children as consumers did not even constitute a field of interest until the twentieth century, when a growing number of companies started to perceive them as target groups. Children participate in the market as consumers as they possess a certain purchasing power in the form of pocket money, or allowance, they receive. Due to the increased exposure of children to the media (TV, smartphones, social networks), they too have begun experiencing change in awareness in terms of materialism (Mau et al, 2016).

Because of the fact that the market has realized the profit potential of children as consumers, together with the development of technology and its influence on children, they need to be equipped with relevant knowledge and skills so that they can resist being absorbed by consumerist culture.

Cognitive development is the process by which children acquire conscious thought, memory, problem-solving and goal-setting skills, attention and inhibition control and intelligence (Best and Miller, 2010). Developmental changes affecting children in their social-cognitive development are relevant indicators of evolvement they experience as consumers – in terms of knowledge and understanding of products, buying, media and advertising (John, 1999).

There are three relevant developmental phases children go through (Buijzen, Van Reijmersdal and Owen, 2010):

- Early childhood (younger than 5 years old)
- Middle childhood (6–9 years old)
- Late childhood (10–12 years old).

In early childhood, children have very limited ability to perceive the world from someone else's perspective, which hinders their understanding of consumer society and the creation of wants.

By entering middle childhood, children learn how to view things from the perspectives of others and gain a personal understanding of commercial communication. Research shows that children make their first purchase decisions between the ages of six and eight (Mau et al, 2016). With pocket money or gifts they receive from others, the child is given certain autonomy to decide what and how they want to spend or save the money. From an early age, children are influenced by various factors in their environment concerning purchase decision-making. Entering late childhood means reaching a greater level of abstract thinking and discernment of the world around them, which gives the children a much broader perception of reality. At that age, they can simultaneously consider things from their own as well as from perspectives of others, and this is precisely the age at which they finally realize that they are being targeted through commercial messages that influence their purchasing attitudes and the perception of products and services (Rozendaal, Buijzen and Valkenburg, 2010).
2.3 Mechanisms and agents of financial socialization of children

Social learning theory affirms that environmental influences young adults come under throughout their lives shape their attitudes and knowledge (Bandura, 1986; John, 1999). Ward (1974) and Schuchardt et al (2009) emphasize the importance of social factors in the process of financial growing-up. In that context, they highlight the significance of financial socialization. Financial socialization, as explained in more detail in section 2.2, represents the process in which children gain and nurture values, attitudes, standards, norms, knowledge, and behaviors that contribute to their financial well-being (Sherraden, McBride and Beverly, 2010).

Financial socialization of children, and accordingly their financial education, are intensely affected by many social and environmental factors (Moschis, 1985; McNeal, 1987; Roland-Levy, 1990; Furnham and Argyle, 1998; Bodnar, 2005; Webley and Nyhus, 2006; Beutler and Dickson, 2008; Otto, 2009; Clark, Scafidi and Swinton, 2011), such as parents and other family members, teachers and experts, peers, practice and experience, exposure, media, culture, etc.

2.3.1. Parents as agents of financial socialization

Financial socialization happens in ordinary everyday family situations and interactions (Jorgensen and Savla, 2010), especially through the implicit creation of financial attitudes and capabilities (Alhabeeb, 1996). In the context of consumption, children are never fully autonomous when making decisions.

Parents and family, in general, are especially influential as factors affecting young children (Ward, 1974; Kourilsky, 1977; Rettig, 1985; Moschis, 1985; Rettig and Mortenson, 1986; Danes, 1994; Clarke et al, 2005; Schuchardt et al, 2009.). Since it is the parents who have the most influence in children's lives, as they mature, the parents' financial knowledge, as well as their attitudes influence the financial knowledge and attitudes of children and young adults toward money. Very early in their lives they start monitoring their parents as they do the shopping, and they start acquiring new models of behavior through imitation. They tend to reproduce what they have learned by observation of their environment, which then becomes a social behavioral pattern.

Their decisions are shaped by the consumer choices their parents make (Ironico, 2012). It is the family through which the child develops moral, intellectual, physical, and work attitudes, determining how the child will understand him or herself and the environment. Parenting traits and actions are instilled in
the child’s overall behavior. Science has confirmed a strong influence of parents on financial attitudes and behavior of children (Beutler and Dickson, 2008). Parents influence children's financial literacy and economic socialization more than formal schooling (Shim et al., 2009, 2010) through diverse styles of parenting, such as going shopping with children, the ways in which they discuss finances, as well as other types of communication (Kim, Yang, and Lee, 2015).

According to Leiser and Ganin (1996), there are two basic approaches in parenting to the socialization of children as consumers. The first one refers to parents who seek to protect their children from concerns, but also from responsibilities of finances. This kind of parenting keeps the children away from conversations that have to do with finances and spending. In contrast, the other approach arises from the desire to teach the children as much as possible about finances in order to prepare them for the time when they will be expected to make their own right decisions about spending and saving. This type of parenting finds it extremely important for the children to gain as much knowledge about money management and saving strategies as possible, but also to understand the value of money. In line with that, there are numerous parental teaching strategies that could be used in order to reinforce the propensity to save in children (Bucciol and Veronesi, 2014): giving pocket money; controlling money usage; giving advice about saving and giving advice on budgeting.

Communication between parents and children is extremely important; it influences the children's acquisition of knowledge, skills, and behaviors about what are desirable consumer habits. Reduced communication therefore enhances the impact of other social factors on the socialization of children (Hayta, 2008). Interestingly, in modern families, children's opinions, and participation in decision-making processes are encouraged and taken seriously. Patterns who uphold contemporary approaches to child-rearing indicate that parent-children relationships are based on negotiation rather than authority (Valkenburg, 2000), making children more emancipated than ever (Gunter and Furnham, 1998).

Moreover, it is important to note that even within families who promote positive attitudes toward saving, without the adequate levels of self-efficacy (the belief that one is capable of saving) the children will not save (Bandura, 1977). Such findings indicate the need for building self-confidence of children so that they can be in control of their own destinies. However, not every family is the same, socially or financially. Each family chooses their own priorities although it is evident from all protocol guidelines that child-orientedness is highly recommended.
Chowa and Despard’s (2014) research indicated that parental financial socialization serves as a strong and consistent predictor of the financial behavior of youth. Yet, the ongoing problem remains: many parents do not possess the required financial knowledge and skills themselves (Moschis, 1985) to be able to provide quality financial education for their children. This is not surprising since most studies indicate a low level of financial literacy among many adults (OECD, 2016; CNB, 2015). TIAA-CREF Institute’s 2001 Youth and Money Survey found that 94% of young adults turned to their parents for financial education, yet the parents did not prove to be the best financial educators for their children, nor did they think it was their responsibility to educate their children about finances.

It has been proved that financial literacy levels of children can be accounted for by the financial socialization of their parents, as well as the knowledge and skills developed through education (Grohmann, Kouwenberg and Menkhoff, 2015). Children whose parents provide learning opportunities in the context of money exhibit more desirable financial behavior compared to the children whose parents failed to do so. The same results were obtained by John (1999), and Clarke et al (2005). Skills and attitudes related to saving originate indirectly from parental behaviors, which lead to higher self-efficacy beliefs, better self-control strategies and more independent economic behavior in general (Otto, 2013). In terms of saving, parents make their children aware of saving benefits through engagement and by providing examples themselves. “So if parents have a bank account, smoke or often impulse buy and have difficulty in controlling their expenditure, they are modelling these behaviors for their children.” (Webley and Nyhus, 2006, pg. 145).

Parental teaching has positive effects on the future orientation of children in terms of saving and on saving rates of young people (Webley and Nyhus, 2006, 2013; Bucciol and Veronesi, 2014). Parents can educate their children about saving from very early ages, for instance, by playing a game of collecting coins in a piggy bank. With time, children begin to realize that money has value and that they can buy something they want, but do not have access to on a daily basis (like cinema or ice-cream). However, Rendon and Kranz (1992) advise children to keep any amount under a hundred dollars at home. “A piggy bank, a money box, a special hiding place in a desk or dresser drawer, or some other private place could be a good place to keep your savings. However, be sure that you really have chosen a safe place.” (p. 91). They argue that money which is relatively unreachable helps children save.

Many authors emphasize the importance of parental modelling in the context of delayed gratification. This assumption was also tested in controlled laboratory setting. Children were exposed to live and figurative models using written behavioral descriptions and then their behavior and behavioral
change were observed. Children exposed to models that showed preferences for delayed rewards transformed their delay-of-gratification behavior in favor of delay-reward behavior, whereas the children who were exposed to the model presenting immediate reward preferences changed their conduct in favor of immediate-reward behavior (Bandura and Mischel, 1965, cited in Webley and Nyhus, 2005). Mauro and Harris (2000) also investigated the role of parenting in delay-of-gratification behavior. They conducted a survey on four-year-old children and found that the mothers of children who did not delay gratification used teaching techniques that were in line with a permissive parenting style. Furthermore, Seginer, Vermulst and Shoyer (2004) studied the relationship between parenting styles and teenagers’ motivation to be involved in planning for the future, the cognitive representation of the future, and future-related behaviors. Their findings suggest that perceived autonomous-accepting parenting is connected to future orientation indirectly via self-evaluation; that self-evaluation is associated directly only to the motivational component, and that the motivational component is linked directly to the cognitive representation and behavioral links; and also indirectly, via the cognitive representation component, to the behavioral component.

Together with allowance, or pocket money, it is also convenient to reward children for performing tasks, or chores, such as housework. By receiving pocket money, a child can learn how to save money, and realize that the so-called “spend it now” rule is worthless if they know that there will be no more money for later needs. Davis and Taylor (1979) advocate that children as young as 6 or 7 should be stimulated to engage in saving behavior for a relatively inexpensive item (e.g. a toy) that may be bought within several weeks. They reason that children especially should be educated to save for rainy days, to recognize lucrative opportunities, and to understand the concept of interest. They conclude that engaging in saving behavior will also encourage children to learn more about various investment and saving products, as well as the conditions and risks involved in borrowing money.

2.3.2. Peer influence

The influence of peers, or friends, is also an important social factor in socialization that contributes to the effective education of children about responsible consumption. Even though family is most prominently investigated as the main agent of financial socialization of children, peers appear to have a very relevant influence through childhood and adolescence as well (Hawkins and Coney, 1974; Moschis and Churchill, 1978). In comparison to the research done on the influence of family in the process of consumer socialization,
Peer influence is almost neglected, with very limited research available on the topic (John, 1999).

Peers are significant agents of financial socialization in early teenage years (10-14) (Bachmann, John and Rao, 1993; Mandrik, Fern and Bao, 2005), and their relevance rises as the influence of family decreases (Moschis and Churchill, 1978). Furthermore, their influence is at its strongest among children and adolescents who are brought up in unstable families with weak communication patterns (John, 1999).

Peer influence is evident in the process of sharing information about products and brands, thereby shaping attitudes and beliefs (Hayta, 2008). For example, high school students report higher levels of skepticism toward advertising if they turn to peers as additional sources of information (Mangleburg and Bristol, 1998). Interestingly, discussions about advertising act as tools of social interaction among peers in high school (Ritson and Elliott, 1999).

Proneness to materialism also appears to be related to peer influence (Flouri, 1999), and it is higher in children who communicate more with their peers (Moschis and Churchill, 1978). That is most probably intensified by the peer pressure children experience regarding popular brands (Dotson and Hyatt, 2005) as they develop consciousness of the social value of products (Lachance, Beaudoin and Robitaille, 2003).

### 2.3.3. Teacher influence

Teaching is a common mechanism assumed to operate within financial education programs directed at children. According to Social learning theory (Bandura and Walters, 1963), children learn by observing and imitating their most revered role-models. Predominantly, the primary educators of children are the parents themselves. However, teachers are the second most influential source of educating children.

Research suggests that effective financial education requires and depends on well-trained professionals (Bosshardt and Watts, 1990; Marlin, 1991; Lucey and Giannangelo, 2006). Programs implemented in elementary schools have the capacity to augment positive or counteract potentially poor influences other social and environmental factors might have (especially inadequately financially literate parents and family members) on children. The necessary prerequisite is that the person providing financial education be a trained expert, financially literate him or herself, or the end result might be the same as in the case with parents.
Financial literacy and competence among educators vary significantly, which may result in different outcomes in terms of the effectiveness of financial education programs (Walstad, 1979; McCormick, 2009; Way and Holden, 2009). Sosin, Dick and Reiser (1997) found that elementary and middle school teachers with graduate-level teaching finance and economics degrees reported a significant increase in the level of confidence in teaching economics. Similarly, McCormick (2009) reported that even basic financial literacy training can have a positive impact on the teachers’ capacity to teach financial content. Smith, Sharp and Campbell (2011) confirmed the importance of the teachers’ financial literacy and competence in the context of the effectiveness of financial education. Their study showed that the children’s financial literacy test scores varied significantly depending on the teacher (Collins and Odders-White, 2015).
As explained before, childhood is no longer seen as the period of life protected from money and economics (VanFossen, 2003). Young children are mainly focused on the present (Otto, 2013) and continuously induced toward more consumption and material possession (Good, 2007; Richins and Dawson, 1992) without being equipped with adequate mechanisms to fight the marketing stimuli. In terms of disposable income necessary for saving, for young children it is their pocket money and birthday money (Webley and Plaisier, 1998), which they start receiving as early as the age of six (Furnham, 2001).

3.1 Definition of saving

In today’s world of instability and constant change, the concept of savings has reached an unprecedented level of importance. In economics, “savings is the amount that is left after spending. In banking, savings refers to savings accounts, which are short-term, interest-bearing deposits with a bank or other financial institution” (Merriam-Webster, 2019).

Saving represents the ability to delay gratification that is connected to the concept of self-control; it is defined as an activity of reduced consumption or as the money accumulated over time as a result of voluntary deferred spending (Collin, 2006, p. 364; Gramlich, 2016, pp. 1048-1049; Barbić and Lučić, 2019, pp. 105-108). Saving is an investment in safety, the future, and the enhancement of mental health (Kan and Laurie, 2011).

Therefore, in terms of managing personal finances, savings refers to the amount of money that is not spent but rather preserved for future use: for future needs (such as emergency savings or retirement funds), for capital purchases (buying a house or car) or providing money for someone else – like children.

Usually, the money is deposited in a savings account in a bank, which pays interest (CNB, 2019). Moreover, saving refers to the “art of spending,” wise and
A rational approach to managing money that resides in solid understanding of the consumerist world, of oneself as a consumer and the real wants and needs of the individual.

People who do not save, in the event of an emergency, reach out for loans at high interest rates and are obligated to repay them for years. Savings benefit not only households, but also the entire country, as they provide the basis for long-term investment and infrastructure development and contribute to economic growth (Blades and Sturm, 1982). Savings also act as a safeguard against economic downturns and financial crises (Mahdzan and Tabiani, 2013).

In spite of that, research suggests that people do not save enough, or do not save at all. In the euro area, 6.1% of disposable income of households is kept as savings, and in the US, it is only 4.9% (OECD, 2015, p. 53). Financial spontaneity in spending, and therefore the lack of savings, result from various factors that are observed worldwide. Papers direct toward the following factors as contributors to sub-optimal levels of saving(s): lack of knowledge and skills (Lusardi, 2004; Lusardi and Mitchell, 2011; Mahdzan and Tabiani, 2013; Van Rooij, Lusardi and Alessie, 2011, 2012), proneness to procrastination (Loewenstein and Prelec, 1992; Frederick, Loewenstein and O’Donoghue, 2002), cognitive deficits (Banks, 2010; Banks, O’Dea and Oldfield, 2010), lack of access to financial products and institutions (Ssewamala and Sherraden, 2004; Han and Sherraden, 2009; Schreiner and Sherraden, 2007), or the lack of self-control and self-efficacy (Thaler and Shefrin, 1981; Ameriks et al, 2007; Bucciol, 2012; Bucciol and Veronesi, 2014).

Consumers with larger incomes save more and increase saving when their disposable incomes increase or when faced with insecurity (Fisher and Anong, 2012). Saving behavior is determined by two elements: the possibility to save and the willingness to save (Katona, 1975; Otto, 2013). Saving opportunities are determined by numerous factors such as consumer lifecycle, household size, levels of income, etc. According to Modigliani’s (1986) lifecycle theory, people save during their working life in order to ensure the desired lifestyle in retirement (Lewis and Messy, 2012). Consequently, younger people who have not yet entered the workforce have fewer tendencies to save. On the other hand, the willingness to save is determined by psychological factors such as attitudes, self-efficacy, self-control, proneness to materialism, etc.

Attitudes toward saving include a diverse set of beliefs that influence the perceived benefits of saving; and if not predominantly positive, they can be reinforced by financial education as well as pressure by family and friends (Gerhard, Gladstone and Hoffmann, 2018). They play a vital role, as changing the attitudes on saving goals can increase or decrease actual saving (Ulku-men and Cheema, 2011). Teaching children how to save by influencing their
attitudes toward saving is the first step in the process of responsible financial consumption behavior among adults. With time, children realize that they can buy more with the money they saved; in most cases, it is a toy that they want. By engaging in saving behavior, they are given the opportunity to be responsible, to have the freedom to make decisions, to gain different experiences and thus financial knowledge.

Self-efficacy, also known as mastery, was initially broadly defined as “... the extent to which one regards one’s life-chances as being under one’s own control in contrast to being fatalistically ruled” (Pearlin and Schooler, 1978). Self-efficacy is one of the most important determinants of an action as it influences one’s thought processes, emotional reactions, and preparations for behavior (Bandura, 1986). It was also empirically shown to be one of the crucial variables determining saving behavior (Otto, 2009). Without appropriate levels of self-efficacy (the belief that they are capable of saving), children will probably not save (Bandura, 1997). Therefore, if we want to influence the children’s future saving behaviors, it might be crucial to change their self-efficacy in saving. Financial education was shown to be an effective way to achieve those goals (Danes and Haberman, 2007).

3.2 Development of children’s ability to save

With time, children come to realize that they can buy more with their money saved; in most cases, it is a toy they want. Children, at a very young age, are able to recognize saving as a socially desirable behavior (Ward, Wackman and Wartella, 1977, cited in Friedline, 2012). Later, around the age of 12, they start to develop an actual ability to save (Webley, Levine and Lewis, 1991, cited in Friedline, 2012). Children over the age of 12 recognize savings accounts as means of achieving short- and long-term saving goals and prefer to use them to achieve their goals. In the context of making saving decisions, they implement the knowledge gained in the context of austerity into their behavior, use more sophisticated austerity techniques, but also save for significantly longer periods of time than younger children do. In other words, they save for months or years (Friedline, 2015).
Table 1. Summary of developmental gains in children’s capabilities to save

<table>
<thead>
<tr>
<th>Age 5 or 6</th>
<th>Age 8 or 9</th>
<th>Age 11 or 12 and beyond</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Savings account</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asks seemingly illogical questions about the savings account, like its color</td>
<td>Gains an understanding of a savings account’s abstract characteristics</td>
<td>Recognizes a savings account can be used to achieve shorter- and longer-term goals</td>
</tr>
<tr>
<td>Thinks depositing money into the savings account is like losing money</td>
<td>Recognizes a savings account can help achieve saving goals</td>
<td>Prefers using a savings account to achieve goals</td>
</tr>
<tr>
<td><strong>Saving behavior</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Articulates the importance or virtue and benefits of saving</td>
<td>Develops a preference for saving over spending</td>
<td>Integrates economic knowledge with saving behavior</td>
</tr>
<tr>
<td>Develops rudimentary saving strategies</td>
<td>Improves saving strategies</td>
<td>Uses sophisticated saving strategies</td>
</tr>
<tr>
<td>Saves for shorter-term goals (e.g. days, weeks)</td>
<td>Saves for increasingly longer amounts of time (e.g. weeks, months)</td>
<td>Saves for longer-term goals (e.g. months, years)</td>
</tr>
</tbody>
</table>


By engaging in saving themselves, they are given the opportunity to be responsible, to have the freedom to make decisions, to have different experiences and gain financial knowledge. By learning how to save and what the benefits of saving are, children begin to understand such concepts as self-control and planning, as well as self-worth (Davis and Taylor, 1979).

Captivatingly, it has been proved that the perceived importance of the parents and peers’ attitudes, as well as access to money, increase children’s involvement in saving (Te’eni-Harari, 2016). A study done on Swedish twins (aged 20-65) suggested that genetic differences accounted for 33% of the variation in propensity to save but environmental factors during one’s childhood were found to moderate the genetic effects (Cronqvist and Siegel, 2015). The importance of saving is also reflected in the fact that, if children start saving from an early age, they will continue to save as adults (Brown and Taylor, 2016).

Bernheim, Garrett and Maki (2001) found that people who were encouraged to save using a bank account when they were children saved more than others in their adult lives. Bodnar (1997) also emphasized the importance of
banks, especially those aimed specifically at the young. She found the average saving customer of the Young Americans Bank is 9 years old and has a balance of 450 dollars. She suggested three approaches to encouraging children to save: (1) advising children to divide their allowance into three piles (spending, saving and charity); (2) introducing a “50:50” method, where half of all money is saved, and the other half is spent, or (3) the easier “spare change” method, where only notes are spent and coins are saved (or the other way around). “To raise a generation of super savers, give them a reason to save. To keep them interested, reward them for their efforts. To guarantee their success, devise a system that makes saving easy.” (p. 75).

3.3 Children’s income

As children do not earn money but receive it from parents and relatives, it is usually referred to as allowance and is considered to be an instrument of children’s financial socialization and education (Furnham and Kirkcaldy, 2000). Regular income of children consists of four different types: (1) small amounts of money given frequently from parents on an “as-needed” basis, (2) an allowance – periodic distribution of money to children with usually no specific conditions attached, (3) money gifts, and (4) money that is the result of household chores (above age 11) (McNeal and Yeh, 1997).

According to Marshall and Magruder (1960), children who receive allowance show more knowledgeability about money. Abramovitch, Freedman and Pliner (1991) examined children’s spending experiences. Children aged 6, 8 and 10 were given 4 dollars, either in the form of a credit card or in cash, to spend in an experimental toy store which offered toys priced from 50 cents to 5 dollars. They were given an opportunity to spend all their money or to take the money home with a purpose of creating savings. Their research findings revealed that children who received an allowance spent roughly equal amounts in cash and credit card. However, children who did not receive an allowance spent considerably more with credit cards (2.82 dollars) than they did with cash (1.76 dollars). The children were also given a pricing test in which they had to say how much familiar items (e.g. running shoes, television sets) cost. Children who received an allowance demonstrated better knowledge when compared to those who did not receive allowance. Their results suggest that receiving an allowance may improve the development of children’s monetary capacity.

A study done in China (McNeal and Yeh, 1997) on a sample of 870 children aged 4-12 reveals that 40% of income represents small regular amounts from parents; 32% is allowance; 22% consists of money gifts and only 3% results
from household chores. It is important to note that, according to the study, all children over the age of 9 have some regular income (McNeal and Yeh, 1997). Furnham and Argyle (1998) claim that the children’s income, which is intended for their own consumption, is growing. British children aged 5-9 receive an average of 3 pounds a day, whereas in Germany the total average yearly income of children aged 7 to 15 grew from 19 billion deutschmarks in 1988 to 82 billion in 1998.

3.4 Children’s saving and spending motives and behavior

Children can have different saving strategies, such as: saving without the intention to spend; saving until the goal has been reached and then spend; saving but spend only partially; saving by forgetting about money and saving in a “bank” in order to resist temptation (Otto, 2009).

Children and young people’s styles in spending and saving can be divided into three main categories: (1) distinguished savers who save money for future purposes such as university education, (2) necessity spenders who use money for school supplies and for support of their families, and (3) discretionary spenders who predominantly use money for clothes, everyday expenses, dating, etc. (Pritchard, Myers and Cassidy, 1989).

While there is extensive research into saving behavior of adults and their motives to engage in saving, predominantly researched under the Theory of consumption (Keynes, 1936; Duesenberry, 1948; Modigliani and Brumberg, 1954), there is substantially less research on saving behavior of children that might cover such questions as: Why do children save? Where do children save? Are their saving habits simply a result of parental requests and their influence, or other factor matter as well? Does having an allowance make any difference and do the children who receive allowance save more? To what extent is the children’s saving behavior influenced by demographic variables such as age and gender?

According to one comprehensive study conducted in the UK, 43% of children save in order to buy things; 35% save and do not spend; and 22% of them spend instantly (Brown and Taylor, 2016). In terms of differences relative to age and gender for British children between 11 and 16, the study reveals that males receive more pocket money and presents than do females, and older children more so than younger children (Furnham, 1999).

In Furnham’s study (1999), 67.1% of children said they saved, 28% of them tried to save a half of their income, whereas 21.3% tried to save 75% of the
money they received. In terms of their saving motives, most of them indicated that they saved for something special (71.1%); because their parents told them to (25.9%); for a holiday (18.9%); or simply to have money (52.9%). In terms of categories on which they spent the most, the following were the most substantial: sweets, chocolate, ice-cream 81.8%; comics, magazines 57.1%; books 24.4%; soft drinks 61.8%; clothes and footwear 44.7%; and cinema 37.1%.

Moreover, Chinese children aged 12 saved 51% of their income, and those aged 11 spent 57%, while children of 10 years of age saved 63% of their income (McNeal and Yeh, 1997). Interestingly, 11- and 12-year-old boys spent significantly more than did the girls (McNeal and Yeh, 1997). In Chile, the results indicated that children of ages 10-14 constantly received money (62.7%) as presents, awards for good behavior, as earnings for household chores and other activities (Denegri Coria et al, 2008). This applied predominantly to short-term goals, notably for children of lower socioeconomic levels (62%), as well as bank savings (59%).

When saving is further discussed, demographic variables such as age and gender should also be taken into account. Sonuga-Barke and Webley (1993) concluded that children's financial behavior and understanding of saving develop within the social group, aided by various institutional and social factors. They believe that age is one of the most influential factors, where older children save more, and the tendency to save increases with age. However, they do not provide conclusive results on the reasons why that happens. Furnham (1999) suggested that age might be the most powerful predictor of saving. Older children receive and save more money, spend their money on different items and are generally more interested in banking, saving and business when compared to younger children. Most relevant studies in the area have demonstrated the effect of age differences particularly around the time of starting secondary school (Furnham and Thomas, 1984a, 1984b).

Furnham and Thomas (1984a) investigated 7±12-year-old children, and found little evidence of gender differences, but recorded abundant age differences. On average, older children received more money, saved more, and were more likely to shop than were younger children.

Furthermore, Mortimer and Shanahan (1994) found that boys on average received higher allowances and more birthday money compared to girls. Also, it appears that boys tended to receive approximately 20% more money than did girls, although the reason for this remains unclear. One possible explanation is that parents permit boys to take part-time jobs earlier than they do girls; or that they pay boys more for gender-related household chores than they do girls (Mortimer and Shanahan, 1994). Their results are in accordance with previous national surveys conducted in the US, which showed that girls
received lower allowances and less odd job money than boys did (Wall's monitor, 1996). Bowes and Goodnow (1996) also found that older children received more money from allowance, part-time jobs, Christmas and birthday presents, etc. Older children were also more invested in various types of economic activities: they saved more, engaged more in banking activities, and spent their money differently on different things (Furnham and Argyle, 1998).

An exploration into the determinants of saving behavior of British children aged 11 to 15 indicates that the likelihood of saving is negatively associated with allowance but positively associated with the money they earn from part-time jobs (Brown and Taylor, 2016). The same study notes that the parents’ saving behavior does not influence the behavior of children but rather saving during childhood exerts a large positive influence both on the likelihood of saving on a monthly basis and the amount saved in adult life, thus confirming the importance of developing saving habits at an early age. The best predictor of saving was that, the more money they received, the less they spent in the week before, as well as the total amount of money saved in the previous week (Furnham, 1999).

A research study in Canada that investigated the predictors of saving behavior of young people aged 12-24 revealed that individuals identified as adult- or achievement-oriented were more likely to save money (Erskine et al, 2006). Moreover, the study showed that workers, regardless of whether they were students or not, were more likely to save for the future.

3.5 Application of the Theory of planned behavior in saving

The Theory of planned behavior (TPB) is a theory designed to explain and predict human behavior in specific contexts (Ajzen, 1991). In its most basic form, it argues that the intention to perform certain behaviors is guided by three considerations: beliefs about the likely consequences or other attributes of the behavior (behavioral beliefs), beliefs about the normative expectations of other people (normative beliefs) and beliefs about whether or not one has control over the behavior, and whether or not one is capable of performing the behavior (control beliefs). The three different beliefs underpin the most proximate determinants of the intention to act, namely attitudes toward the behavior, subjective norms regarding the behavior and perceived behavioral control over the behavior. Specifically, behavioral beliefs produce favorable or unfavorable attitudes toward the behavior; normative beliefs produce perceived social pressure or subjective norms; and control beliefs result in
perceived behavioral control (Ajzen, 2002). In general, the more favorable the attitude and subjective norms with respect to behavior and the greater the perceived behavioral control, the stronger the individual’s intention to perform the behavior under consideration will be (Ajzen, 1991).

3.5.1. Overview of the Theory of planned behavior

In essence, the theory presumes that different types of beliefs regarding a specific behavior influence that behavior, yet influence is not exerted immediately but through several steps. Namely, beliefs are the antecedents of attitudes, subjective norms, and perceived behavioral control, and those three combined, in turn, are the main determinants of behavioral intention. Finally, the intention to perform behavior is the main determinant of actual subsequent behavior, however not the only one. Perceived behavioral control, apart from influencing behavior indirectly through intention, is also posited to have direct effect on behavior. The schematic representation of the Theory of planned behavior is shown in Figure 2.

![Figure 2. Schematic representation of relationships between constructs of the Theory of planned behavior](image)

As stated before, attitudes toward specific behaviors are underpinned by behavioral beliefs. Each behavioral belief links a given behavior to a certain outcome or to some other attribute such as the cost incurred in performing the behavior. The attitude toward the behavior is directly determined by the strength of such associations. According to Fishbein and Ajzen’s 1975 Expectancy-value model, the stronger the subjective value of a believed outcome of the behavior, the stronger will be the attitude toward that behavior. In simple terms, stronger beliefs that performing behavior will bring about posi-
tive outcomes strengthen and reinforce positive attitudes toward performing that behavior.

Similarly, the strength of the subjective norm is directly proportional to the strength of normative beliefs that specific individuals or groups, to whom individuals are motivated to conform, will approve or disapprove of the behavior. The stronger and more salient the beliefs that significant others would approve of target behaviors, the stronger the subjective norms. Finally, perceived behavioral control is influenced by salient beliefs concerning adequate resources, opportunities or anticipated obstacles and impediments in performing specific behaviors. If a person estimates that he or she possesses adequate resources to perform a behavior at hand and that there are no major obstacles to it, he or she will have greater perceived behavioral control (Armitage and Conner, 2010).

When formed from different types of beliefs, attitudes, subjective norms and perceived behavioral control are deemed to be the main determinants of the intention to perform a behavior, and thus indirectly of the behavior itself. However, research has shown that these constructs exert their influence on the behavior more efficiently when certain conditions are met. For example, attitudes become more reliable as predictors of behavior when they are easily activated from memory and when they are stable. The main factors that influence recall and stability of attitudes are experience and personal involvement with an object of attitude, motivation to think about the object of attitude and the nature of information a person possesses about the object. Specifically, when an attitude is more easily accessed from memory, based on direct, personal experience with the object of attitude, and hence more stable, as well as when the information people possess about the object is one-sided or homogeneous, the attitude will exert greater influence on behavioral intention and subsequent behavior (Glasman and Albarracin, 2006; Kraus, 1995).

Subjective norms exert their influence on behavior differently to an extent, depending on the type of normative beliefs. Specifically, one can distinguish between an injunctive and descriptive social norm. While injunctive social norms refer to the perception of what others believe to be appropriate conduct, descriptive social norms refer to the perception of what most others actually do (Cialdini, 2007).

Although the two types of norms are often related in practice, they are conceptually significantly different, and influence the people’s cognition and behaviors differently. Specifically, injunctive social norms motivate people’s behaviors through social evaluation (i.e. people will be motivated to perform behaviors of which others, whose opinions they value, will approve), while descriptive social norms instigate behavior through social information (i.e.
people view behaviors that many people perform as adaptive and proper in specific situations, and are thus motivated to perform them themselves. An important factor that moderates the effects of norms on behavior is saliency. In other words, if a subjective social norm is to influence one’s intention to perform a behavior, as well as the behavior itself, it is salient, i.e. easily accessible at the time of the behavioral act (Cialdini, Reno and Kallgren, 1990; Croy, Gerrans and Speelman, 2010).

As mentioned before, perceived behavioral control is conceptualized relatively differently than the other two constructs within the TPB. Namely, perceived control is considered to influence behavior both indirectly, through intention – which might be likened to the other two determinants – but also directly.

The introduction of perceived behavioral control as a determinant of both intention and behavior is precisely what differentiates the TPB from the earlier Theory of reasoned action (TRA; Sheppard, Hartwick and Warshaw, 1988). The TRA presumes that the intention to perform an action will be a direct consequence of one’s attitude toward an action and social norm regarding that action. That is why the theory does not deal with different levels of control a person can have over a behavior or the ways in which that could influence his or her intentions to perform the behavior. Therefore, while the TRA is well-equipped to explain behaviors over which a person has complete volitional control, it is unsuited for interpreting behaviors which are not completely under a person’s control (Ajzen, 1991).

As most real-life behaviors are never under a person’s complete control, whether that might refer to going to the gym, starting a diet or saving for the future, the TPB introduces a perceived behavioral control as an important variable that predicts intentions to perform a behavior, as well as the actual performance over and above attitudes and social norms. Given that many people recognize that they often lack the willpower, knowledge, skills, or opportunities to perform certain behaviors, it does not surprise that perceived behavioral control often exerts significant predictive power over the other TPB variables (Madden, Ellen and Ajzen, 1992).

According to Ajzen (1991), perceived behavioral control is a construct quite similar to Bandura’s (1982) conception of self-efficacy. Self-efficacy, rather similarly to perceived behavioral control, refers to an individual's perception of how well he or she is able to carry out different actions required to manage different situations. Perception can influence one’s thought processes, emotional reactions, or preparation for behaviors, which can affect the strength of the intention to perform the behavior (Bandura, 1982, 1991). However, it can also affect the behavior directly, at least in two ways. Firstly, with increased perceived behavioral control the effort to perform behavior
successfully will also probably increase, independently of the intention. Secondly, perceived behavioral control is often a suitable intermediary in actual control over behavior, thus successfully predicting it as long as it is realistic and resembles the real, objective control over the situation (Ajzen, 1991).

3.5.2. Criticism of the Theory of planned behavior

Despite its prevalence and popularity, the TPB has its critics. Famously, Sniehotta, Presseau and Araújo-Soares (2014) claimed that it was “time to retire the theory of planned behavior.” In their article, they listed a number of serious critiques of the TPB. Namely, the theory was criticized for its exclusive focus on rational reasoning, for the exclusion of unconscious influences on behavior and the role of emotions, having a limited predictive validity for behaviors, resting on false assumptions, such as the one that intention always mediates the relation between beliefs and behaviors, and excluding important variables that significantly predict behavior over intentions, such as habit strength, self-determination, anticipated regret or skills planning. Although those critiques do have certain merit to them, they are probably too severe.

As several other authors have noted, the theory could be improved and expanded to include more variables predictive of behavior (Conner, 2015; Conner and Armitage, 1998), but certainly does not need to be retired. The theory, as will be shown shortly, predicts, favorably and substantially, a wide range of behaviors, and has been used in many interventions that successfully manipulated the determinants of behavior (attitudes, norms, perceived behavioral control and intentions), in that way influencing the behavior itself.

For example, in their meta-analysis of the 47 studies that manipulated intention in order to change behavior, Webb and Sheeran (2006) found that a moderate to big change in intentions to perform behavior actually influenced the performance of the behavior, and the impact of the effect was moderate. Similarly, Maki et al (2013) conducted a meta-analysis to investigate whether the interventions that changed attitudes, norms and perceived behavioral control succeeded in changing the intention to perform the behavior, as well as the actual behavior. They found that elicited changes in attitudes, norms and perceived behavioral control managed to change the intentions and the actual behavior, with effects being stronger for intentions than they were for behavior. The results cast very favorable light on the merit of the TPB. The fact that intentions are imperfect predictors of actual behavior is well-known due to a lack of self-regulatory mechanisms, knowledge or opportunities to actually perform the behavior by most people, despite favorable intentions to do so (this is known as the intention-behavior gap). For example, Sheeran’s
meta-analysis (2002) showed that intentions account for an average of 28% of the variance in prospective behavior despite the fact that there were ways to bridge the gap by devising specific plans concerning when, where and how to perform the behavior (Bélanger-Gravel, Godin and Amireault, 2013; Sniehotta, Scholz and Schwarzer, 2005). In this light, the fact that one’s behavior can be altered by targeting the interventions toward changing the beliefs, attitudes, norms, or intentions attests to the validity and practical usefulness of the TPB.

3.5.3. Application of the Theory of planned behavior

The TPB has been previously utilized to explain and predict a remarkably large spectrum of behaviors. For example, it has been used to predict condom use (Albarracin et al, 2001), physical activity (Dzewaltowski, Noble and Shaw, 1990; Hagger, Chatzisarantis and Biddle, 2002), various health-related behaviors (Conner and Sparks, 2005; Godin and Kok, 1996), healthy eating (Conner, Norman and Bell, 2002), smoking cessation (Norman, Conner and Bell, 1999), leisure choices (Ajzen and Driver, 1992), dishonest actions and unethical behaviors (Beck and Ajzen, 1991; Chang, 1998), entrepreneurial intentions (Krueger and Carsrud, 1993), electronic commerce adoption (Pavlou and Fygenson, 2006), to name but a few. Not only has it been used as a model for a wide range of behaviors, it has actually been proved as highly valid and predictive of those behaviors. For example, in one of the first summaries and meta-analyses of TPB results, Ajzen (1991) calculated that, across different types of behaviors, attitudes, subjective norms and perceived behavioral control accounted for approximately 50% of the variance in intentions. Although the effects were understandably less powerful for actual behaviors, the intentions and perceived behavioral control accounted for a substantial average of 25% of the variance in behavior (Ajzen, 1991).

After the first one, many more meta-analyses confirmed the usefulness and predictive validity of the theory in explaining different behaviors. For example, Cheung and Chan (2000) also found TPB’s constructs to be highly predictive of intention, explaining an average of 39% of the variance. The effect on behavior was again diminished, but nevertheless substantial, with intentions and perceived control accounting for 23% of the variance in behavior. Perhaps the best-known and most widely cited is the meta-analysis conducted by Armitage and Conner (2001). Their meta-analysis, including 185 independent studies, showed that behavioral intention and perceived behavioral control accounted for 27% of the variance in behavior and that attitudes, subjective norms and perceived behavioral control accounted for 39% of the variance in behavioral intentions. When observing the three predictors of be-
havioral intention individually, subjective norms had the least significant effect of the three, while attitudes had the most significant effect. A plethora of additional meta-analyses focused on more specific types of behaviors, also showing great validity of the theory. For example, the constructs of the TPB explained substantial amounts of the variance in intentions to perform different health-related behaviors (41%) and actual behaviors (34%; Godin and Kok, 1996), in pro-environmental behavioral intentions (52%) and pro-environmental behaviors (27%), or in intentions to be physically active (44.5%) and actually being physically active (27.4%).

The TPB has also been applied to explain different financial behaviors, which refer to any behavior pertinent to money management, such as cash, credit or savings behavior (Xiao, 2008), and the influence on responsible financial consumption behavior (Barbić, Lučić and Chen, 2019). TPB’s constructs have been proved to be highly predictive of such behaviors, too. For example, in an earlier research effort across three studies, East (1993) found that as much as 67% of the variance in application for shares was explained by intentions toward behavior and perceived behavioral control, and up to 50% of the variance in intentions was explained by attitudes, subjective norms and perceived behavioral control. Later studies confirmed the validity of the TPB in financial behaviors. Shim et al (2009) showed that the three TPB predictors accounted for 40% of the variance in the intention to perform three financial behaviors, namely spending within budget, paying credit card balances in full and saving for the future. Similar results were found in Cuccinelli, Gandolfi and Soana’s 2016 study, in which 47% of the variance in customers’ intentions to apply for medium or high-risk financial products was explained by TPB constructs. The theory has also been shown to be highly predictive of such behaviors as completing debt management plans (Xiao and Wu, 2008), maintaining financial budgets (Kidwell and Turrisi, 2004), use-tax compliance (Jones, 2009), as well as high-risk credit card behavior (Xiao et al, 2011).

As this book deals with saving intentions and behaviors as specific forms of financial behavior, it calls for the presentation of some of the studies that employ the TPB as their model for explaining and predicting saving behaviors in greater detail. Generally, the TPB was able to account for a substantial amount of variance in the intentions to save. However, this was more valid for some studies than it was for others. For example, Croy, Gerrans and Speelman (2010, 2012) found that the three TPB predictors explained between 69% and 76% of the variance in intentions to save for retirement, while Nosi et al (2014) found that attitudes and subjective norms explained 49% of the variance in longevity annuity buying in young Italian adults. As Croy, Gerrans and Speelman (2010) note, these results compare quite favorably to TPB studies in other behavioral domains, where TPB predictors typically account for 39% of the variance in intentions toward different behaviors (Armitage
and Conner, 2001). However, not all studies had predictive validity at such high levels. For example, when examining saving behaviors of Pomak households in Greece in the context of the TPB, Satsios and Hadjidakis (2018) found that the three TPB predictors were able to explain only 29% of the variance in the household heads’ intentions to save.

Although different financial behaviors were analyzed in the context of the TPB, relevant literature is deficient in studies that investigate saving behaviors and intentions to save in children, attempting to provide explanations using the constructs defined in the TPB. Studies conducted thus far mainly focus on different types of behavior in children, but not financial behavior. Physical activity behaviors (Foley et al, 2008; Mummery, Spence and Hudec, 2000; Wang and Wang, 2015) and eating behaviors (Domel et al, 1996; Lloyd et al, 2011) are among the most commonly investigated behaviors in children. This study aims to broaden the scope of behavior in children that can be investigated in the context of the TPB by examining whether saving intentions and behaviors in children can be predicted and explained by their attitudes, subjective social norms and perceived behavioral control over saving.
4. DETERMINANTS OF FINANCIAL EDUCATION OF CHILDREN

As a result of growing consumption among children and changing perceptions on the economic lives of children, there has been an upsurge of interest in financial education aimed at youth (Greenspan, 2005; U.S. Department of Treasury, 2009).

Simultaneously, the level of financial literacy of children and youth is generally inadequate, both in the region and globally. Recent surveys illustrate disturbingly low levels of financial literacy and financial capability of youth and, in many cases, significantly lower levels than those of older generations (Batty, Collins and Odders-White, 2014). The immediate consequences are a general inability to choose the right financial products and oftentimes a lack of interest to commit to sound financial planning. Such situations might lead to further financial problems, intensified financial distress and instability, with serious negative implications on the overall economic growth (Luburić and Fabris, 2014).

In order to develop a propensity to save, it is crucial to understand the concept of delayed gratification and focus on future consumption, as well as the impact of immediate consumption on future saving (Otto, 2009). When they need to make decisions, children predominantly choose to spend instantly. In order to make the right saving decisions, they need to learn about resisting consumer temptations, about the consequences of present spending for the future and about saving strategies (Otto, 2006).

For children to adopt the habit of saving and conscientious spending, they must be educated. Educating children on how to save is the first step in the process of responsible financial consumption behavior among adults. Children should be taught saving planning, rational spending, deferring needs, discerning essential from nonessential, useless consumption, rational from impulsive.
Webley and Nyhus (2006) suggest there are clearly numerous sources of influence on the child’s ability to delay gratification and that children learn in a variety of ways; guidance from their parents, observation of their role models, and explicit educational programs.

4.1 Definition of financial education

Financial education can be defined as a process through which consumers improve their understanding of financial products and concepts and develop the skills and security — through information, guidance and/or objective advice — necessary to become more aware of financial risk, as well as opportunities to make informed decisions, to know where to seek assistance and how to take other effective measures in order to improve their financial well-being (OECD, 2005).

Financial education is expected to transfer financial knowledge, skills, and higher levels of financial confidence. Financial education should help individuals (CYFI, 2016):

- Increase their financial inclusion
- Reduce the level of personal indebtedness
- Reduce the level of poverty
- Ease the burden of social security
- Reduce costs
- Boost the economy.

Financial education should help individuals develop skills and take effective and responsible actions. According to Yoong (2013), financially educated individuals should be significantly more successful in wealth accumulation. Bernheim, Garrett and Maki (2001) noted that “… education may be a powerful tool for stimulating personal saving” (p. 30). However, large-scale financial education programs are very rare in implementation, mostly due to substantial costs. According to Senn (1999), starting financial education at an early age contributes to more positive attitudes of consumers toward money and improved skills in managing personal finances during their transition into adulthood. A research study conducted by the Institute for Public Policy Research (IPPR) in the USA has shown that, by the time they turn 40, children who attended lessons in personal finance end up thirty thousand US dollars richer compared to their peers who did not attend such curricula (Fabris and Luburić, 2015).

Nearly all relevant published literature points toward a consensus regarding the importance of financial education of children. Intelligently designed fi-
nancial education programs can shape the behavior of individuals and help them prosper. Through financial education, poor financial habits can be broken and replaced with more desirable behavior. The literature on financial literacy is teeming with examples of behavioral improvements ensuing after financial education programs (National Financial Educators Council, n.d.). Cross-cultural research in different countries found that children who actively participated in financial life and received more education became more knowledgeable about economic concepts, and that at an earlier age (Roland-Levy, 1990; Furnham and Argyle, 1998; Holden et al, 2009). Therefore, starting from an early age, children need to develop appropriate financial skills which will help them make informed choices between different career and education options, and manage their money – be it as allowance or any other source.

4.2 Importance of providing early financial education

Given that knowledge is acquired primarily through formal education (i.e. schools), international institutions, authorities and experts agree that starting financial education during childhood is essential, even if children still have a long way to go before making their own financial choices. Introducing financial education into formal school curricula is recognized as one of the most efficient ways of reaching the entire generation on a wider scale. Formalizing financial education is especially important since parents are unequally equipped to educate their children financially and impart desired financial habits. Interventions such as education used to promote the development of sound and responsible financial decisions (rational) among children also have long-lasting positive effects on responsible financial behavior in adult life (Whitebread and Bingham, 2013).

Therefore, educators propose early financial education of children, believing it might help the young develop into financially responsible adults who can make informed financial decisions in an increasingly complex financial environment (McNeal, 1987; Lucey and Giannangelo, 2006). Also, as demonstrated in other related fields of education (such as health), the young have proved to be potentially beneficial at disseminating new habits among other generations, hence financial education of children might have an even broader social and economic impact.

According to Senn (1999), formalization of financial education at an early age, during primary and secondary education, contributes to adopting more positive attitudes of young consumers toward money and improves deci-
sion-making skills in personal finances during their transition to adulthood. Senn emphasizes the importance of raising this question in the process of the development of national education programs.

Schug and Hagedorn (2005) also highlight the importance of integrating financial education into school curricula. In order for children to become economically and financially literate adults, economics and personal finance need to be implemented in school curricula. It would be irrational to expect adults to be competent at reading or mathematics if those subjects were not taught in schools and practiced and reinforced repeatedly. In the same way, it is impossible to expect responsible consumer behavior and adequate understanding of financial risk, sensible use of financial goods and services, etc. if financial education is not included in school curricula, early and regularly.

Consistent with Holden et al (2013), satisfactory personal financial habits develop partly from childhood experiences. Hence, the primary role of early financial education is to equip youth with financial knowledge and skills so as to help them perform better as responsible citizens (Fabris and Luburić, 2015).

The potential benefits of teaching children life-long financial habits make it all well worth the effort. “The habits and practices that are instilled in very young children about money receipts, expenditures, and savings may form the basis of good money practices when older” (Holden et al, 2013).

To be precise, in most cases the children who did not acquire appropriate financial habits and are thus not able to understand the rationale behind them, will have the simple choice of imitating the financial behavior of adults around them (most commonly their parents). If the observed behavior of adults is poor, there is high probability that the behavior of those children — once they have reached adulthood — will also be inadequate.

On the contrary, if the children receive financial education at an early age, they will become less receptive to the financial attitudes and behaviors of the adults around them. Once they acquire appropriate personal financial skills, they tend to keep them and use them throughout their lives.

The research conducted by the Institute for Public Policy Research (IPPR) in the USA shows that children who attended lessons in personal finance will have earned an average of thirty thousand US dollars more in comparison to their peers who did not receive such education by the time they turned forty (Fabris and Luburić, 2015).

To sum up, early financial education instills healthy financial habits early on, enables children to develop a positive attitude toward their money regard-
less of their parents’ relationships, and allows them to acquire an enduring skill (Fabris and Luburić, 2015).

Furthermore, it is obvious that early financial education of children is important and could make a difference. It could empower and equip the young with the knowledge, skills, and confidence necessary to take charge of their finances and become financially responsible adults. Therefore, supporting financial education of children may be seen as an aspect of extremely important long-term investment in human capital (OECD, 2012b).

### 4.3 Development of children’s financial literacy through school curricula

Some authors debate that, since children are too young to make their own financial decisions, teaching them about finances and economics is fruitless, as it is unlikely to affect their behavior as adults, no matter the cost. Yet, children are becoming increasingly autonomous, they often receive allowance, make their own spending decisions, and highly affect the overall household spending. In addition, children are being continuously targeted by various marketing campaigns and advertisements, beginning from the earliest age, as toddlers. Accordingly, children represent an important segment of the overall marketplace. Bearing in mind that children are the future agents of social and economic development of every country, the problem assumes an even wider social dimension. Given the fact that parents are often incapable of providing high-quality financial education, enabling young children to gain financial knowledge from competent and professional sources seems rather important (Romagnoli and Trifilidis, 2013).

Following the OECD 2005 recommendations on the introduction of financial education into school curricula, an increasing number of countries are recognizing the importance of financial education as part of their school agendas. However, there are still many challenges to be overcome, including the lack of political will, lack of resources and materials, already overcrowded curricula, and insufficient expertise (OECD, 2012b). Also, another problem with the current financial education initiatives is that they predominantly target high school students, by which time it might already be too late — their habits might already be formed, having been exposed to different social and environmental influences. Therefore, the recommendation is to start implementing financial education in elementary schools.

Providing financial education to children of younger ages is a well-founded initiative. Today, even young children often manage certain amounts of money (Doss, Marlowe and Godwin, 1995) and are stimulated by their peers as
well as the media to “participate actively as consumers” (Suiter and Meszaros, 2005). Existing research in developmental psychology informs us that even fairly young children are able to comprehend simple financial concepts (Scheinholtz, Holden and Kalish, 2012). Psychologists and experts debate that, even though the children's experiences of various financial concepts at very young ages are unsophisticated and naive, in their own way they are able to understand them even as early as the age of four or younger (Harrah and Friedman, 1990; Lau, 1998; Roos et al, 2005; Holden et al, 2009). Enabling young children to receive financial education has an advantage of providing a “clean slate” instead of trying to correct negative habits or misapprehensions previously acquired at home. Early financial education also influences cumulative learning throughout the successive grade levels in formal education, as well as through economic experiences (Batty, Collins and Odders-White, 2014).

According to the OECD, “People should be educated about financial matters as early as possible in their lives” (OECD, 2005). Godfrey and Edwards (2006) state that as soon as children start becoming aware of the world, they become aware of money. “Therefore, they should start learning money management principles as soon as possible” (Fabris and Luburić, 2015). Similarly, the Credit Union National Association (CUNA) argues that initiating early financial education is very important because children learn about personal finances from various sources and at multiple occasions long before they start school. They observe adults, most commonly their parents and other family members, as they use money and buy different things. What they witness affects their attitudes toward the purpose of money. Some experiences may be useful to them as adult consumers, while others may be detrimental (Holden et al, 2009).

Many authors also argue that the best prospect of affecting future financial behavior is to introduce financial education at the beginning of formal schooling, when the child's mind is at its most open to new concepts (OECD, 2016). OECD (2005) emphasizes that including financial education as part of school curricula is an effective policy tool. Financial education should be implemented into school curricula from an early age since it enables children to gain the necessary financial knowledge and skills throughout each consecutive stage of their education (OECD, 2016). Even though a rising chorus of professionals endorse early implementation of financial education as early as preschool or primary school level, most financial education curricula are aimed at secondary school and university students (Cohen and Xiao, 1992; Suiter and Meszaros, 2005; Godsted and McCormick, 2006; Holden et al, 2009).

According to Holden et al (2009), young children are capable of complex, interactive, and abstract thinking. As their cognitive capacities are determined
by general constraints, financial education should be focused on precisely those capacities. In other words, more complex concepts need to be introduced in accordance with children’s developmental transitions.

Advancing through consecutive stages of development, children cultivate their understanding of economic and financial concepts (Strauss, 1952; Berti and Bombi, 1988; John, 1999; de Clercq, 2009). By the time they start elementary school, children are capable of comprehending simple economic concepts such as scarcity, production, specialization, consumption, saving, distribution, demand, supply, business, money and barter (Larkins and Shaver, 1969; Davidson and Kilgore, 1971; Kourilsky, 1977; Chizmar and Halinski, 1983; Hansen, 1985; Laney, 1989; Sonuga-Barke and Webley, 1993; Sosin, Dick and Reiser, 1997; Watts and Walstad, 2006; NASBE, 2006; Holden et al, 2009). These concepts are crucial as they present a base for an individual’s future financial development and understanding of more complex financial and economic concepts (Ward, 1974; Leiser, 1983). Moreover, in the context of financial knowledge, research has shown that children between the ages of six and ten understand the concepts of deposits and withdrawals; at the age of ten they begin to understand loans; and at the age of 12 they can understand the relationship between savings deposits and loans (Berti and Monaci, 1998; Otto, 2009). In addition, from the ages of eight to eleven children are able to comprehend financial exchanges between individuals; however, they still cannot understand the functioning of the overall financial system (Webley, 2005 as cited in Collins and Odders-White, 2015).

### 4.4 Effectiveness of financial education programs

Most programs of financial education are not systemic and are either school-based (but on an ad hoc basis) or one-off campaigns, relying heavily on print and internet media as dissemination channels (Yoong, 2013). Also, general agreement on the standards for financial education delivered in schools has not yet been reached (McCormick, 2009). Financial education of today is frequently integrated into various other courses, such as mathematics, social studies, consumer sciences or economics, rather than being taught as a separate course (Collins and Odders-White, 2015). Furthermore, a great deal of the research conducted in the effectiveness of financial education has taken place in the USA, predominantly at secondary school or university levels.

There is a relative shortage of research investigating the effects of financial education on elementary school pupils. The lack of literature on elementary school programs probably result from increased challenges to this issue, one of the most severe being the required follow-up periods, which might last for
as long as 15 years. Also, the question of how to estimate the effectiveness of the strategies which might or might not have achieved results decades later (Collins and Odders-White, 2015) poses another challenge.

Unfortunately, the field of financial education lacks a standardized set of measures in financial literacy, financial capability, and financial behavior. In the relevant literature, there is great variation between the metrics employed, so the findings are different, too. Most measurement methods adopted are knowledge-based, and some of them measure certain types of financial behaviors (e.g. managing cash flow, savings, investment, debt, etc.).

Rigorous empirical research into the impact of financial education programs for youth is still very scarce. However, available evidence implies that, while the quality of financial education varies, well-designed initiatives can — and do — stimulate long-term saving and investment (Atkinson et al, 2015).

Results found in Larkins and Shaver’s (1969) research study show that first-graders who received economic education performed significantly better on economics tests than those students who did not participate in financial education programs. Another study from 1977 confirmed that five- and six-year-olds who participated in the Kinder Economy program demonstrated significantly better understanding of basic economic concepts in a post-test, and outperformed the control group pupils (Kourilsky, 1977).

Laney (1989) conducted studies into young children’s economic understanding and found that they can acquire economic concepts when provided with carefully designed instructions. The children who were exposed to real-life examples in class acquired knowledge more efficiently than those who relied exclusively on vicarious experiences. Morgan (1991) investigated the effectiveness of a video program called Econ and Me on a sample of 300 pupils. The results indicated that post-test scores of the pupils engaged in the program were significantly higher compared to their pre-test scores. Sosin, Dick and Reiser (1997) conducted an experimental study on several elementary classes divided between grades three, four, five and six. The teachers included in the experimental groups received special training in economic education and used materials from the curricula developed by the National Council on Economic Education. Using a standardized test of economics, eleven control groups were pre- and post-tested. Their findings pointed out that the children in experimental groups improved their economic knowledge significantly more than did those in control groups.

The study of Berti and Monaci (1998) included 25 third-graders who received 20 hours of financial education. Their findings suggested that the children managed to grasp basic concepts from banking significantly more successfully than did those in the control group (33 of them). Positive results using a
pre-post design were persevered in the second post-test administered four months later (Berti and Monaci, 1998).

Roos et al (2005) examined the effectiveness of a program created to improve young children's understanding of economic concepts such as money, income, expenses, and savings. The research was conducted on 23 pre-school children from the ages of 4.5 to 6.5. The children's understanding of specific economic concepts was evaluated on three occasions: before the program, to obtain baseline data; soon after program implementation, to evaluate the impact of the program; and one month after the end of the program, to test the stability of change over time. The findings showed that the understanding of economic concepts improved significantly, from 30% to 62%, while the identification of economic concepts improved from 52% to 64%. Moreover, the improvement in performance on both sets of tasks remained high and statistically significant one month after the end of the program, and it was found that older children benefited more from the program than did younger children.

Schug and Hagedorn (2005) examined the influence of Money Savvy Kids™ curricula on students' attitudes and financial knowledge. They concluded that the Money Savvy Kids curricula had a positive effect on students' attitudes and knowledge about spending, saving, and investing. Their conclusion was, in accordance with the results, that “if we teach it, they will learn”.

Sherraden et al (2007) conducted a quasi-experimental study based on four-year school-based financial education and saving program called I Can Save. Fourth-graders who participated in the program scored significantly higher on a financial literacy test than did the control group from the same school. Their findings suggest that financial capability of young children improves when they have access to financial education and when they participate in meaningful financial services.

Furthermore, Grody et al (2008) conducted a pre-post study on third-graders and recorded a positive impact measured in 15 treatment children's financial literacy achieved from reading storybooks about money, compared to 16 controls. Findings of the one of the largest pre-post studies, with over 300 third-graders participating in the program taught by trained teachers, were also in line with the previous results. Statistically significant improvements in knowledge and attitudes were exhibited by children who received eight financial literacy lessons and a piggy bank (Schug and Hagedorn, 2005).

Junior Achievement's Economics for Success program, conducted on 300 pupils in five U.S. states, based on a pre-post survey, showed substantial enhancement in attitudes, knowledge and confidence about personal finance (Diem et al, n.d., cited in Sherraden et al, 2011). Similarly, Sherraden et al
(2011) found that elementary school children who participated in financial education and college savings accounts programs scored significantly higher on a financial knowledge test compared to the control group, whose members neither participated in the saving program nor received formal financial education. While their study was not an explicit test of the effects of applied learning versus learning with no direct application opportunities, the results were indicative. Go et al (2012) found evidence of increased financial knowledge among upper-elementary students following classroom financial education. They also reported positive changes in students’ attitudes and behaviors.

Batty, Collins and Odders-White (2014) conducted an experimental study investigating the effects of financial education on elementary school students’ knowledge, behavior, and attitudes. They found that a well-designed intervention composed of five classroom financial lessons increased fourth- and fifth-graders’ financial knowledge compared to those in the control group. The reported effect sizes were relatively large. Significantly, these improvements were found to persist a year after the participation in the financial education and therefore did not simply reflect the pupils being “taught to the test.” In addition, their results showed financial education as associated with pupils’ improved attitudes and financial behaviors. Their findings provide encouraging evidence of the potential for financial education offered to elementary school students. Their research also presents one of the first attempts to track pupils’ financial knowledge and behavior beyond the immediate post-education period.

Berry, Karlan and Pradhan (2015) conducted a randomized trial of two financial education programs in elementary and middle schools in Ghana. The first program integrated both financial and social education, while the second included only the financial education. Their study found that after nine months had passed both programs recorded positive impacts on self-reported saving at school, compared to the control group, but no statistically significant increases in aggregate savings, attitudes, preferences, or knowledge were reported.

One of the most recent and most comprehensive research studies examining the effectiveness of financial education programs among youth was conducted by Amagir et al (2018). They examined programs in primary schools, secondary schools, and colleges, concluding that financial education programs in primary schools had mainly positive effects on financial knowledge and attitudes. They also reported that the length of education varied from one week to four years, but that they could not affirm that longer intervention periods resulted in better performance in financial knowledge or attitudes. Furthermore, they did not find any major differences between programs that were integrated into existing curricula (Roos et al, 2005; O'Neil-Haight, 2010; Batty, Collins and Odders-White, 2014; Collins, O'Rourke and Odders-White,
2016, cited in Amagir et al, 2008) and stand-alone, separate programs (Schug and Hagedorn, 2005; Sherraden et al, 2007, 2011). Regarding the studies that employed control groups, three out of four reported significant effects on financial knowledge and attitudes. In their conclusions they suggested that the effects of financial education on saving behavior were difficult to report due to the differences in saving behavior measurement methods. Their findings supported the notion that financial literacy education needed to start as early as primary school level and be repeated and reinforced throughout secondary and tertiary education.

4.5 Use of behavioral interventions in financial education

4.5.1. Engaging children in experiential learning programs

Experiential learning, or “learning from doing,” was found to be an important source of financial education (Schug and Birkey, 1985). Experiential learning can take many forms but mainly relies on learning through active participation (Dewey, 1997). The liberty to manage money — in terms of sources and amounts — they dispose of influences learning in children (Doss, Marlowe and Godwin, 1995; Furnham, 1999).

There are many natural ways to provide experiential learning opportunities in schools, such as creating situations in which the children actually use money, or by simulations (O’Neill, 2008). In addition, there are specialized programs aimed at experiential learning, such as Vanguard’s My Classroom Economy or BizTown, which attempt to incorporate financial experiences into daily classroom activities. That way the child interacts with various jobs and different financial concepts, products, and services, like banks, paychecks, loans, and taxes, through a game. These programs are highly rated by the participants and demonstrate an increase in the level of financial proficiency of those involved (Collins and Odders-White, 2015).

Furthermore, saving behavior is found to be modifiable experimentally among children by means of using different strategies (Mischel, Ebbesen and Raskoff Zeiss, 1972).

For example, in a quasi-experiment done in Singapore on children aged 8 to 14, it was affirmed that participation in financial literacy games in matches saving programs resulted in attitudinal and behavioral changes in saving (Tonsing and Ghoh, 2019).
In a series of methodologically diverse and very creative experimental studies, Sonuga-Barke and Webley (1993) established that children perceive saving as an efficient form of money management. Children were shown to appreciate saving because it appeared as socially acceptable and valuable behavior. However, as children grow older, they recognize the real-world benefits of saving behavior, but they also start challenging those beliefs. By engaging in saving themselves, they are given the opportunity to be responsible, to have the freedom to make decisions, to gain different experiences and financial knowledge.

Moreover, at a younger age, learning is enhanced by three relevant factors: (1) recurrence of the same material in different (e.g. audio-visual) formats, (2) introduction of various events in which the objective and the means are deliberately made striking and memorable, and (3) response formats that enhance retrieval skills (Peracchio, 1992). Research shows that children's ability to acquire knowledge is corresponding at all ages if the materials used are compatible with their abilities of cognitive (knowledge) acquisition (encoding and retrieval abilities) (Peracchio, 1992).

Associative and reward learning is similar to experiential learning in that it is also based on experience. However, associative learning is accomplished through repeated exposure. Associative learning may be best described as the process through which an individual begins to associate one behavior or stimulus with another (Berridge, 2001). In the context of financial education, this mechanism is founded upon the belief that children learn to behave responsibly based on past positive or negative experiences. Reward learning includes incentives that are intended to reinforce positive behaviors. Accordingly, incentive or motivation can be considered tools by means of which financial education influences and determines subsequent financial behavior (Collins and Odders-White, 2015).

Motivation includes internal incentives such as self-efficacy, self-control, time preferences, future orientation, as well as external incentives (Mandell and Klein, 2007; Howlett, Kees and Kemp, 2008; Meier and Sprenger, 2013). These psychological factors can be included in elementary school curricula and programs (McCormick, 2009; Otto, 2009), however, up until the present moment there has been no published literature on the matter.

4.5.2. Psychological factors relevant for the improvement of financial education

However, addressing specific psychological factors that influence certain types of financial behavior (e.g. development of self-control, which impacts
future saving behavior) may be difficult to achieve. Understanding how to incorporate them into financial education curricula requires advanced comprehension of the development of these psychological traits in children. This endeavor presupposes studying psychology, education, and behavioral decision-making, and it is critically important to understand why certain programs are successful while others fail, and how knowledge is transformed into behavior over time (Collins and Odders-White, 2015). That is precisely what the aim of the experiment was.

There are three well-established psychological phenomena that can be relevant for the improvement of the efficiency of financial education in terms of the implementation of behavioral interventions: self-persuasion, goal setting, and the development of implementation intentions. Each phenomenon has been extensively studied and empirically confirmed through years of psychological examination.

One of the main characteristics of self-persuasion is that there is no direct attempt to convince anyone of anything. On the contrary, individuals find themselves in situations in which they benefit from convincing themselves of a particular thing (Aronson, 1999). For example, a case in point would be the classical research study by Aronson and Carlsmith (1963), in which they manipulated children's preferences for various toys. Specifically, they created two situations in which they discouraged children from playing with their favorite toys: in the first situation they used an explicit threat, while in the second situation the threat was relatively milder, just dire enough to get the children to refrain temporarily from playing with that specific toy. When asked subsequently about the attractiveness of the toy, the children from the first group (dire, explicit threat) rated the toy as more attractive than did the children from the second group (milder threat). The researchers' explanation for the phenomenon was that the children from the second group, due to the threat not being explicit or severe enough to justify their refraining behavior, had to come up with additional reasons why they did not play with their favorite toy. Consequently, children concluded that they must not have found the toy attractive after all. In other words, children changed their own attitudes toward their favorite toys, i.e. they engaged in self-persuasion.

At the heart of self-persuasion is Festinger’s Cognitive dissonance theory (Festinger, 1957). According to this theory, when an individual does or says something that is not in line with their own beliefs, they experience a state of dissonance and are motivated to reduce this unpleasant state. Often the easiest way to do this is to bring the disparate cognition into greater harmony with actions, which essentially implies shifting the beliefs and attitudes to be more in line with individual behavior.
One specific technique of self-persuasion that utilizes the insights from the Cognitive dissonance theory is the so-called “saying-is-believing” technique (Higgins and Rholes, 1978). Specifically, this technique includes advocating or even simply summarizing a position on some issue presupposing that that alone is enough to influence one’s attitudes toward the issue in question. Thus, if a child is required to, for example, advocate saving behavior to a colleague, they might develop more positive attitudes toward saving itself.

An additional technique that can be used together with the “saying-is-believing” technique is one that advances inducing the feeling of hypocrisy in participants. This is done by increasing the participants’ awareness that they were not practicing what they preached. For example, Aronson, Fried and Stone (1991), after inducing students to give talks about the dangers of AIDS and the importance of using condoms, asked them about the times when they had found it difficult to use condoms themselves, making them mindful of the fact that they often did not live up to the standards they set in their speeches. This feeling of hypocrisy substantially increased the number of students who bought condoms after the experiment, compared to the control situation. This is a particularly useful technique as it was shown that inducing people to consider the inconsistency of their own past behaviors with their attitudes strengthened those attitudes, making them more resistant to counter-information, more persistent over time and more likely to influence actions (Fazio and Williams, 1986).

Secondly, Goal-setting theory posits that the most effective goals for increasing performance are those that are specific and difficult (Locke and Latham, 2002, 2006, 2019). The evidence for this is overwhelming. For example, a meta-analysis by Locke and Latham (1990) found that people who set specific and challenging goals reliably outperformed those who followed the so-called “do-your-best” goals. The main explanation for this finding is that the “do-your-best” goals are too subjective and idiosyncratic, which allows for a wide range of acceptable performance levels (Exactly how good is good enough?). This is not the case when the goal is specific (Locke and Latham, 2002).

 Appropriately set goals influence performance through four mechanisms. Firstly, they direct attention and effort toward the activities that are relevant for goal attainment and away from irrelevant activities. Secondly, goals have an energizing function in the sense that goals which are more difficult to achieve mobilize greater effort compared to those which are easier to achieve. Thirdly, harder goals prolong the effort, meaning that they have a positive impact on persistence. And finally, goals influence behaviors indirectly by leading to arousal, discovery, and the use of task-relevant knowledge and strategies (Locke and Latham, 2002).
Nevertheless, in addition to being specific and relatively difficult to attain, goals need to possess several additional characteristics in order to be at their most effective. First of all, people need to receive feedback that reveals the progress in relation to the goal (Locke and Latham, 2002). In practice, this means that the person needs to be able to measure how close or how far he or she is from meeting the goal, i.e. goals have to be measurable. Secondly, in order for goals to be efficient, they need to be accepted by the person who sets them for themselves or whose goals are set by a third party. Only if a person accepts a goal can they be committed to it, which is the precondition for effective goals. This can elegantly be achieved by including a person in a goal-setting process (Lunenburg, 2011) and convincing them that achieving the goal is possible and meaningful (Koch and Nafziger, 2011). In short, goals need to be relevant for the person setting them. Finally, other than being measurable and relevant, goals will be more effective when they include a deadline for completion. Deadlines tend to increase the motivational impact of a goal, making a person more willing to invest additional effort into completing the goal with the approaching deadline (Lunenburg, 2011).

However, even the best intentions and goals can fall short of attainment – which is well-known to anyone who has ever made a new year's resolution but failed to follow through. This phenomenon of good intentions not resulting in desired behavior is known as the intention-behavior gap (Sheeran and Webb, 2016). There are several reasons for this gap. For example, people's short-term desires (what they want to do) are often in conflict with behaviors that could promote their long-term goals (what they should do; Milkman, Rogers and Bazerman, 2008); people often lack the willpower or have low levels of executive functioning (Allan, Johnston and Campbell, 2011); they do not prepare well enough or simply forget about performing the desired behavior (Sheeran and Webb, 2016).

One fruitful avenue for successful bridging of the intention-behavior gap is the development of implementation intentions by making the so-called “if-then” plans (Gollwitzer, 1999). Implementation intentions (as opposed to goal intentions) encourage people to consider when, where and how the most important behavioral steps toward overall goals will be carried out, thus increasing the likelihood of meeting their financial goals (Dolan, Kudrna and Laffan, 2016). Gollwitzer and Sheeran (2006) describe the difference between goal intention and implementation intention in detail:

“Whereas goal intentions specify what one wants to achieve (i.e. ‘I intend to reach Z’), implementation intentions specify both the behavior that one will perform in the service of goal achievement and the situational context in which one will enact it (i.e. ‘If situation Y occurs, then I will initiate goal-directed behavior X’). Thus, goal intentions and implementation intentions can easily be distinguished on the basis of their content and structure; a goal intention
refers to what one intends to achieve, whereas an implementation intention specifies when, where, and how one intends to achieve it.” (p. 82). Thus, within this framework, goal setting is viewed as merely the first step in goal realization, with planning how to achieve the goal, getting started, and successfully completing the goal striving as equally important subsequent tasks.

For instance, let us say that an individual decides to write a letter to a friend. They have the best intentions to write the letter but still do not have an exact plan about how to do it. Therefore, one can devise implementational intentions by answering the questions of when, where and how they intend to achieve the goal. For example, the following can be an appropriate implementation intention in this situation: “In order to write a letter to a friend, I will send him or her an email tonight after dinner at my desk.” (Brandstätter, Lengfelder and Gollwitzer, 2001).
The data was collected within the MAFIN project – *Mala akademija financija* (Little academy of finance), developed, organized and implemented by the Association of Croatian Pension Funds Management Companies and Pension Insurance Companies, the Faculty of Economics and Business in Zagreb, *Večernji List*, the largest daily newspaper in Croatia, the Ministry of Science and Education and the Education and Teacher Training Agency. The project also included setting up a special webpage (www.vecernji.hr/mafin), where all the important information regarding the project, the feedback from workshops and article topics related to the educational program were shared with the public.

Figure 3. Project announcement poster
The project was designed with the aim to:

- Establish a consortium of a diverse set of stakeholders on the matter of financial socialization of children
- Raise the level of financial literacy and attitudes toward saving among primary school children
- Ensure equal regional representation of the project
- Ensure sensitization of the general public on matters of financial literacy and saving
- Conduct a large research study on children aged 10-15 and to implement the developed experiment.

5.1 Project description and experimental design

Primary schools from all over Croatia were invited to take part in the project that offered education for children from the fifth to the eighth grade. There were two categories that they could apply for: fifth and sixth graders belonging to category one and Seventh and eighth graders to category two. Each school could apply with the maximum of two teams of students. The schools were motivated to apply with incentives of financial education and lucrative awards. The project consisted of three stages. The first stage included the submission of a motivational essay, where each team explained why it was important for them to receive financial education and why they wanted to enter the project. The jury that graded the essays consisted of 7 members: representatives of the Association of Croatian Pension Funds Management Companies and Pension Insurance Companies, Večernji list, the Ministry of Science and Education, the Education and Teacher Training Agency, and two assistant professors from the Faculty of Economics and Business in Zagreb. Each member of the jury had to grade each essay from 1 to 10 for each of the three designated criteria: creativity, idea and form.

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**Stage 1**
Application Motivational essay

**Stage 2**
Selection of 20 best schools Financial education

**Stage 3**
Submission of final creative work Announcement of winners

*Figure 4. Project stages*
The total of 87 schools applied and 20 with the greatest number of points entered the second stage.

The education consisted of a two-hour workshop, which covered such topics as money, banks, needs and wants, consumption, consumer protection, financial goals, saving and budgeting. The intervention was designed and implemented in an interactive way, using contemporary teaching methods, and is described in detail in section 5.4 (Procedure).

After the education the schools that were competing for the prize, entered the third stage where they had to deliver a creative work (without formal restrictions – a song, a poster, a game etc.) that is in line with their vision of how financial literacy should be promoted among the young.

With the aim to raise public awareness about the project, but also about the importance of saving and financial socialization of children, each week there was a special article published on the topic relevant to the field.

**Figure 5.** Feedback from workshop and special articles covered in *Večernji list*

In the end, the organizers put together a large award ceremony, with the intention to get all the students together, present their work and award the winners.

### 5.2 Sample/participants

A total of 87 schools initially applied, and 20 with the highest scores entered the second stage. The schools that did not qualify for the subsequent round of the call were offered education at a future time. A total of 30 schools ac-
cepted the offer, out of which 10 were randomly chosen as our control group. The 20 schools that were picked for the education in one of the two experimental situations were randomly assigned. Thus, the total sample consisted of 10 schools that received education only, 10 schools that received education and behavioral intervention and 10 control schools that were promised educational workshops after the collection of data.

Pupils who were part of the sample and who participated in the workshop were chosen by teachers-mentors who applied for the project. The experimental design and the questionnaire were approved by a competent ethics committee, and all pupils participating in the experiment provided their parents’ consent. Location-wise, the participants came from all over Croatia, predominantly from Zagreb, adequately distributed relative to the total number of schools in Croatia (see Figure 6).

![Geographical location of schools in the sample](image)

**Figure 6.** Geographical location of schools in the sample

*Note:* Red = intervention, blue = workshop, yellow = control.

<table>
<thead>
<tr>
<th>Primary school</th>
<th>City</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>OŠ KAJZERICA</td>
<td>Zagreb</td>
<td>Experimental – Behavioral intervention</td>
</tr>
<tr>
<td>OŠ PAVAO BELAS</td>
<td>Zaprešić</td>
<td>Experimental – Behavioral intervention</td>
</tr>
<tr>
<td>OŠ IVAN MERZ</td>
<td>Zagreb</td>
<td>Experimental – Behavioral intervention</td>
</tr>
<tr>
<td>OŠ GRABRIK</td>
<td>Karlovac</td>
<td>Experimental – Behavioral intervention</td>
</tr>
<tr>
<td>OŠ IVAN NEPOMUK JEMERŠIĆ</td>
<td>Grubišno Polje</td>
<td>Experimental – Behavioral intervention</td>
</tr>
</tbody>
</table>
A total of 715 elementary school pupils participated in this study, all of whom answered a full PRE-education questionnaire (mean age was $M = 12.59, SD = 1.17$), out of which there were 331 boys (46%), 371 girls (52%) and 13 not specifying gender (2%). By grade, there were 166 pupils from the fifth grade (23%), 157 from the sixth grade (22%), 201 attending the seventh grade (28%), and 179 attending the eighth grade (25%).
In terms of the number of people per household the predominant values were 5 (38.95%) and 6 members (27.97%).

The items descriptive of the mothers and fathers’ levels of education revealed that most fathers had high school degrees (52.78%), as did the mothers (45.63%), followed by bachelor’s degrees (fathers 38.07%, mothers 30.71%).
Moreover, a total of 471 students fully completed both the PRE- and POST-education questionnaires. There were 216 (46%) boys and 248 (53%) girls (seven students did not specify their gender) aged 10 to 15. The distribution across grades was as follows: 136 (29%) fifth-graders, 90 (19%) sixth-graders, 126 (27%) seventh-graders and 113 (24%) eighth-graders (six did not specify their grade).

5.3 Instruments

In the study, two instruments were used: the first was an exercise intended for the implementation of behavioral intervention in the experimental group A, and the second consisted of the pre- and post-education questionnaires used in both the experimental and control groups. The experimental design and the questionnaire were approved by a competent ethics committee.

5.3.1 Development and implementation of behavioral intervention

The intervention workshop had a very specialized approach to the topics of financial goals and saving. Specifically, it aimed to cover three motivational techniques that would help children follow their financial goals and facilitate goal attainment: self-persuasion, goal setting, and the development of im-
plementation intentions. The phenomena were discussed and presented in section 4.5.2. (Psychological factors relevant for the improvement of financial education), demonstrating how this relates to the intervention.

Within a curriculum, the echo of psychological phenomena presented in section 4.5.2. can be accompanied by short exercises tailored specifically for students in grades 5 through 8 (ages 11-15). The exercises can serve to influence the children’s attitudes, saving intentions, self-efficacy, and behavior over and above what could be accomplished with simple financial education.

In line with the Theory of self-persuasion, in the first part of the intervention, the children’s positive attitudes toward saving were induced and strengthened using the so-called “saying-is-believing” technique. Specifically, students were instructed to write down three best arguments for saving money and to present them to their colleagues. In order to make the students aware of the possibility that they might not have behaved in ways they had previously advocated, they were also asked to think about and estimate whether or not they thought their previous saving behaviors were adequate. In sum, these techniques were devised with the goal of improving and strengthening the students’ attitudes toward saving.

As part of self-persuasion efforts, the students in the intervention group wrote short essays arguing why saving was essential for financial security and presented them to the rest of the class. The task is presented below.

**Exercise 1. Why is it good to save?**

You will do this exercise in pairs (but everyone writes on a separate sheet of paper). The exercise lasts for about 15 minutes.

Below, write down for yourself three best arguments you would use to explain to your friend why it is good to save. After you have written it, present it to your friend.

Remember! Be creative and persuasive! The more you believe in what you say, the more likely your friend is to believe you! So think carefully – why do you think it is good to save?

After convincing your partner that it is good to save – do you think you save enough or you could still improve?

The second step in the intervention was based on Goal-setting theory (Locke and Latham, 2002, 2006, 2019). The characteristics of effective goal setting are described by the well-known acronym SMART. In short, SMART goals are specific, measurable, attainable (but difficult), relevant for the person (which is important for commitment), and time-bound (i.e. they have a defined deadline). The second intervention thus prompted the students to specify their
SMART saving goals. Specifically, students were asked to specify one savings goal that presents something important for them and that they would like to save money for during the next two months. Furthermore, the students were asked to specify the exact sum of money they would like to save during the two-month period that ensued in order to make the goal more specific and measurable. Finally, the goal was time-bound as it was clearly specified that they should aim to save the money over the following two months. The intention was to increase the motivational potential of the goals by following the best practices from Goal-setting theory, additionally promoted by recent empirical investigations. Namely, a recent field experimental study showed that those participants who, in addition to basic financial education, received training in goal setting, were more likely to join informal saving groups or plan their budgets compared to those who only received basic financial education (Carpena et al, 2017).

As part of the goal-setting task, the students participated in an interactive workshop where they each formulated their own financial goals for the following two months in line with SMART principles. This task is shown below.

**Exercise 2.**

You will do this exercise on your own. The exercise lasts for about 15 minutes.

You have just heard what types of financial goals there are and how important they are. Now determine your financial goal for the coming period (the next two months).

In order to be adequately specified, goals must be SMART:

- **S-Specific**
- **M-Measurable**
- **A-achievable**
- **R-Relevant**
- **T-Time bound.**

Your goal, given that it is set for the next two months, is in itself time-bound. It is important that you set a goal that will be challenging but achievable. This means that it should not be too easy (such as saving for a movie ticket) nor too difficult so that it cannot be achieved (such as saving for a computer or a TV set, unless you already have some money saved). Also, it is important that you know EXACTLY how much money you want to save (to make your goal measurable).
Examples of possible goals are: saving for clothes, saving extra to raise enough money (in addition to what you have) to buy a mobile phone, a computer or a video game console (PlayStation, Xbox, etc.), saving for a trip, a vacation or anything else you hold essential.

Write your SMART financial goal for the next two months here:

In the next two months, I will save ________ kuna in order to buy ________.

One of the main advantages of having a devised plan that links a situational context to appropriate behavior and answers the questions of when, where and how to perform behaviors that move us closer to our goals is that in that way an action becomes more automated. Specifically, because an effortful deliberation in situ is no longer required (as we have previously decided when, where and how we will act), action initiation calls for less cognitive resources and should thus be more efficient. That is what Gollwitzer (1999) refers to it as “passing the control of one’s behavior on to the environment”. Thus the third and final part of the intervention included prompting students to specify and write down the exact actions they would undertake in order to reach previously defined saving goals.

Finally, as part of efforts into implementation intentions, the students developed specific plans and strategies for achieving their goals. The task is shown below.

Write down very specific, concrete actions that you must take to save that amount of money in the next two months and to achieve your financial goal! The aim of this exercise is to determine exactly when and how you will act to achieve the goal. For example, if you were receiving pocket money from your parents, you could decide that each time you received pocket money, you would immediately take a part of it and put it in a savings account or a piggy bank. Of course, not everyone receives the money in the same way or amount, so you will have to decide for yourself which behaviors work best for you.

When, in which situations and in what way will I act to achieve my financial goal?

5.3.2 Questionnaire

The follow-up (post-test) and baseline questions (pre-test) are identical, making the difference between the changes in responses for the treatment and control groups the measure of interest, and divided into the following parts: measuring social norms, attitudes toward saving, saving self-efficacy, perceived behavioral control, saving intentions, responsible financial behavior
index, self-control, materialism, spending habits and selected demographic variables. The students were also asked about the amount of money they received as allowance and about the amount of money they saved.

Moreover, experimental group A also received behavioral intervention in the form of exercises; in the questionnaire that ensued three months after the education they were asked about the perceived success of the saving goals they had set for themselves.

**Social norms**

Two types of social norms, descriptive social norms and injunctive social norms were measured, both of which were calculated for both parents and friends, the two most significant sources of influence on children of that age. In sum, the study measured for different social norms: parents’ descriptive norms, parents’ injunctive norms, friends’ descriptive norms and friends’ injunctive norms.

Each type of social norm was assessed with three self-report items and the pupils’ task was to state their level of agreement with each of the items by marking one number between 1 and 7 (1 – completely disagree, 7 – completely agree). Parents’ descriptive social norms consisted of items such as “My parents save money” or “My parents think that saving is a good idea.” Parents’ injunctive norms consisted of items such as “My parents think that I should start saving money” and “My parents would support me if I wanted to save money.” Similarly, friends’ descriptive social norms consisted of items such as “My friends save money” and “My friends think that saving is a good idea,” while injunctive norms included items such as “My friends think that I should start saving money” and “My friends would support me if I wanted to save money.” The final score on all norm measures was calculated by averaging the responses to the three items specific for each of the norms.

**Attitudes toward saving**

Attitudes toward saving were measured with ten semantic differential items that consisted of opposed attributes such as *boring-fun, useless-useful, bad-good, unimportant-important,* etc. Participants’ task was to assess their attitudes toward saving by assessing to what degree the attributes pertained to saving on a scale from 1 to 7. For example, they were asked the following: “Pick one number between 1 and 7 that best describes what you think about saving.” After that they marked a number for each of the semantic differential items, where 1 always referred to the most negative attitude toward saving (e.g. boring, useless, bad, etc.) and 7 always referred to the most positive
attitude toward saving (fun, useful, good, etc.). The final score was calculated by averaging all the responses for each of the participants. Thus, a score of 1 on this measurement method meant completely negative attitudes toward saving and the score of 7 meant completely positive attitude toward saving.

**Saving self-efficacy**

Similarly to saving intentions, saving self-efficacy was measured with five self-report items (e.g. “How confident are you that you will be able to save money in the next three months?”; “How confident are you that you will be able to overcome obstacles that could make it difficult for you to save money?”). Participants were instructed to estimate their confidence on a scale from 1 to 7, where 1 meant “Not confident at all” and 7 meant “Completely confident.” The total score was once again calculated as an average of all five responses, where higher values indicated higher saving self-efficacy.

**Perceived behavioral control**

Perceived behavioral control was measured with three self-report items referring to beliefs about whether or not saving money is under the pupils’ personal control (e.g. “I can decide by myself how to spend or save money” or “Whether or not I will succeed in saving money in the next three months is entirely up to me.”). The pupils assessed their levels of agreement with the items on a scale from 1 (“Completely disagree”) to 7 (“Completely agree”) and the total score represented their average score on the three items.

**Saving intentions**

Saving intentions were measured with five self-report items (e.g. “I plan to start saving money in the next three months,” “I will try to save some money in the next three months.”). The participants’ task was to estimate their level of agreement with each of the items on a scale from 1 to 7, where 1 stood for “Strongly disagree” and 7 stood for “Strongly agree.” The final score was calculated by averaging the responses from each item. Individual scores could be between 1 and 7, with higher scores indicating higher saving intentions.

**Responsible financial behavior index**

Responsible financial behavior index is a composite of four different binary choice (yes-no) items related to saving, budgeting, careful spending and not spending all of the pocket money. The items are given below.
• “Do you save money?”
• “Do you keep a budget?”
• “Are you careful about the way you spend your money?”
• “Did you manage not to spend all of the pocket money in the last three months?”

For each affirmative (“Yes”) response participants were awarded one point, and for each negative (“No”) response zero points. The final score on the Responsible financial behavior index was calculated by summing up the responses to each of the items. Thus, it was possible for participants to score between 0 and 4 on this measurement scale, with greater scores indicating more responsible financial behavior.

**Self-control**

Self-control was measured with Brief self-control scale (BSC; Tangney, Baumeister and Boone, 2004). BSC is designed for measuring self-control, or the ability to control one’s instincts, emotions, thoughts, habits and behaviors. It consists of 13 items (e.g. “I wish I had more self-discipline,” “I am good at resisting temptation”) and the participants were instructed to indicate their level of agreement with the items using a seven-point scale (1 = completely disagree, 7 = completely agree). In the current study, in order to reduce the load, only 6 out of 13 items were used. The total score was calculated as the average of all the responses to the 6 items.

**Materialism**

Materialism was measured with Materialism scale (Richins and Dawson, 1992). Originally, the scale consists of 18 items, but as in the case of self-control scale, the number of items was reduced so as to relieve the burden placed on the children. The scale consists of items such as “Buying things gives me a lot of pleasure” and “I’d be happier if I could afford to buy more things.” The pupils’ task was to indicate their level of agreement with the items on a seven-point scale (1 = completely disagree, 7 = completely agree) and the total score was calculated by averaging their responses on the six items.

**Spending habits**

In an attempt to assess the spending habits of the participants, they were given a list of 15 different categories of goods and services on which they
could spend their pocket money: books, magazines, technology, computers, video games, food, beverages, going out, transportation, clothing, cosmetics, sport, cinema, pets and bicycles. For each of the categories the participants were asked whether or not they spent money on any of them in the previous month.

5.4 Procedure

This study examines the effects of a classroom financial education program for grades 5, 6, 7, and 8. The education was carried out by the authors, assistant professors at the Faculty of Economics and Business in Zagreb, from late February to early March of 2019. The educators are skilled and experienced in both research and practice in the field of financial education, having authored several papers in the field.

The educational workshop, delivered in one lesson of approximately 90 minutes, focused on financial goals, saving, financial decision making, budgeting, money management, and consumer protection.

The focus on fifth-, sixth-, seventh-, and eighth-grade students in this study is intentional. From a developmental perspective, these children are 10–14 years old and past what is commonly referred to as the “5-to-7 shift,” period between ages 5 and 7 in which children experience marked growth in self-control, planning, and formal decision-making abilities (Morrison, Smith and Dow-Ehrensberger, 1995). This age group also has adequate cognitive skills enabling them to answer the survey questions accurately (Borgers, De Leeuw and Hox, 2000).

To enroll in the study, each pupil's parent or guardian was required to sign and return a mailed consent form giving permission to use their child's assessment survey data. Only children whose parents signed the consent form were able to participate in the workshops.

An important difference occurring among interventions is whether the intervention includes only the financial education, or financial education is enhanced with behavioral interventions described in section 5.3.1. According to Birkenmaier, Maynard and Kim (2019), this difference is very important.

Interventions that include only the financial education are not designed to allow participants to act on their knowledge, and assume that knowledge alone is enough for behavioral change. Fernandes, Lynch and Netemeyer (2014) investigated the effects of financial literacy and financial education interventions on financial behaviors and proved that financial education alone had weak effects on behavior. Therefore, this study developed two experimental
groups and combined financial education with financial access to exploit the interaction of the two components that might affect financial behavior.

They were divided into three groups:

1. Experimental behavioral intervention and financial education – “treatment A”
2. Experimental financial education – “treatment B”
3. Non-education group that did not receive the education until after the study's follow-up assessment had been completed – “control”.

Out of the total sample that completed both questionnaires, 178 were in the behavioral intervention and financial education group (A), 157 were in the education treatment group (B) and 136 were in the non-education control group.

The data from the field experiment was collected in two waves. The pupils initially filled in the questionnaire two months prior to the education, while in the second wave the data was collected three months after the education, with the aim of tracking the differences in reported behavior.

**First wave – PRE**
- The questionnaire was sent together with the application two months before the education
  - December 2018 – January 2019

**Second wave – POST**
- The questionnaire was filled out three months after the education
  - May 2019 – June 2019

**Figure 10. Waves of data collection**

This experimental design allows for testing whether the children's understanding of financial concepts increases measurably after participating in a more modest financial education program, and whether their financial behavior changes after the intervention.

At the educational workshop, the participants were given the opportunity to learn about the basic financial concepts such as saving, credit, and interest rates, and to discuss various forms of desirable and undesirable financial behavior. Also, they did several exercises, both individually and in pairs, in order to learn about some of the most important financial concepts.
According to Birkenmaier and Maynard (2016), interventions must deliver: (1) information about a variety of general financial concepts and behaviors, (2) information targeted to a specific financial topic (such as a formal or informal session about saving or homeownership), (3) information about a specific product (such as savings accounts or emergency savings), and/or (4) information about a specific product or service.

Therefore, “treatment B” group was a part of the educational workshop where they were provided with knowledge on basic financial concepts and behaviors. Unlike the educational workshop for “treatment A” group, this workshop incorporated a special intervention intended at increasing the children’s propensity to engage in saving behavior. The intervention workshop had a very specialized approach to the topics of financial goals and saving, and a much greater emphasis was placed on the desirability of saving, practicing saving behavior and specific savings and investment products. The intervention group was given several specific tasks to fulfill, presented in detail in section 5.3.2.
6. RESULTS

“The results of the study are presented within four different parts: descriptive statistics and the three that originate from the formulated purpose of the study:

- To get a complete overview of the children’s saving and spending behaviors and habits and to see how those relate to their gender, age, and residence, as well as their parents’ education levels
- To explore the predictors of children’s saving intentions and behaviors in terms of the Theory of planned behavior;
- To test the influence of financial education and behavioral intervention on responsible financial behavior and its determinants”

6.1 Descriptive statistics

Before moving to the analyses related to the three main goals, below are the basic descriptive statistics data and correlations among key study variables.

Table 3. Monthly allowance and savings amounts of children in the sample

<table>
<thead>
<tr>
<th></th>
<th>Monthly allowance amount</th>
<th>Monthly savings amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>125.34 kuna</td>
<td>59.42 kuna</td>
</tr>
<tr>
<td>0-20 kuna</td>
<td>12.97%</td>
<td>37.59%</td>
</tr>
<tr>
<td>21-50 kuna</td>
<td>8.59%</td>
<td>33.39%</td>
</tr>
<tr>
<td>51-100 kuna</td>
<td>29.17%</td>
<td>9.31%</td>
</tr>
<tr>
<td>101-200 kuna</td>
<td>29.98%</td>
<td>14.96%</td>
</tr>
<tr>
<td>201-300 kuna</td>
<td>13.61%</td>
<td>3.10%</td>
</tr>
<tr>
<td>More than 300 kuna</td>
<td>5.67%</td>
<td>1.64%</td>
</tr>
</tbody>
</table>

Most children in the sample stated that they received some kind of allowance; namely 621 of them (86.85%). Out of that number, 504 saved a cer-
tain amount of money each month (81.16%). The average allowance of the children in the sample amounted to 125.34 kuna per month, and average monthly savings from allowances amounted to 59.42 kuna, or 47.41%.

Children mostly get from 101 to 200 kuna (29.98%), and between 51 and 100 kuna (29.17%). A total of 87.07% of the sample saves, and more than half lend money to their friends (55.41%). However, only 30.87% borrow money from their friends, and less than half budget their allowance (47.38%).

**Table 4.** Monthly allowance and savings amounts relative to gender and grade

<table>
<thead>
<tr>
<th></th>
<th>5th and 6th grade</th>
<th>7th and 8th grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total average income</td>
<td>114.91</td>
<td>138.80</td>
</tr>
<tr>
<td>Boys average income</td>
<td>134.30</td>
<td>148.38</td>
</tr>
<tr>
<td>Girls average income</td>
<td>100.13</td>
<td>132.21</td>
</tr>
<tr>
<td>Total average savings</td>
<td>70.01</td>
<td>51.27</td>
</tr>
<tr>
<td>Boys average savings</td>
<td>81.43</td>
<td>55.56</td>
</tr>
<tr>
<td>Girls average savings</td>
<td>60.71</td>
<td>45.84</td>
</tr>
</tbody>
</table>

The average income of the sample is somewhat higher in higher grades of elementary school (grades 7 and 8 – corresponding to ages 13-14). Interestingly, boys received more money on average than girls did across all grades. In terms of savings, they were averagely higher in grades 5 and 6. However, boys tended to save more than girls did; even though the average savings dropped for both boys and girls as they grew older, indicating that they started spending more.

**Table 5.** Overview of dichotomous questions

<table>
<thead>
<tr>
<th></th>
<th>% No</th>
<th>% Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you lend money to your friends?</td>
<td>44.59%</td>
<td>55.41%</td>
</tr>
<tr>
<td>Do you borrow money from your friends?</td>
<td>69.13%</td>
<td>30.87%</td>
</tr>
<tr>
<td>Do you budget your allowance?</td>
<td>52.62%</td>
<td>47.38%</td>
</tr>
<tr>
<td>Do you set your financial goals?</td>
<td>39.89%</td>
<td>60.11%</td>
</tr>
</tbody>
</table>

When asked why they saved, most of the children answered that it was not because their friends saved or because their parents told them to save; most of them saved in order to buy something they wanted (66.62%), in order to have more money (42.63%) or to buy clothing and shoes (40.59%).
Figure 11. Share of children who save

Table 6. Purpose of saving and saving goals

<table>
<thead>
<tr>
<th>Purpose of saving</th>
<th>% No</th>
<th>% Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>My friends save.</td>
<td>93.78%</td>
<td>6.22%</td>
</tr>
<tr>
<td>My parents tell me I should save.</td>
<td>81.19%</td>
<td>18.81%</td>
</tr>
<tr>
<td>I save so I can buy something.</td>
<td>33.38%</td>
<td>66.62%</td>
</tr>
<tr>
<td>I save for vacation.</td>
<td>63.37%</td>
<td>36.63%</td>
</tr>
<tr>
<td>I save to have more money.</td>
<td>57.37%</td>
<td>42.63%</td>
</tr>
<tr>
<td>I save for clothing and shoes.</td>
<td>59.41%</td>
<td>40.59%</td>
</tr>
<tr>
<td>I save for gadgets and technology.</td>
<td>77.51%</td>
<td>22.49%</td>
</tr>
<tr>
<td>I save for a mobile phone.</td>
<td>78.64%</td>
<td>21.36%</td>
</tr>
<tr>
<td>I save for cosmetics.</td>
<td>87.13%</td>
<td>12.87%</td>
</tr>
</tbody>
</table>

The overview of aggregate information on the descriptive statistics for all variables at first time point and for the measured variables at second time point is given in Table 7.

Table 7 presents several findings. First, the scores on most of the variables are highly skewed toward greater values. For example, on most of the saving-related variables (parents’ norms, attitudes, self-efficacy, perceived behavioral control and intent), the average score is greater than 5, which indicates that Croatian pupils have remarkably positive beliefs about saving money. They believe their parents would support them in saving, they see saving as something fun, useful and positive instead of boring, useless or negative, they believe that they have the ability to save money and the resources needed to overcome the obstacles of saving money, they believe that saving is under their personal control and, most importantly, they largely intend to save some money in the following three months.
Table 7. Basic descriptive statistics for key study variables

<table>
<thead>
<tr>
<th></th>
<th>Time 1</th>
<th></th>
<th></th>
<th>Time 2</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>Cronbach's α</td>
<td>M</td>
<td>SD</td>
<td>Cronbach's α</td>
</tr>
<tr>
<td>Attitudes</td>
<td>6.04</td>
<td>1.17</td>
<td>.93</td>
<td>6.21</td>
<td>0.93</td>
<td>0.89</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>5.36</td>
<td>1.39</td>
<td>.89</td>
<td>5.77</td>
<td>1.15</td>
<td>0.89</td>
</tr>
<tr>
<td>PBC</td>
<td>5.64</td>
<td>1.21</td>
<td>.60</td>
<td>5.99</td>
<td>1.00</td>
<td>0.57</td>
</tr>
<tr>
<td>Saving intent</td>
<td>5.50</td>
<td>1.46</td>
<td>.85</td>
<td>6.07</td>
<td>1.08</td>
<td>0.84</td>
</tr>
<tr>
<td>FRB</td>
<td>2.76</td>
<td>1.10</td>
<td>.50</td>
<td>3.26</td>
<td>0.90</td>
<td>0.55</td>
</tr>
<tr>
<td>PDN</td>
<td>5.61</td>
<td>1.17</td>
<td>.72</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PIN</td>
<td>5.90</td>
<td>1.28</td>
<td>.76</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FDN</td>
<td>4.19</td>
<td>1.35</td>
<td>.66</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FIN</td>
<td>4.17</td>
<td>1.80</td>
<td>.87</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-control scale</td>
<td>3.83</td>
<td>1.23</td>
<td>.71</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Materialism scale</td>
<td>3.93</td>
<td>1.35</td>
<td>.77</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: PDN = parents’ descriptive norms; PIN = parents’ injunctive norms; FDN = friends’ descriptive norms; FIN = friends’ injunctive norms; PBC = perceived behavioral control; FRB = financially responsible behavior.

Table 8 displays a detailed report on parental norms.

Table 8. Parental norms

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>My parents save money.</td>
<td>5.64</td>
</tr>
<tr>
<td>My parents talk about saving money.</td>
<td>4.77</td>
</tr>
<tr>
<td>My parents think saving money is a good idea.</td>
<td>6.39</td>
</tr>
<tr>
<td>My parents would support my intention to save some money.</td>
<td>6.41</td>
</tr>
<tr>
<td>My parents think I should start saving money.</td>
<td>5.64</td>
</tr>
<tr>
<td>My parents would want me to start saving money.</td>
<td>5.63</td>
</tr>
</tbody>
</table>

When analyzing the mean of parental norms, the highest mean scores in both the descriptive and the injunctive were found in the following items: “My parents would support my intention to save some money” (6.41) and “My parents think saving money is a good idea” (6.39), while the lowest was found in the item “My parents talk about saving money” (4.77). The results obtained confirm that conversations about saving between parents and their children are relatively standard (average).
Second, Croatian pupils are relatively less certain of their peers’ views about saving, or of the fact that they would be supported by their peers in their saving efforts, specifically in the following items: “My friends talk about saving money” (very low score of 2.98), as well as “My friends would want me to start saving money” (3.80).

**Table 9. Friends’ norms**

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>My friends save money.</td>
<td>4.53</td>
</tr>
<tr>
<td>My friends talk about saving money.</td>
<td>2.98</td>
</tr>
<tr>
<td>My friends think saving money is a good idea.</td>
<td>5.05</td>
</tr>
<tr>
<td>My friends would support my intention to save some money.</td>
<td>4.72</td>
</tr>
<tr>
<td>My friends think I should start saving money.</td>
<td>3.97</td>
</tr>
<tr>
<td>My friends would want me to start saving money.</td>
<td>3.80</td>
</tr>
</tbody>
</table>

The highest score was recorded in the following item: “My friends think saving money is a good idea” (5.05). However, although the average peers’ norms results are lower than the parents’ norms, even those values are still slightly above the midpoint. This could indicate that children were uncertain about how their peers felt about saving money, as saving could be something that is not often discussed among peers of the age groups in question.

In order to determine the attitudes of children regarding saving and saving behavior, they were given a task to relate saving to one of the concepts in the pairs of antonyms (ten altogether). The overview of the children’s attitudes toward saving is presented in Figure 12.

**Figure 12. Attitudes toward saving**
Before moving to main analyses, below are the correlations among key variables (Table 10).

Table 10. Correlation matrix

<table>
<thead>
<tr>
<th>Name</th>
<th>Att2</th>
<th>Self1</th>
<th>Self2</th>
<th>PBC1</th>
<th>PBC2</th>
<th>Int1</th>
<th>Int2</th>
<th>FRB1</th>
<th>FRB2</th>
<th>PDN</th>
<th>PIN</th>
<th>FDN</th>
<th>FIN</th>
<th>Mat</th>
<th>SC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Att1</td>
<td>0.28</td>
<td>0.31</td>
<td>0.19</td>
<td>0.18</td>
<td>0.04</td>
<td>0.36</td>
<td>0.14</td>
<td>0.20</td>
<td>0.10</td>
<td>0.26</td>
<td>0.29</td>
<td>0.26</td>
<td>0.26</td>
<td>-0.01</td>
<td>0.07</td>
</tr>
<tr>
<td>Att2</td>
<td>1</td>
<td>0.24</td>
<td>0.39</td>
<td>0.18</td>
<td>0.24</td>
<td>0.26</td>
<td>0.44</td>
<td>0.10</td>
<td>0.19</td>
<td>0.10</td>
<td>0.15</td>
<td>0.09</td>
<td>0.21</td>
<td>-0.01</td>
<td>0.05</td>
</tr>
<tr>
<td>Self1</td>
<td>1</td>
<td>0.49</td>
<td>0.43</td>
<td>0.15</td>
<td>0.63</td>
<td>0.35</td>
<td>0.37</td>
<td>0.24</td>
<td>0.31</td>
<td>0.24</td>
<td>0.26</td>
<td>0.32</td>
<td>-0.09</td>
<td>0.19</td>
<td></td>
</tr>
<tr>
<td>Self2</td>
<td>1</td>
<td>0.29</td>
<td>0.38</td>
<td>0.36</td>
<td>0.65</td>
<td>0.24</td>
<td>0.41</td>
<td>0.08</td>
<td>0.10</td>
<td>0.13</td>
<td>0.23</td>
<td>-0.04</td>
<td>0.27</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PBC1</td>
<td>1</td>
<td>0.40</td>
<td>0.41</td>
<td>0.23</td>
<td>0.19</td>
<td>0.12</td>
<td>0.24</td>
<td>0.21</td>
<td>0.14</td>
<td>0.21</td>
<td>-0.01</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PBC2</td>
<td>1</td>
<td>0.18</td>
<td>0.42</td>
<td>0.08</td>
<td>0.12</td>
<td>0.06</td>
<td>0.05</td>
<td>0.11</td>
<td>0.03</td>
<td>0.11</td>
<td>0.11</td>
<td>-0.01</td>
<td>0.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Int1</td>
<td>1</td>
<td>0.36</td>
<td>0.38</td>
<td>0.18</td>
<td>0.31</td>
<td>0.29</td>
<td>0.35</td>
<td>-0.01</td>
<td>0.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Int2</td>
<td>1</td>
<td>0.17</td>
<td>0.33</td>
<td>0.08</td>
<td>0.16</td>
<td>0.11</td>
<td>0.25</td>
<td>-0.01</td>
<td>0.12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FRB1</td>
<td>1</td>
<td>0.34</td>
<td>0.15</td>
<td>0.17</td>
<td>0.12</td>
<td>0.20</td>
<td>0.03</td>
<td>0.12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FRB2</td>
<td>1</td>
<td>0.07</td>
<td>0.16</td>
<td>0.03</td>
<td>0.12</td>
<td>-0.06</td>
<td>0.14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PDN</td>
<td>1</td>
<td>0.42</td>
<td>0.31</td>
<td>0.26</td>
<td>-0.09</td>
<td>0.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PIN</td>
<td>1</td>
<td>0.17</td>
<td>0.40</td>
<td>0.07</td>
<td>-0.06</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FDN</td>
<td>1</td>
<td>0.56</td>
<td>-0.04</td>
<td>0.07</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FIN</td>
<td>1</td>
<td>0.03</td>
<td>0.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mat</td>
<td>1</td>
<td>-0.34</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SC</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Att1 and Att2 = attitudes at Time 1 and Time 2; Self1 and Self2 = self-efficacy at Time 1 and Time 2; PBC1 and PBC2 = perceived behavioral control at Time 1 and Time 2; Int1 and Int2 = behavioral intention at Time 1 and Time 2; FRB1 and FRB2 = financially responsible behavior at Time 1 and Time 2; PDN = parental descriptive norms at Time 1; PIN = parental injunctive norms at Time 1; FDN = friends’ descriptive norms at Time 1; FIN = friends’ injunctive norms at Time 1; Mat = materialism; SC = self-control.

All values lower that r = .13 are significant at the level of p < .01; all values lower than r = .10 are significant at the level of p < .05.

6.2 Children’s saving and spending habits

The first goal of this study was to get a complete overview of the children’s spending and saving behaviors and habits, and to see how those related to their gender, age, and residence, as well as their parents’ education levels.
6.2.1 Differences in children’s spending habits with respect to gender, age, residence, and parents’ education levels

Table 11 presents fifteen categories on which pupils could have spent their money in the previous month. These categories are ranked from the one with the highest percentage of variety of goods and services on which pupils spend money to the one with the lowest percentage of variety.

In order to determine whether some of the categories cluster together and reduce the number of categories to a smaller but meaningful number of dimensions, principal component analysis was carried out.

The principal component analysis showed that the starting fifteen categories can be grouped into five different clusters of components that could be referred to as spending habits. The five components were labelled “Technology,” “Hobbies,” “Consumption,” “Fashion” and “Going out.” Technology comprised spending money on computers and video games. Hobbies comprised spending money on pets, sports activities, and clothing. Consumption comprised spending money on food and beverages. Fashion comprised spending money on cosmetics and magazines. Finally, going out comprised spending money on transportation, going out and cinema.

Table 11. Percentages of pupils’ spending on different categories of goods, services, or causes

<table>
<thead>
<tr>
<th>Category</th>
<th>Proportion of pupils’ spending money on...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food</td>
<td>85%</td>
</tr>
<tr>
<td>Beverages</td>
<td>70%</td>
</tr>
<tr>
<td>Clothing</td>
<td>69%</td>
</tr>
<tr>
<td>Sport</td>
<td>43%</td>
</tr>
<tr>
<td>Going out</td>
<td>40%</td>
</tr>
<tr>
<td>Cinema</td>
<td>34%</td>
</tr>
<tr>
<td>Technology</td>
<td>32%</td>
</tr>
<tr>
<td>Pets</td>
<td>27%</td>
</tr>
<tr>
<td>Cosmetics</td>
<td>24%</td>
</tr>
<tr>
<td>Video games</td>
<td>24%</td>
</tr>
<tr>
<td>Computers</td>
<td>22%</td>
</tr>
<tr>
<td>Transportation</td>
<td>20%</td>
</tr>
<tr>
<td>Books</td>
<td>16%</td>
</tr>
<tr>
<td>Bicycles</td>
<td>16%</td>
</tr>
<tr>
<td>Magazines</td>
<td>13%</td>
</tr>
</tbody>
</table>
Next, total scores for each of the five components were calculated by averaging the proportions of pupils spending money on each of the categories in the component. The scores obtained are shown in Table 12.

**Table 12.** Total scores for five components of spending (spending habits)

<table>
<thead>
<tr>
<th>Component</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumption</td>
<td>0.77</td>
</tr>
<tr>
<td>Hobbies</td>
<td>0.46</td>
</tr>
<tr>
<td>Going out</td>
<td>0.31</td>
</tr>
<tr>
<td>Technology</td>
<td>0.26</td>
</tr>
<tr>
<td>Fashion</td>
<td>0.18</td>
</tr>
</tbody>
</table>

The obtained results allowed for a more detailed examination into the potential differences in spending habits between different groups of pupils. First, what was considered to be of interest were the potential gender differences in spending habits. To investigate that, a one-way MANOVA was conducted, with the five component scores as dependent variables and gender as an independent variable. The results show a significant multivariate effect of gender ($F (5, 663) = 23.91, p = .000$). On the univariate level, there was a significant effect of gender on technology ($F (1, 667) = 55.69, p = .00$) and fashion ($F (1, 667) = 50.25, p = .00$) scores. Specifically, boys scored significantly higher than girls did on the technology component ($M = 0.25, SD = 0.40$ for boys and $M = 0.16, SD = 0.26$ for girls), while girls scored significantly higher than boys did on the fashion component ($M = 0.10, SD = 0.25$ for boys and $M = 0.26, SD = 0.31$ for girls). There were no other significant differences. In sum, our results showed that, as expected, boys spent their money on computers and video games more often than girls did, while girls spent money on cosmetics and magazines more often than boys did.

Furthermore, it was important to confirm whether there were differences in spending habits between pupils from different grades. This was done by conducting a one-way MANOVA with the five component scores as dependent variables and grade as an independent variable. The multivariate effect of grade on dependent variables was significant ($F (15, 1995) = 2.44, p = .00$). However, on the univariate level, only one effect was significant, that of grade on going out ($F (3, 667) = 4.47, p = .00$). Specifically, older pupils from higher grades spent their money on going out more often than did younger pupils ($M = 0.33, SD = 0.29$ for the eighth grade and $M = .24, SD = .28$ for the fifth grade). There were no other significant differences.
An additional attempt was to determine whether there were differences in the pupils’ spending habits regarding the size of their place of residence. In order to do that, the pupils were initially grouped into four different categories based on the population size of their hometowns. A total of 290 pupils lived in villages and small towns with populations under 10 000; 124 pupils lived in towns with populations between 10 000 and 50 000; 81 lived in bigger towns with populations between 50 000 and 200 000; and 180 pupils lived in Zagreb, the capital and the largest city in Croatia. As in the previous two cases, a one-way MANOVA was conducted, with component scores as dependent variables and the four categories of population as independent variables. The multivariate effect was again significant (F (15, 2007) = 6.07, p = .00). On the univariate level, the only significant effect was again the one concerning going out. Specifically, pupils from smaller towns spent less on going out from the pupils from bigger towns and cities (M = 0.22, SD = 0.25 for places with populations under 10 000 and M = 0.43, SD = 0.31 for Zagreb).

Finally, an investigation into whether the described patterns of spending habits differed regarding the parents’ education levels, specifically the mothers’, was conducted using a one-way MANOVA with component scores as dependent variables and the mothers’ levels of education as the independent variable. The multivariate effect was significant (F (15, 1914) = 2.57, p = .01), meaning that the mothers’ education had a significant effect on the children’s spending habits. On a univariate level, this difference comes from the differences in spending on fashion items and going out. Specifically, it seems that a significantly smaller number of children whose mothers had college degrees, namely bachelor’s degrees (M = 0.17, SD = 0.02), master’s or doctor’s degrees (M = 0.19, SD = 0.04), spent money on fashion-related items compared to children whose mothers only finished elementary school (M = 0.31, SD = 0.05). Conversely, more children whose mothers had college degrees, namely bachelor’s degrees (M = 0.34, SD = 0.02), master’s or doctor’s degrees (M = 0.34, SD = 0.04), spent money on going out compared to children whose mothers only finished elementary school (M = 0.18, SD = 0.05).

Therefore, all sociodemographic variables, gender, age, place of residence and parental education, seem to have an effect on the children’s spending habits.
6.2.2 Differences in saving attitudes, norms, self-efficacy, perceived control, intent, and financially responsible behavior with respect to gender, age, residence, and parents’ education levels

In a fashion comparable to spending habits, the effect of sociodemographic variables on those variables related to saving and financially responsible behavior was examined. Since saving attitudes, norms, self-efficacy, perceived control, and behavioral intent are predictors of behavior within the Theory of planned behavior (TPB), and since they were all mutually positively correlated, they were analyzed separately from responsible financial behavior. Specifically, to analyze the differences in the variables with respect to gender, age, residence, and parents’ education levels, four MANOVAs with eight dependent variables (TPB variables: attitudes, parental descriptive and injunctive norms, friends’ descriptive and injunctive norms, self-efficacy, perceived control, and behavioral intent), and sociodemographic variables as independent variables were conducted. In addition to those analyses, four one-way ANOVAs with financially responsible behavior as the dependent variable and four sociodemographic variables as independent variables were conducted.

a) Gender differences

In order to see if there existed gender differences in the variables related to saving, a one-way MANOVA with eight TPB variables as dependent variables and gender as an independent variable was conducted. There was a significant multivariate effect of gender on dependent variables (F (8, 616) = 2.56, p = .01). However, on a univariate level, the effect was significant only for parental descriptive norms, where boys scored somewhat lower than girls did (M = 5.51, SD = 1.14 vs. M = 5.80, SD = 1.09), meaning that they perceived their parents to be discussing saving, or themselves saving.

To test whether there were gender differences in financially responsible behavior, a one-way ANOVA with RFB as the dependent variable and gender as independent was conducted. The ANOVA was significant (F(1, 652) = 5.32, p = .02), meaning that the girls exhibited higher financially responsible behavior than did the boys (M = 2.86, SD = 0.06 vs. M = 2.67, SD = 0.06).

b) Differences with respect to age

To examine whether age had an impact on dependent variables, a one-way MANOVA and a one-way ANOVA with grade as the independent variable
were conducted again. The MANOVA was significant (F(24, 1848) = 1.62, p = .03). However, looking at a univariate level, the children from different grades differed only in friends’ descriptive norms. Specifically, older children (those from the eighth grade) scored lower (M = 3.91, SD = 1.27) than did younger children from the fifth (M = 4.41, SD = 1.32) and sixth grade (M = 4.36, SD = 1.28). This means that older children perceived their friends to be discussing saving and saving themselves less often than did younger children.

Also, a one-way ANOVA was conducted to check for the effect of grade on financially responsible behavior. However, the effect was not significant (F(3, 652) = 2.50, p = .06), meaning that there were no significant differences in financially responsible behavior of children regarding their grade.

c) Differences with respect to place of residence

In order to examine whether the size of the place of residence had an impact on variables related to saving and responsible financial behavior of the children, four residence size categories were used as the independent variable, performing a one-way MANOVA and ANOVA.

The MANOVA was not significant (F(24, 1878) = 0.66, p = .89), meaning that there were no differences in saving attitudes, norms, self-efficacy, perceived control, and intention related to the size of the place of residence. The ANOVA was also insignificant (F(3, 661) = 1.06, p = .37), meaning that there were no differences in financially responsible behavior between children regarding their residence.

d) Differences with respect to parental educational

Since parents are one of the crucial factors in financial socialization of children, an investigation into the potential differences in children’s attitudes, perceived social norms, self-efficacy and control beliefs, saving intents and responsible financial behavior with regard to their parents’ education levels was carried out. As a measure of parents’ education, the participants were asked to indicate the level of education of their mothers.

Again, a MANOVA with eight dependent variables and the mothers’ education levels as an independent variable was conducted. The multivariate effect was significant (F (24, 1770) = 1.89, p = .01), meaning that the mothers’ education levels had a significant impact on saving-related dependent variables. On a univariate level, this translated into a significant effect of the mothers’ education on the parents’ descriptive social norms and friends’ injunctive norms.
Specifically, children whose mothers only had elementary school degrees scored significantly lower on parents’ descriptive norms (M = 4.94, SD = 1.37) than did the children whose mothers had high school degrees (M = 5.67, SD = 1.14), college (bachelor’s) degrees (M = 5.73, SD = 1.02), or master’s or doctor’s degrees (M = 5.76, SD = 1.00). This means that the pupils perceived their mothers with elementary school degrees to save or talk about saving less often. Furthermore, children whose mothers had elementary school degrees scored significantly higher on friends’ injunctive norms (M = 4.74, SD = 1.47) than did the children whose parents had master’s or doctor’s degrees (M = 3.72, SD = 1.76). This means that the children of less educated parents perceived their friends to be more supportive of their saving efforts than did the children of parents with higher education levels.

A one-way ANOVA with financially responsible behavior as the dependent variable and mothers’ education levels as independent variables was insignificant (F(3, 629) = 0.77, p = .55), meaning that the children did not differ in their responsible financial behavior with respect to their mothers’ education levels.

6.3 Predictors of children’s saving intentions and behaviors: testing the extended Theory of planned behavior with saving attitudes, parental and peer norms, perceived behavioral control, self-efficacy, materialism, and self-control as predictors of saving intentions and responsible financial behavior

To test whether financially responsible behavior can be adequately explained by means of the extended Theory of planned behavior, an examination was taken in order to answer the second question of the study. In the Theory of planned behavior, the usual predictors of behavior are attitudes, different kinds of social norms, control beliefs, and behavioral intentions. This model was extended in order to see whether materialism and self-control can explain financially responsible behavior over and above the traditional TPB predictors. This was done by fitting two different SEM models. In the first one, the effects of the traditional TPB variables were left to be freely estimated by the model while the effects of materialism and self-control on behavioral intention and behavior were fixed at 0. In the second model, all the effects were unconstrained, i.e. they were freely estimated by the model. If the second model demonstrated a significantly better fit to the data compared to
the first one, where the effects of materialism and self-control were fixed at 0, that would mean that materialism and self-control contributed to behavioral intentions or responsible saving behavior over the traditional TPB variables.

In order to investigate whether the children’s saving intentions and responsible financial behavior can be described appropriately by the Theory of planned behavior, the relationships between the variables assumed by the Theory of planned behavior were translated into a structural equation model, specifically, a model where the latent attitudes, norms (all four types of norms) and control variables (perceived behavioral control and self-efficacy) predicted saving intent and, in turn, saving intent, together with control variables, predicted responsible financial behavior. In addition, the latent variables of materialism and self-control were also included in the model as predictors of behavioral intention and responsible financial behavior, but these effects were fixed at 0 in the first model. All latent variables were defined by their respective manifest variables as described in the methodology, except for responsible financial behavior, which was included in the model as a manifest variable.

The first model showed an acceptable fit to the data ($\chi^2 (989) = 2678.76$, $p = .00$; $CFI = .87$, $RMSEA = .06$; $SRMR = .06$). In the measurement part of the model, all the manifest variables’ loadings were considerably high (all loadings greater than $\lambda = .40$ and a majority of loadings in the range between $\lambda = .60$ and $\lambda = .90$). This means that manifest variables describe latent variables very well, i.e. it is justifiable to conclude that the latent variable influences individual responses on the respective manifest variables. The second model, with all effects freely estimated, also showed an acceptable fit to the data ($\chi^2 (985) = 2672.11$, $p = .00$; $CFI = .87$, $RMSEA = .06$; $SRMR = .06$). However, when comparing the two models, the second one did not fit the data significantly better compared to the first model ($\Delta \chi^2 (4) = 6.66$, $p = .15$). This means that the effects of materialism and self-control on behavioral intention and financially responsible behavior did not differ from 0, and that a more parsimonious model, one without those two variables as predictors, proved more appropriate. The model is shown in Figure 13.
In the structural part of the model, out of all predictors of saving intent, only the parents’ injunctive norms and self-efficacy were significant predictors of saving intent. This means that the more the children perceived their parents as supportive of their saving efforts, and the higher their confidence in their abilities to save, the greater would be their intent to start saving for something in the future. Furthermore, intentions to save money, as well as self-efficacy, were significant predictors of financially responsible behavior. It seems that saving self-efficacy is an especially important determinant of financial behavior in children, given that it predicts behavior both directly and indirectly through saving intentions. The model has proved to be effective in explaining the variance in saving intentions ($R^2 = .60$) to a great extent, as well as the variance in responsible financial behavior ($R^2 = .25$), albeit to a somewhat lesser extent. Therefore, it seems that the education/intervention aimed at improving the children’s self-efficacy and saving intentions could be beneficial for developing more responsible financial behaviors in the future. Thus, the final aim of this study was to see whether the children’s...
responsible saving behavior, saving intentions, saving self-efficacy, and attitudes could be influenced by financial education and explicitly tailored psychological intervention.

### 6.4 Efficiency of financial education and behavioral intervention

As described earlier, there were three groups of children involved in the study. In the first group, children received only a financial education workshop, whereas in the second group, financial education was accompanied by psychological intervention. Specifically, children participated in three tasks related to self-persuasion, goal setting, and the development of implementation intentions. There was also a third group, which comprised children who would be provided with financial education in the second wave. Thus, this group served as a control group, who only answered the questionnaires but did not participate in education/workshop.

To analyze the results of the study, four different 2x3 mixed-model ANOVAs with attitudes toward saving, saving intention, saving self-efficacy, and the index of financially responsible behavior (budgeting, making financial goals, saving, and not spending all of the pocket money) as dependent variables were conducted. The dependent variables were measured at two different time points, immediately prior to the workshop/intervention and approximately three months after for each of the three groups (control group, workshop group and intervention group).

**a) Attitudes toward saving**

A 2x3 mixed model ANOVA with attitudes toward saving as the dependent variable showed a significant effect of time (F (1, 438) = 5.71, p = .017, partial eta square = .013), as well as a significant effect of group (F (2, 438) = 4.99, p = .007, partial eta square = .022). While there were no differences between the groups at the first time point, at the second time point the students who attended the workshop demonstrated significantly more positive attitudes toward saving compared to the control group. Furthermore, the students who attended the workshop showed a considerable increase in attitudes toward saving from time 1 to time 2, while this increase was insignificant for the other groups. The effects can be seen in Figure 14.
Figure 14. Changes between two time points in attitudes toward saving for three independent groups of students

b) Saving intention

A 2x3 mixed model ANOVA with saving intentions as the dependent variable showed a significant effect of time (F (1, 442) = 51.56, p = .000, partial eta square = .104), as well as a significant effect of group (F (2, 442) = 10.32, p = .000, partial eta square = .045). The effects were qualified by a significant time x group interaction (F (2, 442) = 5.30, p = .005, partial eta square = .023).

Again, as in the case with attitudes, there were no significant differences in saving intentions between groups at time 1. However, at time 2 students from both the workshop and intervention groups showed higher saving intentions than did the students from the control group, while there were no differences between the two experimental groups. Looking across the two time points, both the workshop and the intervention increased the students’ saving intentions significantly, and that specific increase was not observed in the control group. The effects can be seen in Figure 15.
Figure 15. Changes between two time points in saving intentions for three independent groups of students

c) Saving self-efficacy

A 2x3 mixed model ANOVA with saving self-efficacy as the dependent variable showed a significant effect of time ($F(1, 439) = 33.86, p = .000$, partial eta square = .072), as well as a significant effect of group ($F(2, 439) = 7.90, p = .000$, partial eta square = .035). Once more, these effects were qualified by a significant time x group interaction ($F(2, 442) = 5.55, p = .004$, partial eta square = .025).

The picture was fairly similar to the one with saving intentions as the dependent variable. Namely, there were no significant differences in saving self-efficacy between groups at time 1, but the students from the workshop and intervention groups once more scored higher than did the students from the control group, while there were no differences between the two experimental groups. Looking across the two-time points, both the workshop and the intervention increased the students’ saving self-efficacy significantly, and that specific increase was not observed in the control group. The effects can be seen in Figure 16.
d) Responsible financial behavior

Finally, in the last step, the differences between time points and between groups in the responsible financial behavior index (students’ reports on budget keeping, financial goal setting, saving money, and not spending all of the pocket money) were analyzed. Again, a 2x3 mixed model ANOVA that showed a significant effect of time ($F(1, 391) = 49.83, p = .000$, partial eta square = .113), as well as a significant effect of group ($F(2, 391) = 7.22, p = .001$, partial eta square = .036) was fitted. Similarly, as with the analyses above, these effects were qualified with a significant time x group interaction ($F(2, 442) = 5.55, p = .004$, partial eta square = .025).

The picture was fairly similar to the one with saving intentions as the dependent variable. Namely, there were no significant differences in saving self-efficacy between groups at time 1, but the students from the workshop and intervention groups once more scored higher than did the students from the control group, while there were no differences between the two experimental groups. Looking across the two-time points, both the workshop and the intervention increased the students’ saving self-efficacy significantly, and that specific increase was not observed in the control group. The effects can be seen in Figure 16.

![Figure 16. Changes between two time points in saving self-efficacy for three independent groups of students](image-url)
Setting, saving money, and not spending all of the pocket money were analyzed. Again, a 2x3 mixed model ANOVA that showed a significant effect of time (F(1, 391) = 49.83, p = .000, partial eta square = .113), as well as a significant effect of group (F(2, 391) = 7.22, p = .001, partial eta square = .036) was fitted. Similarly, as with the analyses above, these effects were qualified with a significant time x group interaction (F(2, 391) = 3.04, p = .049, partial eta square = .015).

At the first time point, there were no differences between the groups in responsible financial behavior, but at the second time point, the students from the workshop and intervention groups showed significantly higher financially responsible behavior than did the students from the control group (there were no differences between the workshop and intervention groups). In line with that, both the students from the workshop and the intervention groups showed an increase in responsible financial behavior between the two points in time, while the change between the two time points for the control group was not significant.

The effects are depicted in Figure 17.

**Figure 17.** Changes between two time points in responsible financial behavior for three independent groups of students
7. DISCUSSION AND CONCLUSION

This research study extends valuable support to the core of published literature investigating financial behavior and contributes to the understanding of a relatively neglected area of saving behavior at an early age. The discoveries of the study highlight the determinants of saving behavior and responsible financial behavior of children.

7.1 Children’s spending and saving habits and attitudes

The average income of children aged 11-14 is 125.34 kuna per month, which accounts for 1.84% of the average net salary in Croatia (DZS, 2020). The average income of children is slightly higher in higher grades of elementary school, i.e. as children grow, they are more likely to receive more allowance. Interestingly, boys receive more money than girls do, but the difference is much larger between grades 5 and 6 than between grades 7 and 8, in line with what was discovered in the UK (Furnham, 1999). Furthermore, corresponding to other studies (McNeal and Yeh, 1997), boys in Croatia spend more than girls do. However, they also receive more money to spend, so that should be reasoned contextually.

The results suggest that parental allowances enable children to save on their own, which confirms the thesis posited by Bucciol and Veronesi (2014). A total of 81.16% of children who received parental allowance created their savings funds and managed to save portions of it. In terms of motives to save, the children evidently do not save because their parents tell them to, nor because their friends save. Croatian children’s behavior indicates predominant saving motives comparable to those of children from other studies (Furnham, 1999; Denegri Coria et al, 2008; Brown and Taylor, 2016): to buy something special or simply to have money. All of the above has already been listed under relevant children saving strategies (Otto, 2009).
This study has shown that Croatian children of similar age are predominantly necessity and discretionary spenders, which means that they use their money for school supplies, clothes and everyday expenses rather than save for a long-term oriented goal. They mostly spend on food (85%), beverages (70%), clothing (69%), sport (40%), and going out (40%); all of which confirms the prevalent consumption categories of children from other studies (Furnham, 1999). When investigating significant differences between boys and girls, stereotypical results were confirmed by this study: boys spend their money on computers and video games, while girls spend on cosmetics and magazines more often than boys do. In terms of grade differences relative to spending categories, as intuitively expected, older students from higher grades spend more money on going out than do their younger colleagues.

Regarding the differences based on age, it was noted that older children spent more money on fun and going out when compared to younger groups, as was also expected (Furnham and Argyle, 1998; Furnham, 1999).

In relation to the size of the place of residence, the differences in spending habits were shown only in the category of going out (and related expenses), where children from smaller towns and villages spent less, most probably due to the lack of spending possibilities.

Interestingly, the children whose mothers had more advanced education degrees spent less on fashion items, but more on going out.

Such findings can, on the one hand, be interpreted through the parents acting as socialization agents, and the influence of social values, together with the connotation of going out, on the other. The mothers with more advanced degrees devoted more time to communicating the nature and importance of brand influence, especially in terms of fashion items, making their children more resistant to such reasoning. Also, it can be assumed that more highly educated parents and therefore spend more on going out themselves, so their children are more likely to emulate such behavior. With regard to children’s attitudes toward saving, they were shown to be mostly highly positive. Most children described saving as important, meaningful and smart. Interestingly, girls exhibited higher financially responsible behavior than did the boys. Such findings can be interpreted through the notion of girls being less involved in the process of financial socialization (proved by Mortimer and Shanahan, 1994, and this study), creating lower levels of self-esteem and higher levels of caution, all of which is likely to result in less spending and more saving.

Older children perceive their friends to discuss saving money less often than do younger children. This is in line with research conducted on consumer socialization of children, as they tend to be more perceptive of brands and con-
sumption with years (Dotson and Hyatt, 2005). Therefore, it can be concluded that, due to the fact that older children talk more about brands, advertising and the social value of products, they tend to talk less of saving.

According to the relevant literature, parents have the most prominent roles in the process of shaping responsible consumption behavior of children (Jorgensen and Savla, 2010; Sohn et al, 2012; Van Camenhout, 2015). To test the “Like mother like daughter,” or “Like father like son” proverbial hypotheses, the parental role was investigated both directly and indirectly.

Firstly, observations were made concerning the potential differences in children’s attitudes, perceived social norms, self-efficacy, and control beliefs, saving intents and responsible financial behavior relative to their parents’ education levels. For that purpose, the education level of the mother was used as measure of the parents’ education level in general. Surprisingly, the results obtained are not in line with the findings of earlier research efforts referenced.

The effect was not significant, implying that the mother’s education does not affect the child’s beliefs about saving, nor does it impact responsible financial behavior. The only exception was found in the case of parental descriptive norms. It seems that children whose parents had lower levels of education (elementary school) perceived their parents to save and discuss saving less often than did the children of parents with higher formal degrees.

As a speculative reason for this finding, it is possible to presume that this difference is due to the fact that parents with lower levels of education earn lower incomes, which in turn makes them incapable of saving and unwilling to engage in discussions about saving. However, as the parents’ incomes were not measured, all this is purely speculative. Nevertheless, the lack of family discussions about saving and the lack of opportunities to learn by observation can be detrimental to children’s financial socialization.

Communication between parents and children is extremely important for financial socialization (Hayta, 2008) as the children whose parents provided them with learning opportunities exhibited financial behavior that could be categorized as more responsible (John, 1999; Clarke et al, 2005). It has been shown that parents have the most important roles in the financial socialization of their children (Ward, 1974; Kourilsky, 1977; Rettig, 1985; Moschis, 1985; Rettig and Mortenson, 1986; Danes, 1994; Clarke et al, 2005; Schuchardt et al, 2009) in providing them with opportunities to learn by observation and imitation (Bandura and Walters, 1963).

The effect of parental financial role-modeling on the children’s subsequent financial behavior may also be indirect; for example, by promoting a norm or attitude toward financial behavior (Webley and Nyhus, 2006, 2013; Shim et al,
2010; Bucciol and Veronesi, 2014). Thus, the effects of parental norms and attitudes on the children’s saving intentions and responsible financial behavior were tested. Parental norms were shown to have a significant positive impact on the future orientation of the children to save. Specifically, it was confirmed that the parents’ injunctive norms had a significant effect on the children’s intentions to save money: the more the children perceived their parents as supportive in their saving decisions, the more they planned to start saving.

In terms of the differences between girls and boys in relation to their parents, boys perceived their parents to discuss saving or save themselves more than did the girls. Such findings are in line with published research. As they are given more money (Mortimer and Shanahan, 1994) and enjoy more financial inclusion, it is logical that they communicate more about the matters related to finances and saving.

Children of less educated parents perceived them to save or talk about saving less often.

Logically, less educated parents hold less knowledge and funds and therefore engage less in saving and talking about saving. This leads to their children being implicitly less educated on saving. In line with that, this research study has also shown that children of less educated parents perceived their friends to be more supportive of their saving efforts than did the children of parents with higher education levels. Due to the fact that their parents failed to support them in their saving behavior, the second most dominant agent of financial socialization of children takes the throne of influence.

7.2 Predictors of children’s saving behavior within the TPB framework

As for the Theory of planned behavior tested within this research and its relation to saving behavior of children, it presents a valuable addition to the lack of studies published in the area. The research results indicate that the question whether the children’s saving intentions and behaviors can be explained and predicted by their attitudes, subjective social norms and perceived behavioral control over saving is worth pursuing. The greatest value that this methodology generates is the tracking of the actual change in reported saving behaviors.

According to the results, significant predictors of saving intentions are parental injunctive norms and self-efficacy (the most significant). Therefore, the importance of parental influence in the process of financial socialization of children with respect to saving has been confirmed once more, in line with
numerous other research efforts (Leiser and Ganin, 1996; Webley and Nyhus, 2006, 2013; Bucciol and Veronesi, 2014; Grohmann, Kouwenberg and Menk-hoff, 2015). Parental attitudes, support and teaching in relation to saving play a vital role in the children's intentions to save, as they create and develop higher self-efficacy beliefs, better self-control, and independent economic behavior (Otto, 2013). For children to save, it is very important that they have a solid family structure supportive of saving as a good and necessary habit, reinforcing the belief that anyone can save if they decide to. As parents are the most important agents in the process of the socialization of children as consumers (Beutler and Dickson, 2008), such results confirm the starting assumptions. As financial socialization happens in everyday life through the creation of financial attitudes and capabilities (Alhabeeb, 1996; Jorgensen and Savla, 2010; Kim, Yang and Lee, 2015), parents bear great responsibility in the creation of future “savers.” Interestingly, even though peer influence has been shown as relevant in the creation of wants related to spending (Hay-ta, 2008), it has not been proved as relevant in terms of saving. Such results were also confirmed by the analysis of saving motives, where more than 93% of the children stated that they did not save because their friends saved. The findings could indicate that the children of that age are simply not aware of their friends' thoughts and attitudes on saving as this might be a topic that is generally not discussed among elementary school children. The results pertaining to the variable of friends' descriptive and injunctive norms, generally around the midpoint of the scale, are in line with this interpretation. The fact that, on average, children neither agreed nor disagreed about whether or not their friends saved, talked about saving or would provide them with support in their saving decisions could mean that they were simply unaware of their peers’ attitudes toward saving and were therefore not influenced by them. Thus, based on the results, there is ground to offer the following conclusion: the parents present a greater influence on elementary school children's decisions about saving than do their peers.

Interestingly, attitudes were not proved to be influential in the context of the children's intentions to save – which might be explained by the lack of variability, as most children had very positive attitudes toward saving. Moreover, even though it could be expected that proneness to materialism would negatively influence their saving intentions, as well as responsible financial behavior (Opree, Buijzen and Valkenburg, 2012), the children's beliefs about materialism were not proved to be substantial predictors of their intentions to save or responsible financial behavior.

Moving forward, self-efficacy has been proved as an even stronger predictor of saving intentions. A very important notion was confirmed: promoting positive attitudes toward saving without self-efficacy will not result in saving (Bandura, 1977). Additionally, when discussing responsible financial behavior
of children, saving intentions and self-efficacy were shown to exert significant influence. The findings point toward a great need to create self-belief and confidence among children so that their destinies might lie in their own hands and that financially, they become able to control their futures, regardless of circumstances. The children’s ability to save needs to be shaped and reinforced by the following factors: they need to be convinced they can save and that they can overcome all obstacles in the way. To connect that with the efficiency of the education, as financial knowledge has very little significance in responsible financial behavior (Barbić, Lučić and Chen, 2019) – this research has also shown that the children’s attitudes do influence behavior, yet not significantly – for the education to be effective, it needs to be designed in such a way to address and create self-efficacy.

7.3 Effectiveness of experimental financial education

In terms of testing the effectiveness of the educational program, the majority of research studies published in financial education of children measure the shift in knowledge or the basic understanding of financial concepts, i.e. financial literacy (Larkins and Shaver, 1969; Kourilsky, 1977; Laney, 1989; Sosin, Dick and Reiser, 1997; Berti and Monaci, 1998; Roos et al, 2005; Schug and Hagedorn, 2005; Sherraden et al, 2007; Grody et al, 2008; Sherraden et al, 2011; Go et al, 2012; Batty, Collins and Odders-White, 2014). However, this book intends to challenge the effectiveness of traditional approach to financial education as opposed to using designed behavioral interventions.

The aim of this study was, among other things, to explore financial education programs intended at developing saving behavior of children in primary schools. The experimental research study was carried out to investigate the efficiency of traditional financial education versus behavioral intervention relative to the improvement in saving attitudes, saving intentions, self-efficacy, and financially responsible behavior. The behavioral intervention was developed based on three established psychological phenomena: self-persuasion, goal setting, and the development of implementation intentions.

The results gained from this experiment showed that both the education implemented by this study and behavioral intervention had a positive impact on saving attitudes, saving intentions, saving self-efficacy, and responsible financial behavior, in line with similar findings (Schug and Hagedorn, 2005; Batty, Collins and Odders-White, 2014). Students who attended the workshops fared significantly better compared to the students from the control
These results are in line with some of the previously published studies, and show that saving attitudes and behaviors can be modified through experimental education among children (Danes and Haberman, 2007; Go et al, 2012; Schug and Hagedorn, 2005; Sherraden et al, 2011; Ulkumen and Cheema, 2011). By gathering data two months prior to the intervention and three months after, we have ensured such conditions that the students were not “taught to the test,” as advised by relevant literature (Batty, Collins and Odders-White, 2014). Therefore, we can conclude that financial education is an effective tool for the development of positive beliefs about saving and consequently saving behaviors.

Saving intentions and responsible financial behavior have demonstrated results comparable to those of attitudes. There was a statistically significant difference in saving intentions and responsible financial behavior between both the experimental and control groups. Also, a significant score increase between two time points for experimental groups, but not for the control, was observed. These results corroborate previously published work that revealed positive effects of education on behavioral intentions and behavior (Danes and Haberman, 2007; Sherraden et al, 2011; Go et al, 2012; Whitebread and Bingham, 2013). In terms of self-efficacy, the results paint a similar picture. Once again, financial education proved to be an important tool in the creation of self-efficacy beliefs that consequently lead to behaviors, which is in line with other relevant research studies (Danes and Haberman, 2007).

However, neither of the four investigated variables showed a significant difference between two experimental groups – traditional education and behavioral intervention. Such findings might point toward possible inefficiency of using behavioral intervention on children in terms of financial behavior due to their cognitive limitations and other specific characteristics related to their social and mental development.

7.4 Limitations and future research recommendations

This study is not without its limitations. They primarily arise from the type of sample which is, due to the nature of the project itself, most probably biased toward middle class children, who save actively. It would have been rather surprising to have found that the children from families who lived in austerity conditions even considered saving. One of the main limitations of this study is its reliance on self-reported data. Specifically, some children might have
given socially desirable answers; some might have copied answers from their friends, or even been under the influence of their teachers. However, this issue can be found across many studies that use self-reported data, especially when researching children. Nonetheless, there is still clear evidence of the claims presented in this book, and they should be taken seriously.

Moreover, this study provides a very clear direction for the creation of financial education programs aimed at children, but also for public policy regarding the development of financial literacy and consumer protection of children. The book also provides great venue for future research.

Many children, grown into young adults entering the financial market as consumers, have neither grounded experience nor the knowledge on the occurrence of negative consequences related to irresponsible financial behavior. Moreover, they tend to think that such incidents happen to other people and are mostly molded by their parents as major agents of financial socialization. As most current financial education programs are of ad hoc nature, future research should also try to develop financial education programs that include both parents and children, as that has not been subject of research to date; especially the parents with lower levels of education and income as they are the ones who save less and talk less about saving.

Additionally, future research should focus on the further development and refinement of behavioral intervention experiments within programs of financial education of children aged 10-14. We maintain that the more plausible reason is that the interventions were not customized and tailored for children. Therefore, we strongly believe that, once improved, the interventions based on the three psychological phenomena can work well, and we will continue to develop them. Particularly, we will adjust the intervention elements in more detail, both in visual perception and cognitive processing, relative to the children’s preferences. The handout that they received included only two exercises and was not developed in such a way to engage them in the task continuously during the three-month period. This one-time handout was evidently insufficient. In the future, we will also use videos, piggy banks, and more detailed handouts. Moreover, we will include external triggers as tools that will constantly remind them of the task at hand, bridging over the intention-behavioral gap related to financial goals (Sheeran and Webb, 2016). Lastly, for goals to be effective, people need to have feedback that reveals the progress in relation to the goals (Locke and Latham, 2002), whereas this intervention failed to provide that, also possibly contributing to the designated results. In future interventions we will make sure to provide continuous feedback to the students.

This research study presented most of the findings regarding children saving and spending habits, as well as saving predictors that are in line with
the theoretical notions presented at the beginning of the book. However, future research should examine random sample children with more focus on teens and the differences regarding their socioeconomic status and levels of financial and media literacy, as well as conduct parallel research on the same variables on a sample of parents.

Lastly, this research study should be applied to different age cohorts of children and young adults, focusing either on small children aged 7-10, adolescents, or young adults from 15 to 25 years of age. There are no known experiments done on either of the age groups, and it should be tracked how children of different cognitive and experience levels react to the intervention.

7.5 Concluding remarks

The market has recognized the potential of children as consumers and the need to improve the knowledge, attitudes and skills which will help them develop financial capability and responsible consumption patterns, all of which is of great interest to applied researchers, policy makers and the broader public, but also to all other interested parties within the theoretical context.

So far consumer socialization process was predominantly been researched to identify the main agents, but not to devise an in-depth understanding of financial behavior of children with the intention to trigger their resilience to negative market stimuli, as a tool of consumer protection of children. This book presents precisely that, contributing to the literature gap in the field of financial socialization and financial education of children.

Once children become adults, their behavior is difficult to mold, predominantly unequipped with relevant knowledge, attitudes and habits left to learn from own mistakes. This book shades a light on the importance of investigating children’s financial behavior but also on the essence of financial education programs aimed at children ages 10-14.

This study offers answers and solutions, with the possibility of extension and replication. The practical implications of the research could be analyzed from several different aspects. This study has contributed to the area of reasoning on how to engage children to save – via education, positive parental influences and building their self-efficacy, or self-esteem, in saving. Parents are the most important agents in the children’s financial socialization and they influence them the most by engaging in saving behavior themselves, but also by discussing saving and including the children in the “world of money” by means of giving them allowance. Parents’ norms are very important predictors of children’s saving behaviors, so parents should be aware of the fact...
that they are always engaged in the process of financial socialization, regardless of what they think. The fact that self-efficacy strongly predicts saving behavior should change how the creators of education programs aimed at children reason. Most education programs attempt to increase knowledge or create positive attitudes, however using traditional approach to financial education program development. Children need to be stimulated properly in order to develop self-esteem in matters of saving. They need to be triggered and taught the belief that, regardless of the circumstances, they can always save and that they can always succeed in it – which will do them good. Such things can be accomplished by integrating behavioral interventions

We hope this book will trigger many other projects both of scientific and practical nature that are oriented toward teaching children how to make sound financial choices and develop their self-esteem and self-efficacy. Moreover, we truly hope the findings presented here will contribute to public policy aimed at the financial education and consumer protection of children.


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