# DEVELOPING CONSUMPTION AND SAVING SCALE: A STUDY OF VALIDITY AND RELIABILITY\*

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### **ABSTRACT**

The purpose of this study is to develop a valid and reliable scale in order to measure the consumption habit and saving behaviours of the children between 6 and 10. The sampling of the study composes of 147 girl and 119 boy pupils (266 in total) that are receving education in one private and two state primary schools in Eskişehir. Within the scope of the scale reliability, the Cronbach Alpha inner coherence coefficient is examined. While SPSS 18 software is used for explanatory factor analysis, LISREL 8.8 package is adopted for the confirmatory factor analysis. According to the results of the explanatory factor analysis, it is seen that the items of the consumption and saving scale are gathered under 8 dimensions. By considering the results of the confirmatory factor analysis, the accordance indices are quite similar with the values mentioned in the literature. It is concluded that the "Consumption and Saving Scale" could be used in determining the consumption habits and saving behaviours of kids.

**Keywords:** Saving; Comsumption; Behaviour; Valid and Reliable Scale

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## TÜKETİM VE TASARRUF ÖLÇEĞİ GELİŞTİRİLMESİ: GEÇERLİK VE GÜVENİRLİK ÇALIŞMASI

## ÖZET

Bu çalışmanın amacı; 6-10 yaş aralığındaki çocukların tüketim alışkanlıkları ve tasarruf davranışlarının ölçülmesine yönelik geçerli ve güvenilir bir ölçek geliştirmektir. Araştırmanın çalışma örneklemini Eskişehir il merkezinde ilkokul düzeyinde 1 özel, 2 devlet ilköğretim okulunda öğrenim gören 147 kız, 119 erkek, toplam 266 öğrenci oluşturmaktadır. Ölçeğin güvenirlik çalışmaları kapsamında Cronbach Alpha iç tutarlılık katsayısı incelenmiştir. Geçerlik çalışmaları kapsamında ise açımlayıcı ve doğrulayıcı faktör analizi çalışmalarına yer verilmiştir. Açımlayıcı faktör analizi SPSS 18 paket programıyla, doğrulayıcı faktör analizi LISREL 8.8 programıyla gerçekleştirilmiştir. Açımlayıcı faktör analizi sonucunda tüketim ve tasarruf ölçeği maddelerinin 8 boyut altında toplandığı görülmüştür. Gerçekleştirilen Doğrulayıcı Faktör Analizi (DFA) sonucunda uyum iyiliği indekslerinin literatürde belirtilen değerlerde olduğu tespit edilmiştir. Araştırmada "Tüketim ve Tasarruf Ölçeği" nin çocukların tüketim alışkanlıkları ve tasarruf davranışlarını belirlemek amacıyla kullanılabileceği sonucuna varılmıştır.

**Anahtar Kelimeler:** Tasarruf, Tüketim, Davranış, Geçerli ve Güvenilir Ölçek

### 1. INTRODUCTION

One of the most obvious consequences of economic development and industrialization is consumption habits, which have been increasingly widespread and diversified. As the level of disposable income increases, the budget that individuals spend on consumption would increase too. Additionally satisfaction and happiness from consumption is increasingly important in the lives of individuals. Today, consumption behavior is gradually individualized according to objective and subjective criteria. Consumption decisions are individualized within social classes and through this individualization, consumption provides hedonic benefits to individuals. Hedonic consumption includes affective and fantasy-oriented behaviors of consumption, and it is expressed as taking pleasure from consumption. In this case, today, consumers not only benefit from the products and services they consume but also aim to provide hedonic benefits at the same time, and manage decision making processes both in terms of objective and subjective criteria (Deniz & Ercis, 2010:141-166).

Because of the consumption urgency of each individual in the society, consumption effects individuals' decision positively or negatively and the society they live in. As human being develops, the decisions they take as

consumers change constantly. For this reason, when consumers make a decision to consume, they must be aware of the responsibility that these decisions charge upon them. There has been a very rapid process of change in the contemporary world. The problem in this process is that the resources are getting more scarce and not to be known how to use them. The individuals as consumers should be careful in consuming the indispensable materials used by people and other living things when they continue their lives. Even though in the narrow sense, saving money or increasing the amount of money by reducing expenditures is perceived as saving, in a broad sense, it means being careful in consuming resources, using resources as much as necessary, and consuming resources economically.

The main factor in the economic growth and development of countries is the increase in savings. It is very important to gain the saving consciousness, particularly at early ages. One of the main policy objectives in the 10<sup>th</sup> Five-Year Development Plan is to guarantee that the level of national savings is sufficiently high. It was targeted to give rise to the rate of national savings about 19 % by the end of 2014-2018 period in harmony with the targets of growth and current account deficit. Under the title "Domestic Savings and Waste Reduction Program" in the 10<sup>th</sup> Five-Year Development Plan, a series of saving enhancing options were presented (http://www.kalkinma.gov.tr/). The right consumption habits that will be gained or taught at early ages can increase saving awareness and savings. In order to create a society composed of conscious consumers and thrifty individuals, it is important to train and rise the awareness of children. At early ages, children should be taught about the importance of saving and avoidable consumption behaviors. The concepts of children's direct and indirect roles in consumption and continuity of these roles during adulthood require determination of their preferences about consumption.

Today, as consumers, children's knowledge level is higher than past, and their access to information is much easier. Children, who are consumers, receive news and information mainly via the internet and the media. The amount of money that today's children can use and the chances of shopping are highly depending on the changes in consumption culture. In addition, in today's conditions, children have an important position in terms of consumption. This case can be easily understood from television channels settled for children and changes in the consumer sector.

In 1974, Ward (1974:2) adopted the concept of "consumer socialization" that would lead children to be treated as consumers. Children's socialization with consumer role was described by Ward as "the process of obtaining the knowledge, skills and attitudes of young people as consumers concerning in their market functions". The concept of "socialization of consumers" has been the subject of many conceptual and applied studies in the

fields of psychology, communication, advertising and industry, especially marketing, since the 1980s, while young children have also been investigated (Ward, Klees & Wackman, 1990:801-802). Economists draw attention to the importance of preferences shaped and rooted in childhood. By understanding the concepts of saving and consumption, it is expected that childhood experiences will direct adult preferences. Families trying to help children socialize as consumers are affected from children in their purchasing decisions. The degree of children's influence varies according to product, family characteristics, gender, and other factors.

Nowadays, a very rapid change process has been experiencing. In this process, getting scarce resources and not knowing how to use them is an important problem. Every individual is a consumer as long as s/he lives, and tries to reach the goods and services s/he can consume for his / her survival. Because of the consumption necessity of each individual in the society, consumption affects individuals' decisions positively or negatively and the society they live in. For this reason, consumers should be aware of the responsibility they carry on their shoulders when taking consumption decisions.

According to the Permanent Income Theory developed by Friedman (1957) consumption level can be determined by considering the lifelong available resources and consumer budgets are balanced in continuous manner rather than periodical ones (Sivri, 2009: 177). Therefore correct consumption behaviors that taught at early ages and last a life time contribute lifelong consumption ratio positively. Also there can not be always found any opportunity for increasing permanent income. So decreasing consumption ratio is the best way for both country and individuals.

The consumption and saving are two very crucial concepts in the development of countries. Countries that are made up of individuals who are conscious of the consumption activities and able to save money will attain the first place in the development race. As adults who grown up with the proverb "As the twig is bent so is the tree inclined", it will be very important for countries future if children are trained about the matters of consumption. In order to train children by making them conscious, it may be useful to identify their opinions, thoughts and habits related to consumption and saving at first.

## 2. LITERATURE REVIEW

The children between 0 and 14 age constitute 30 % of the world's population. When considering the world population is 7.44 billions, children are an important economic value. Although, a study has not been for all world markets, Mc Neal (1974) states that children spend \$ 28 billions and young

people spend \$100 billions each year for the products advertised in the media, and children's effects on the spending of their families is \$ 249 billion. There are many studies on the consumption of children, which creates an important economic value. However, these studies have focused on children's consumption preferences and on children's effects on the consumption decisions of their families (McNeal, 1973:256-258). The first family consumption research was conducted by Edanard Duopetioux in 1853 (Çakmak & Çakır, 2013:116-136).

McNeal (1973) aimed to find the start age of being a consumer and studied with 60 children between the ages of 5 and 9 years. He found that the concept of money was formed for the first time at the age of 5, and that regular allowance and money saving started at the age of 7, and that exactly consumer behavior was exhibited at the age of 9.

In a study carried out by Frideres in 1973, it was found that 78 % of 82 children between the ages of 5 and 8 saw a new toy for the first time in television advertisements, and 22 % of them received toy-related information from their friends.

In 1974, Ward adopted the concept of "consumer socialization" that would lead children to be treated as consumers.

In their study of 400 families having children between the ages of 2 and 10 in 1977, Burr and Burr concluded that parents are watching the advertisements much more related to children, and affected by their children in their making purchasing decisions. Ward, Klees and Wackman drew attention to the importance of behaviours shaped and rooted at childhood in 1990. Commuri and Gentry (2000) conducted a collected study which refers to findings of researches on families' consumption decisions. The effects of the children on the consumption decisions of the families were examined by Kaur and Raghbir (2006). Bodzanowska emphasized the social impact of purchasing decisions for consumers between the ages of 9 and 11 in 2011. In addition to these studies, there are also some studies such as the research conducted by Sönmez in 2006 about the effects of 7-12 aged children on their families' consumption decisions, the study of Çakır in 2006 about the roles of children in purchasing decisions and the study carried out by Ağaç and Harmankaya in 2009 about primary school students' cloth preferences.

Karaman indicated that children and their families get products with cartoon/series film characters for different reasons in his research on children in the age group (6-11) and their families in Giresun city center in 2007. According to the results of the study, the parents buy these products to their children for some reasons such as making them happy, preventing them to imitate someone, rewarding and raising up motivation of them, and also

showing to take interest in them, filling a gap which rooted in parents' childhood.

In the study carried out with the 412 parents having children aged 3-6 years in the level of the pre-primary education institutions from the middle and upper income groups living in the city center of Mersin by Şahin and Hatungil in 2008, the most important factor affecting children's food and toy consumption habits is television, the most important factor influencing cloths selection—is the group of friends, and the most important factor affecting the preferences of books and electronic goods is their parents.

In the research of Arnas in 2004, interviews were conducted by 347 mother's having child aged between 3-8 years. The study indicated that children were affected by TV advertisements in their food purchases.

Research conducted in 2009 Hayta concluded that it is getting easier to overcome consumer problems in future periods if consumer education is given at early ages. According to Hayta's study, consumer socialization in children is a process which starts at the age of 4 and continue through the life long. In the view of Hayta, a child aged 4-5 years is in the experimental stage of consumer role. A child consumer aged 5-6 years is on his own act for the first time; s/he can act by her/himself and buy something alone without any help. The child considers consumption as a normal behavior of her/his own age or elder than her/himself, but not as a duty or privilege. As for, individuals aged between 12 and 15 years take completely their place in society as consumers.

In 2009, Ateşoğlu and Türkkahraman examined the issue of socialization of children as consumers. In the study, the increase in marketing activities toward children consumers was examined and the reasons of this were investigated. As the result, three reasons have been revealed. The first of these is the increase in the amount of children's allowance and freedom in spending, and the second is that the future's markets areformed by today's children and the last is children play a major role in today s making purchasing decisions.

Şener examined the effects of media and advertising on children's consumption preferences in 2009. Başfırıncı investigated the Turkish consumer culture in his research conducted in 2011.

The topic of Altıok and Babaoğul's study carried out in 2012 was consumer education in EU countries and Turkey. In its result section, it is emphasized that the consciousness of children about the consumption should be raised from the early ages, and the studies done in these countries are presented.

The study conducted by Malbeleği and Sağlam in 2013, the opinions of the 4<sup>th</sup> class students of primary school about being conscious consumers were examined. 21 of the 4<sup>th</sup> class students, receiving education in Adapazarı town of Sakarya city in 2010-2011 academic years were randomly selected in the survey. As a result, it was seen that the students included in the research have a consumer responsibility consciousness, that of quality and budget-price consciousness as consumers when shopping.

In 2014, Bulut, Tekinbaş and Babacan conducted a study on the awareness of marketing concept of preschool age group children. In the study, 32 students going to kindergarten in İzmir were included. In the research, it was concluded that between 3 and 4 to 5 years old children have cognitive differences regarding consumption concepts, but there are no meaningful differences in behavioral sense.

When digged out the studies on saving trends, it is seen that very few studies have been conducted. Erten (2002) investigated the energy-saving behaviors of girls and boys at home, and found significant differences in the behavior of girls and boys. Ersoy examined the role of families on the guidance of children's money management in 2008. In the study, it is emphasized that parents can encourage children with the right precautions. Çolak and Öztürkler (2012) studied the average saving tendency of households in Turkey.

When analyzed the results of the studies, they have great impacts on the field of the marketing efforts. It is frequently stressed that children are an economical value in the global sense. Not having true consumption habits and consciousness of saving are not only evolving issues of families, but also that of the states, even the world. To develop for the states, there is a need for individuals having conscious and saving habits. It should not be forgotten that the experiences of childhood will direct the preferences of the adulthood. Children form a great deal of economic values by both their own purchasing behaviours directly and contributions on their parents' buying decisions indirectly. Nowadays in which the consumption dimension has reached its peak level, at which level this consumption desire can be met with the existing resources? For this reason, not wasting the resources and keeping sustainability are very important. This can be achieved by obtained true consumption habits and the consciousness of saving.

## 3. METHOD

## 3.1. Sampling Group

Research group of this study was comprised of totally 266 pupils receiving education in one private and two state primary schools located in Eskişehir city in 2016-2017 education years.

## 3.2. Scale Development Process

When the literature is analyzed, it can be claimed that there are different views related scale development process and stages. In his article, Churchill (1979) ranked the necessary steps in order to measure the developing market structure: putting the structure into clear environment, generating sample item sets, datum collection, simplifying the scale, testing the scale of reliability via new datum, testing construct validity and developing norms respectively. However, DeVilles (2003) ranked the scale development stages as revealing structure desired to measure, constructing item set, determining scale type, taking experts' opinions, selecting valid items, applying draft scale, evaluating items' validity and reliability and giving the final form of the scale.

In this study, the scale development stages introduced by Erkuş et al. (2000) are adopted. These stages can be listed as literature review, generating item set, taking experts' opinions, pilot study, testing scale validity and reliability, scale simplification and giving the final form of the scale.

## 3.3. Developing Items of the Scale

In the process of the scale development stages, the past studies found in the literature of consumption and saving were taken into the consideration. For this purpose, firstly a detailed literature review is carried out in order to determine and define the dimensions of consumption and savings scale. At the end of the literature review, items that are able to define the dimensions of consumption and savings scale are generated.

In order to identify the dimensions and items that can form these dimensions, focus group discussions were conducted. Focus group discussions can be defined as series of discussions that is carefully planned with the purpose of obtaining case related perceptions which is previously determined in moderate and non-threatening environment (Yıldırım & Şimşek, 2006:152). Powell et al. (1996) defined focus group discussion as opinions and discussions presented by a group selected by the researcher under their own experiences toward research problem.

In selecting sampling group of the focus groups, it was paid attention to choose the most appropriate group and a sampling method, which was in harmony with the purpose of the study, was used. This type of sampling is a commonly used method in qualitative researches and provides practicality and velocity to researchers (Yıldırım & Şimşek, 2006:107-113). In purposive sampling process, the researcher includes units that s/he ideally represent working area and the subject matter. Although there are different views about what the number of focus group should be ideally in the literature, three of four groups are accepted in general. Another approach in terms of the number

of focus group considers the number of repetitive focus group as ideal (Aaker, Kumar & Day, 2004; Daymon, 2002; Krueger, 1994).

Three focus group discussions are considered as sufficient in this study as it was observed that satisfied and repetitive data obtained from participants. Therefore is was decided to stop the meeting. These discussions composed of pupils receiving education in one private (Eskişehir Çağdaş Primary School) and two state (Mustafa Türker Primary School, Hürriyet Primary School) primary schools located in Eskişehir city (Table 1).

Table 1: Information related to focus group discussions

Schools	Place	Number of participation	Date	Duration
Pupils of Çağdaş Primary School	Çağdaş Primary School Assembly Hall	16 pupils (8 female 8 male)	06.05.2016	40 minutes 22 seconds
Pupils of Mustafa Türker Primary School	Mustafa Türker Primary School Seminar Hall	8 pupils (4 female 4 male)	31.05.2016	44 minutes 10 seconds
Pupils of Hürriyet Primary School	Hürriyet Primary School Assembly Hall	8 pupils (4 female 4 male)	02.06.2016	43 minutes 26 seconds

In the study, a semi-structured discussion form that was prepared based on the literature was adopted (Table 2).

Table 2: Key questions in focus group discussions

## Questions

- 1. What is consumption?
- 2. What are your consumption preferences?
- 3. What sort of differences do affect your consumption preferences?
- 4. How do you behave if you want to purchase something?
- 5. What is the meaning of saving for you?
- 6. What are the importance and benefits of saving?
- 7. What can the ideal saving types be for you?

- 8. What are the economical acts in home, school and class for saving?
- 9. What is the requirement? What is the desire?
- 10. What are the meaning of money and credit card?
- 11. Why do we consume?
- 12. What do you do in your spare time?
- 13. What affects you while purchasing a product?
- 14. Do you receive an allowance from your parents?

Before the beginning of focus group study, all participants were informed about the purpose of focus group discussion. Issues related to privacy and scientific usage of the study results were explained to participants and necessary permissions were taken. Throughout the focus group work, sound recording and note taking were conducted by their permission and then these notes were transcribed. After examining the written reports of focus group, a response based coding key was constructed and response related themes were generated. In order to measure the reliability of the themes identified by the researchers, the documents obtained were delivered to an expert and asked to code and compare.

By identifying the numbers of "consensus" and "dissidence" in comparisons, the formula proposed by Miles and Huberman (1994), (percentage of specialization = consensus/ [consensus + dissidence] x 100) was used to measure the reliability of research. Miles and Huberman (1994) express that the reliability of a research can be provided if the percentage of specialization is higher or equal to 70 % in qualitative studies. In this context, the results obtained are indicators of the reliability of themes (Table 3).

Table 3: Themes related to consumption and saving

% 94

## Themes and Related Items Reliability (91 Items) Percent % **Individual Factors (10 items)** I purchase junk food from canteen. I buy something from canteen only when I am hungry. I bring food to school from home. I save money to purchase something I want to buy. I purchase new clothes even if not required. % 93 I primarily make my parents satisfy the needs. I utilize something by taking needs into the account. I purchase food-drink products even if not required. I purchase stationery products even if not required. I visually purchase a product impressed with ads.

#### 2. Social Factors (21 items)

I force my parents to buy a product I desire.

My parents purchase whatever I want in shopping.

My parents purchase what I need in shopping.

My parents take care of my preferences in shopping.

I eat a meal out with my parents.

I go on a holiday with my parents.

I go shopping with my parents.

My parents use credit card in shopping.

My parents pay attention to not consume environmentally

hazardous products.

My parents, relatives and friends emphasize the importance of saving.

I force my parents for eating out.

My friends warn me about saving.

My friends affect me in my purchasing decisions.

I get my parents to purchase a product which my friend has.

My teachers emphasize the importance of saving.

My teachers warn me about saving.

We make a requirement list at home.

I purchase a product if I see that my friends have.

My parents save money to purchase something that we want.

My parents surprise me by purchasing products they see in ads even

if I do not want.

I spend too much time in shopping centers with my parents.

Çağım Kritchivi içir	
3. Environmental Factors (7 items)	
I get my parents to purchase every product which I see via internet.	
I get my parents to purchase every product which I see on	<b>% 98</b>
billboards.	
Ads affect my consumption preferences.	
Online ads draw my attention.	
Ads on tv and radio attract my attention.	
Billboards attract my attention.	
I follow up ads attentively.	
4. Sustainable Saving (7 items)	
I purchase products that do not pollute the environment.	
I put products such as plastic, glass, paper in recycling bins.	
I warn my parents and friends about not buying environmentally	<b>% 97</b>
hazardous products.	
Recycling/seperation process is essential for environmental	
protection.	
I turn off the lights by behaving economically at home.	
I turn off faucet by behaving economically in the school.	
5. Spending Awareness (7 items)	
I spend all of my allowance.	
I save on my allowance.	
I help who needs with my allowance I saved.	<b>% 83</b>
I buy gifts to others by using my allowance I saved.	
I always carry wallet.	
I save money in my piggy bank.	
I am a conscious consumer.	
6. Brand- Price (6 items)	
My parents firstly look at prices in shopping.	
I buy branded products.	
I try to purchase the mostly known branded products.	%88
I look at price before purchasing a product.	
I purchase cheaper products having similar features instead of	
expensive one.	
I purchase expensive products.	
7. Spending Spare (Free) Times (7 items)	
I spend my spare times by playing games with my friends out.	
I spend my spare times at home (playing game, reading book).	
I spend my spare times by attending social and artistic activities	<b>% 98</b>
(music, dance, swimming).	
I watch tv whenever I do not study.	
I connect to internet whenever I do not study.	
I spend my spare times with my family.	
I use computer and/or tablet to spend some time in internet.	
8. Saving Awareness (22 items)	
My parents warn me about saving my allowance.	
My parents prepare canned foods in the summer months for winter	
time.	
Mr. moments sorre money	

My parents save money.
My parents emphasize the importance of saving.

% 85

% 85

My parents are thrifty.

I redress my torn clothes my plate.

We order a take away if I do not the meal made at home.

My parents save small change at home.

I pay attention not to harm objects in the school.

I pay attention not to harm objects at home.

I give my clothes that I do not wear to whom needs.

I wear shrinking clothes given by my relatives.

I turn off the lights before leaving the room.

I turn off the tap while brushing my teeth.

I leave the refrigerator door open in taking something.

I use my pencil even if it gets smaller.

My parents throw leftover meals to the trash.

I reutilize used papers.

I am thrifty.

Use of electric/water reluctantly makes me thrifty.

I pay attention not to be extravagant.

## 9. Technology Usage (4 items)

I use computer and/or tablet for doing homework.

I use computer and/or tablet for playing games.

I do shopping via internet or mobile applications.

I use social media to spend time in internet.

A scale consisted of 100 items aimed to examine the consumption habits and saving behaviors of children was prepared by considering data obtained from focus group discussions and item sets in scale development process. Data obtained from focus group discussions were analyzed under 9 dimensions.

The items included in the scale were examined by the field experts before application. The opinions of the experts about the understandibility and their appropriateness for the purpose of the study were taken. The group was formed by 17 experts from different disciplines in universities, including 3 primary school teachers. According to the critics uttered by experts, it was decided to get rid of 9 items from draft scale composed of 100 items. Final version of the trial scale was reviewed by Turkish language expert with respect to spelling mistakes and sentence fragments.

### 3.4. Data Collection and Analysis Stage

According to the literature, there should be at least 50 respondants for the preliminary study in the stage of scale development. After making necessary arrangements according to the experts' opinions, a survey, composed of 300 pupils from 1 private and 2 state primary schools, was conducted in Eskişehir. In the draft scale, 34 items that were not answered were igmored. The respondants were asked to score the scale by three point Likert scale (1=Never 2=Sometimes 3=Always). The validity and reliability analysis of the survey were carried out by using the forms filled by 266 pupils

(147 girls 119 boys). The data were transferred into SPSS 18 package for making exploratory factor and reliability (Cronbach Alpha) analyses. The confirmatory factor analysis was carried out in LISREL 8.8 package to examine unidimensionality of the scale obtained by exploratory factor analysis.

## 4. RESULTS

## 4.1. Findings Related to the Scale Validity and Reliability Results

It is pointed out the sample size of 50 as very low, 100 as low, 200 as medium, 300 as good, 500 as very good and 1000 as perfect respectively (transferred by Çokluk, Şekercioğlu & Büyüköztürk, 2010:206). However, in order to gain high load values, it is mentioned that a sample size composed of about 150 participants can be sufficient, no need for the huge numbers. Also, the sample size can be predicted according to relative criteria such as the number of items or factors. According to Kline (1994) the sample size should be at least two times of the item numbers in order to carry out the factor analysis. The form used in this study was composed of 91 items. The sample size of this study can be accepted as sufficient due to having sample size of 266 greater than or equal to two times of item number of 91 (91 x 2 = 182 < 266).

The Cronbach Alpha reliability coefficient was used to analyze internal consistency of the draft scale for 91 items. Özdamar (1999) considered a scale having Cronbach alpha value greater than or equal to 0.60 as reliable. According to the results of reliability analysis 31 items having low reliability coefficients were removed from the scale and factor analysis was realized for 60 items remained.

First of all, in order to identify the dimensions and the structural validity of the scale developed, the exploratory factor analysis (EFA) was used. Then, the confirmatory factor analysis (CFA) was carried out to confirm determined dimensions and test the validity of measuring tool. The exploratory factor analysis (EFA) is a practical scale development technique used for developing scale and diminishing a number of indicator. Also, EFA can be used as initial analysis in situations where there is not enough and detailed theory related to relationships between indicators (Gerbing & Anderson, 1988:189). CFA is multi variable technique used for testing predetermined relationship (Hair, Andresani, Tahtam & Black, 1998:579). With CFA, the more distinct and certain unidimensionality assessment can be realized when compared with the constraints being affected from internal and external consistency (Gerbing & Anderson, 1988:189).

Before starting exploratory factor analysis, while Kaiser-Meyer-Olkin (KMO) was adopted to specify the convenience of the sample size for analysis, Bartlett's Sphericity test was carried out to examine the relationships between variables. While the KMO values between 0.5 and 1 are considered as acceptable for factor analysis, values smaller than 0.5 indicate the inconvenience of data set for factor analysis. However the minimal KMO value accepted by researchers as favourable is 0.7 (Altunışık, et al., 2005: pp. 216-217; Chong & Rundus, 2004). The KMO value related to the scale was found as 0.71. This value shows that the sample size is sufficient for the factor analysis. In addition the results of Bartlett's Sphericity test was obtained as  $\chi = 4863.465$  and p < 0.000 proving the suitability of data set for the factor analysis.

In the EFA conducted for identifying the dimensions of the scale, the data were analyzed in principal components method bu using Varimax rotation. According to the results of the exploratory factor analysis, it was seen that 60 items were collected under 19 dimensions. By evaluating the overlapping and acceptable factor loadings of these 60 items factor reduction is conducted. In order to accept an item as an overlapping one, it should have higher load value than threshold in more than one items and the differences in two or more factors' load value should be smaller than 0.1 (Çokluk, et al., 2010:233). The items having lower than 0.40 factor loading were removed from the scale as the acceptance level for factor loading values has been considered as 0.40 (Hair, et al., 1998: 111). So the number of items used in the scale are decreased from 60 to 27 after the item reduction process.

According to the results of EFA, 27 items were cumulated under 8 dimensions: These are 1. environmental factors, 2. Spending spare (free) times, 3. Sustainable saving, 4. Social factors, 5. Saving awareness, 6. Price, 7. Spending awareness and 8. Brand. These 8 factors explain 61.107% of the total variance. According to the results of Cronbach Alpha test internal consistency coefficients for eight dimensions were found as follows: 0.82, 0.71, 0.73, 0.63, 0.80, 0.70, 0.60 and 0.55. Also, the total scale alpha coefficient was found as 0.73 (Table 4 and 5).

**Table 4:** The results of the exploratory factor analysis for the consumption and saving scale

Consumption and Saving Scale	1	2	3	4	5	6	7	8
<b>Environmental Factors</b>								
Ads on tv and radio attract my attention.	.82							
Billboards attract my attention.	.78							
Online ads draw my attention.	.77							

Ads affect my consumption	.60						
preferences.							
I get my parents to purchase every	.60						
product which I see via internet.							
I get my parents to purchase every	.58						
product which I see on billboards.	_						
Spending Spare (Free) Times	-						
I use computer and/or tablet to spend	•	.76					
some time in internet.							
I use computer and/or tablet to for		.75					
playing games.							
I connect to internet whenever I do		.69					
not study.							
I watch tv whenever I do not study.		.54					
I use social media to spend time in		.53					
internet.							
Sustainable Saving	•						
I turn off the faucets by behaving	•		.76				
economically in the school.							
I turn off lights by behaving			.74				
economically in the school							
I turn off the lights by behaving			.72				
economically at house.							
Recycling/seperation process is			.65				
essential for environmental							
protection.							
Social Factors	•						
I force my parents for eating out.	•			.73			
I get my parents to purchase a product							
which my friend has.				.70			
I force my parents to buy a product I				.55			
desire.							
I purchase a product if I see that my				.51			
friends have.							
Saving Awareness	•						
I pay attention not to harm objects in	•				.89		
school.							
I pay attention not to harm objects at					.87		
home.							
Price	•						
My parents firstly look at prices in	•					.84	
shopping.							
I look at the price before purchasing						.83	
a product.							
Spending awareness	•						
I buy gifts to others by using my	•						.78
allowance I saved.							
I help who needs with my allowance							.77
I saved.							
Brand							

I try to purchase the mostly known								.79
branded products.  I purchase branded products.								.71
Explained Variance	11.8	9.6	8.9	6.8	6.5	6	5.7	5.6
CRONBACH ALPHA <sup>2</sup>	.82	.72	.73	.63	.80	.70	.60	.55

**Table 5:** The statistics related the exploratory factor analysis for the consumption and saving scale

Statistics	N	KMO	Explained total variance	Total reliability	Bartlet's Sph.χ2	Sd	P
Values for consumption and saving scale	266	.75	%61.107	%73	1976.734	351	<0.001

The items are grouped into 8 dimensions namely environmental factors, spending spare (free) times, sustainable saving, social factors, saving awareness, price, spending awareness and brand according to the results of EFA.

The environmental factors dimension is consisted of six items having factor loadings varying between 0.58 and 0.82. The Cronbach alpha value related to the dimension is found as 0.82. The environmental factors dimension explains 11.8% of the total variance.

The dimension of spending spare (free) times is comprised of five items having factor loadings varying between 0.53 and 0.76. The Cronbach alpha value related to the dimension is found as 0.72. The dimension of spending spare (free) times explains 9.6% of the total variance.

Under the sustainable saving dimension, there are four items having factor loadings varying between 0.65 and 0.76. The Cronbach alpha value related to this dimension is found as 0.73. This dinemsion explains 8.9% of the total variance.

There are four items having factor loadings varying between 0.51 and 0.73 in the social factors dimension. The Cronbach alpha value of this dimension is found as 0.63. This dimension explains 6.8 % of the total variance.

The dimension of saving awareness has two items having factor loadings varying between 0.87 and 0.89. The Cronbach alpha value related to

<sup>&</sup>lt;sup>2</sup> Cronbach alpha having values between 0 and 1 is a numerical coefficient of reliability. Acceptible reliability coefficients can be considered as 0.7 according to the literature. Also lower coefficient thresholds can be applied.

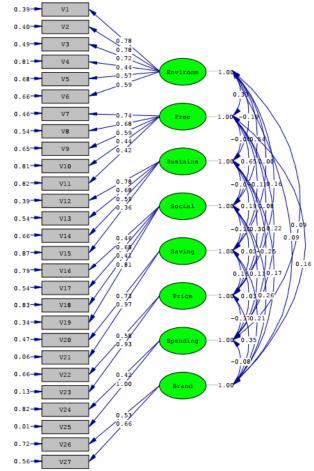
dimension is found as 0.80. 6.5% of the total variance is explained by saving awareness dimension.

The price dimension is comprised of two items having factor loadings varying between 0.83 and 0.84. The Cronbach alpha value related to dimension is found as 0.70. The price dimension explains 6.0% of the total variance.

The spending awareness dimension involves two items having factor loadings varying between 0.77 and 0.78. The Cronbach alpha value related to dimension is found as 0.60. It expresses 5.7% of the total variance.

The brand dimension iincludes two items having factor loadings varying between 0.71 and 0.80. The Cronbach alpha value related to dimension is found as 0.55. 5.6% of the total variance is explained by brand dimension.

The total variance explained for the scale is found as 61.107%. It is accepted as sufficient if the explained variance is between 40% and 60% for multi-factor scales (Şekercioğlu, 2009: p.153). When these values are taken into consideration, it is seen that the contributions of 8 factors to the total variance are sufficient. The coefficient of Cronbach alpha for the total scale is set as 0.73. Özdamar (2004) asserted that the scale having the coefficient of Cronbach alpha between 0.000 and 0.40 as unreliable, 0.40 and 0.60 as low reliable, 0.60 and 0.80 as fairly reliable, 0.80 and 1 as high reliable respectively. When these values are regarded, it is seen that the internal consistency of the scale is high and the sub-dimensions of the structure is reliable. For examining the unidimensionality of the scale obtained through the EFA, The CFA was adopted. 8 factors were included in the CFA. Figure 1 shows the relationship among all observed variables of each items.



**Figure 1:** The CFA model of consumption and saving scale

Chi-Square=398.87, df=296, P-value=0.00006, RMSEA=0.042

At the end of the analysis conducted for the study, the values related to fit indices and acceptable and perfect fit criteria values are presented (Table 6).

Table 6: Consumption and saving scale related to fit indices

	Fit Indices	Perfect	Acceptable	Obtained
		Fit Indices	Fit Indices	Values
$\mathbf{X}^2$				398.87

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df (degrees of freedom) X²/sd	$0 \le X^2/sd \le 2$	$2 \le X^2/\text{sd} \le 5$	296 1.34
RMSEA (Root Mean Square Error of Approxomination)	RMSEA < .05	.05 <rmsea<< td=""><td>.04</td></rmsea<<>	.04
of Approxonimation)	KWSEA ≤ .03	.10	.04
RMR (Root Mean Square Residual)	$RMR \le .05$	$.05 \le RMR \le .10$	.02
NFI (Normed Fit Index)	.95≤NFI≤1.00	.90≤NFI≤ .95	.76
NNFI (Non-Normed Fit Index)	.95≤NNFI≤1.00	.90≤NNFI≤ .95	.91
CFI (Comparative Fit Index)	.95≤CFI≤1.00	.90≤CFI≤ .95	.93
GFI (Goodness of Fit Index)	.95≤GFI≤1.00	.90≤GFI≤ .95	.87
AGFI (Adjusted Goodness of Fit	.90≤AGFI≤1.00	.85≤AGFI≤ .90	.83
Index)			
IFI (Incremental Fit Index)	.95≤IFI≤1.00	.90≤IFI≤ .95	.93

**Source:** Kelloway, 1998; Schermelleh-Engel and Moosbrugger, 2003; Baumgartner and Homburg, 1996; Bentler, 1980; Bentler and Bonett, 1980; Marsh, et al, 2006; Browneand Cudeck, 1993.

According to the CFA performed with the 200 sample, the fit indices of the consumption and saving scale are as follows: The statistics of Chi-Square  $(X^2)$  was used to explain the fit index of life quality scale. The lower Chi-Square ( $X^2$ ) value and the significance level greater than p=0.05 imply the suitability of proposed data to total one (Gerbing & Anderson, 1984: 576). The value of Chi-Square  $(X^2)$  is rather sensitive to the sample size. As sample size (especially for large samples greater than 200) increases, the value of Chi-Square (X<sup>2</sup>) rises and statistical significance level decreases. This situation leads inappropriate model having high Chi-Square (X2) value for large samples. Researchers emphasize the suitability of using adjusted Chi-Square  $(X^2)$  value  $(X^2/df)$  and other goodness of fit indices to evaluate the goodness of fit for large samples greater than or equal to 200 (Schumacker & Lomax, 2004: 100). In this study, the degrees of freedom (df) and adjusted Chi-Square  $(X^2)$  value  $(X^2/df)$  were taken into the account. According to the literature, there is discussion about the interval values of adjusted Chi-Square (X<sup>2</sup>) value  $(X^2/df)$ . Schumacker and Lomax (2004) claimed that the appropriate adjusted X<sup>2</sup> value should be between 1-5 range. Chi- Square (X<sup>2</sup>) and degrees of freedom values for the comsumption and saving scale were found as 398,97 and 296 respectively. Hence the adjusted Chi-Square value (X<sup>2</sup>/df) was calculated as (398.97/296) 1.34 and the scale was accepted as statistically significant.

Apart from  $X^2$ /df, other fit indices such as RMSEA, RMR, NFI, NNFI, CFI, GFI, AGFI and IFI were analyzed in terms of the CFA. RMSEA value for thescale was found as 0.04. RMSEA values  $\leq$  .05 can be considered as a good fit; values between .05 & .08 as an adequate fit, values between .08 & .10 as mediocre fit and values > .10 are not acceptable (Schermelleh,

Moosbrugger & Muller, 2003:36; Çokluk et al., 2010:269; Meydan & Şeşen, 2011:34). RMR value for the scale was found as 0.02. RMR values  $\leq$  .05 can be considered as a perfect fit, values between .05 & .08 as a good fit and values between .08 and .10 as a mediocre fit. Other fit indices namely NFI, NNFI, CFI and IFI were found as 0.76, 0.91, 0.93 and 0.93 respectively. These values between 0.90 and 0.95 as a good fit and > 0.95 as a perfect fit (Çokluk, Şekercioğlu & Büyüköztürk, 2010:271-272; Kaya, 2011: 65). Additionally GFI and AGFI values were obtained as 0.87 and 0.83 showing proximity to acceptable thresholds of 0.90 and 0.85 respectively (Şekercioğlu, 2009:150-151). According to the results of the CFA related to eight dimensions of the consumption and saving scale obtained fit indices show good fit out of NFI value. It can be accepted the issue of having low values for some fit indices due to being the first scale study aimed to evaluate the behaviors of consumption and saving.

The results of the CFA related to consumption and saving scale are presented with the standardized factor load, t and R<sup>2</sup>values (Table 7).

**Table 7:** The Results of confirmatory factor analysis for the consumption and saving scale

ITEMS	SFLV	t value	$\mathbb{R}^2$
Factor 1: Environmental Factors			
Ads on tv and radio attract my attention.	.78	12.28	.61
Billboards attract my attention.	.78	12.11	.60
Online ads draw my attention.	.72	10.90	.51
Ads affect my consumption preferences.	.44	6.02	.19
I get my parents to purchase every product	.57	8.08	.32
which I see via internet			
I get my parents to purchase every product	.59	8.44	.34
which I see on billboards.			
Factor 2: Spending Spare (Free) Times			
I use computer and/or tablet to spend some time	.74	10.49	.54
in internet.			
I use computer and/or tablet for playing games.	.68	9.56	.46
I connect to internet whenever I do not study.	.59	8.13	.35
I watch tv whenever I do not study.	.44	5.80	.19
I use social media to spend time in internet.	.42	5.49	.18
Factor 3: Sustainable Saving			
I turn off the faucets by behaving economically	.78	10.71	.61
in the school.			
I turn off lights by behaving economically in	.68	9.25	.46
the school			
I turn off the lights by behaving economically	.59	7.88	.34
at home.			

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Recycling/seperation process is essential for	.36	4.63	.13
environmental protection.			
Factor 4: Social Factors			
I force my parents for eating out.	.46	6.18	.21
I get my parents to purchase a product which	.68	9.73	.46
my friend has.			
I force my parents to buy a product I desire.	.41	5.38	.17
I purchase a product if I see that my friends	.81	11.92	.66
have.			
Factor 5: Saving Awareness			
I pay attention not to harm objects in the school.	.73	7.12	.53
I pay attention not to harm objects at home	.97	8.00	.94
Factor 6: Price			
My parents firstly look at prices in shopping.	.58	6.36	.34
I look at the price before purchasing a product.	.93	8.04	.87
Factor 7: Spending Awareness			
I buy gifts to others by using my allowance I	.42	3.74	.18
saved.			
I help who needs with my allowance I saved.	1.00	4.53	.99
Factor 8: Brand			
I try to purchase the mostly known branded	.53	5.02	.28
products.			
I purchase branded products.	.66	5.51	.44
SFLV= Standardized factor load values		<del></del>	

When the Table 7 is examined, it is clearly seen that the standardized factor loadings for all indicator variables (except recycling/seperation process is essential for environmental protection) are greater than 0.40 and all of the parameters are found as statistically significant in terms of t value (t >1.96).

## 5. DISCUSSION AND CONCLUSIONS

In this study, it was aimed to develop a valid and reliable scale for evaluating the childrens' consumption habits and saving behaviors. Accordingly a draft scale was generated consisting 100 questions by conducting a depth literature review and focus group discussions. For the content validity of the scale, experts' opinions were taken. According to the opinions of the experts, 9 items were removed from the scale. After necessary arrangements were carried out, the scale was applied. The EFA was performed to determine the construct validity of the scale composed of 8 dimesions and 27 items. The dimensions were named as environmental factors, spending spare (free) times, sustainable saving, social factors, saving awareness, price, spending awareness and brand respectively. The total reliability of the scale was found as 0.73. The reliability coefficients related to the sub-dimensions varied between 0.55 & 0.82 and explain 61 percent of the total variance. The adjusted Chi-Square value (X²/df) was found as 1.34 according to the results

of the CFA. The scale related fit indices such as RMSEA, RMR, NNFI, CFI, GFI, AGFI and IFI have values between acceptable thresholds and show good fit. It is decided that the consumption and saving scale consisting of 8 dimensions and 27 items can be used for data collection process. According to the results of pilot study and analysis it was found that children's consumption and saving behavior are better explained by 27 items.

This study is part of the Scientific Research Project so it is planned to perform a similar survey developed for determining the consumption and saving behaviors of children between 6 and 10 in Turkey.

According to the findings, the scale developed for this study can significantly contribute to the literature. Besides it can be useful and efficient measuring tool for further researches aimed to determine the consumption and saving behaviors of children.

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