



## A Study on the Mediating Effect of Financial Literacy Between Personality Traits and Irrational Buying Behaviors

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### Research Article

#### History

Received: 23/03/2022

Accepted: 17/05/2022

### ABSTRACT

This study aims to test whether financial literacy, which is one of the most studied topics in behavioral finance in recent years, affects compulsive and impulsive buying behavior. It also aims to answer whether financial literacy mediates the relationship between personality traits and compulsive and impulsive buying behavior. The population consists of people over the age of 18 residing in Türkiye. Data were collected using an online questionnaire from 405 participants selected by convenience sampling from this population. To test the hypothesis, data were subjected to regression and mediation analysis. The results show that financial literacy has a significant effect on compulsive and impulsive buying behavior and also type A and B personality has a significant effect on financial literacy. On the other hand, financial literacy doesn't mediate between A and B personality typologies and compulsive and impulsive buying behaviors. In future studies, especially if financial literacy is measured on a continuous scale, the research model might show more significant results in terms of mediation effect. Based on the findings, the increase in the level of financial literacy may positively affect the saving tendencies of individuals. Thus, individuals will be prevented from compulsive and impulsive buying behaviors. This study is original as it is the first research in the literature that examines financial literacy and irrational buying behaviors together.

**Keywords:** Compulsive buying, Financial literacy, Impulsive buying, Personality typologies

## Finansal Okuryazarlığın Kişilik Özellikleri ile İrrasyonel Satın Alma Davranışları Arasındaki Aracılık Etkisinin Belirlenmesi Üzerine Bir Araştırma

#### Süreç

Geliş: 23/03/2022

Kabul: 17/05/2022

### ÖZ

Bu çalışma, davranışsal finans alanında son yıllarda üzerinde en çok çalışılan konulardan biri olan finansal okuryazarlığın kompulsif ve dürtüsel satın alma davranışını etkileyip etkilemediğini test etmeyi amaçlamaktadır. Ayrıca, finansal okuryazarlığın kişilik özellikleri ile kompulsif ve dürtüsel satın alma davranışı arasındaki ilişkiye aracılık edip etmediğinin belirlenmesi hedeflenmektedir. Araştırmanın ana kümesini Türkiye'de yerleşik olan 18 yaşından büyük kişiler oluşturmaktadır. Bu ana küleden, kolayda örneklem yoluyla seçilen 405 katılımcıdan çevrimiçi anket kullanılarak veriler toplanmıştır. Araştırma hipotezlerini test etmek için veriler regresyon ve aracılık analizlerine tabi tutulmuştur. Sonuçlar, finansal okuryazarlığın kompulsif ve dürtüsel satın alma davranışı üzerinde anlamlı bir etkiye sahip olduğunu ve ayrıca A ve B tipi kişiliğin finansal okuryazarlık üzerinde anlamlı bir etkiye sahip olduğunu göstermektedir. Öte yandan, finansal okuryazarlık, A ve B kişilik tipleri ile kompulsif ve dürtüsel satın alma davranışları arasında aracılık etkisine sahip değildir. Gelecek çalışmalarda, özellikle finansal okuryazarlık sürekli bir ölçekte ölçülürse araştırma modeli aracılık etkisi açısından daha anlamlı sonuçlar ortaya koyabilir. Elde edilen bulgulardan hareketle, finansal okuryazarlık düzeyindeki artış, bireylerin tasarruf eğilimlerini olumlu yönde etkileyebilecektir. Böylece, bireylerin kompulsif ve dürtüsel satın alma davranışlarını göstermesi önlenebilecektir. Bu çalışma, finansal okuryazarlık ve irrasyonel satın alma davranışlarını beraber inceleyen literatürdeki ilk araştırma olduğundan, özgün bir değere sahiptir.

**Anahtar Kelimeler:** Kompulsif satın alma, Finansal okuryazarlık, Dürtüsel satın alma, Kişilik tipleri

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**How to Cite:** Paylan MA, Kavas YB. (2022) A Study on the Mediating Effect of Financial Literacy Between Personality Traits and Irrational Buying Behaviors, Journal of Economics and Administrative Sciences, 23(3): 736-746

## Giriş

In recent years, financial literacy is gaining attention as a concept of increasing importance recently (Karan and Achuta, 2020). Financial literacy makes consumers behave more economically, helps them control their spending, and supports them in discharging their debts faster and applying for fewer loans (Carlin and Robinson, 2012; Lusardi, 2008a). The increase in individuals' financial literacy levels can keep away them from buying products that they don't need (Williams, 2007). Studies show that older people have higher financial literacy levels (Finke et al., 2017; Mitchell et al., 2009; Senda et al., 2020; Watanapongvanich et al., 2020). From this perspective, it can be said that there is a relationship between financial literacy and consumer behavior. Regarding consumer behavior, compulsive and impulsive buying behavior is the important variables that are expected to affect individuals' control over their spending. Compulsive buying behavior (CBB) can be defined as an inability to resist compulsion due to impaired self-control (Maccarrone-Eaglen and Schofield, 2018). Impulse buying behavior (IBB), on the other hand, is defined as an "unplanned purchase" characterized by "relatively quick decision making" and "a subjective bias in favor of immediate possession" (Kacen and Lee, 2002). Therefore, it is necessary to test the relationship of financial literacy with these irrational buying behaviors, which can break the consumer's budget into trouble.

Another important variable in which consumer behavior and financial literacy (Hamza and Arif, 2019) are related is personality traits. Personality traits have significant determinants in consumer behavior research (Durna, 2005; Yıldırım and Pirende, 2019). For this reason, from the personal typologies point of view, it is very important to raise a financially literate generation because an individual reflects society's thoughts and feelings (Armağan and Küçükkambak, 2015; Kaderli et al., 2017). By increasing financial literacy levels, consumers may overcome financial and economic problems such as consuming more than needed (Hilgert et al., 2003; Lusardi and Mitchell, 2007). When evaluated over these explanations, it can be seen that it is necessary to test the effect of personality traits and financial literacy level on irrational buying behaviors. Therefore, this study aims to reveal the factors affecting compulsive and impulse buying variables in terms of type A and B personality typologies which try to determine the personality traits of individuals and financial literacy levels of individuals. To specify through these brief explanations, the research questions are as follows:

- Does financial literacy, which is defined as a variable that can enable consumers to make their budget expenditures more carefully, affect compulsive and impulsive behavior behaviors?
- Do personality traits, which are stated as one of the factors determining the behavior of the individual, affect financial literacy and compulsive and impulsive buying behaviors?

- Can financial literacy have a mediating effect between personality traits and compulsive and impulsive buying behaviors?

## Literature Review

### *Financial Literacy (FL)*

Financial literacy was previously defined as financial knowledge (Hilgert et al., 2003). Increasing financial literacy knowledge allows individuals to change their consumption-saving balance, contributing to the economy with the savings via proper investment tools; helping individuals to manage issues like tax, insurance, retirement and loan (Durmuşkaya and Kavas, 2018; Lusardi, 2008a, 2008b; Pahlevan Sharif and Naghavi, 2020).

When we look at some of the previous studies on financial literacy, we can see that age has a positive relationship with financial knowledge while having a negative relationship with financial attitude. Moreover, the middle-aged people in Japan have more financial knowledge while younger and older people show more positive behaviors on financial behaviors and attitudes (Selamat et al., 2020; Swiecka et al., 2020; Watanapongvanich et al., 2020) and the financial literacy of the young generation is observed to be significantly low (Selamat et al., 2020). In another study in Australia, to figure out the reasons why men are higher financially literate than women, age and education are not important for explaining the difference; however, occupation and union membership are important (Preston and Wright, 2019).

In addition, financial knowledge plays a critical role in predicting financial behavior. And also, financial knowledge is determined to be a significant factor in guessing the attitudes towards money management and to be directly related to financial behavior (Shim et al., 2010). The results show that youngsters have a good level of financial literacy and there is a significant difference between financial behavior and the use of financial instruments in terms of gender, but no difference in financial knowledge (Swiecka et al., 2020). Another research result shows that people with low financial literacy are more financially anxious than people with high financial literacy (Xue et al., 2019).

### *Compulsive Buying Behavior/CBB*

Consumers show different buying behaviors and one of this buying behavior is compulsive buying which is also called irrational buying behavior. Compulsive buying behavior is defined as a psychological behavior disorder occurring when the person is eager to perform buying behavior independently of the rational decision-making mechanism with an intense impulse and cannot control this impulse putting the person in a difficult position (Black, 2001; Ninan et al., 2000; O'Guinn and Faber, 1989; Ridgway et al., 2008; Semiz, 2017; Tamam et al., 1998).

In literature, many studies were conducted on the compulsive buying behavior and its socio-demographic and psychological antecedents. Some of these

antecedents are; lack of self-control, lack of respect for the personality, difficulties in money management (Dittmar, 2005b, 2005a; Mueller et al., 2010; Rose, 2007; Spinella et al., 2007), use of credit card, the effect of advertisement and financial decisions (Faber and O'Guinn, 1988; Ian and Charise, 2008; Khare, 2013; Neuner et al., 2005b, 2005a; Norum, 2008; Raab et al., 2011; Roberts and Jones, 2001).

Although CBB has been noted to be a more common buying behavior in developed countries with relatively vibrant economies and higher levels of disposable income (Maccarrone-Eaglen and Schofield, 2018), there has not been any study yet on the relationship between compulsive buying behavior and the financial literacy levels of consumers. Only credit card usage was studied as a determinant of compulsive buying and it is observed that the use of credit cards increases compulsive buying (Arslan, 2015; Roberts and Jones, 2001), and also a positive relationship between the general attitude toward money and the use of credit card and the compulsive buying behavior (Ian and Charise, 2008). Since financial literacy represents a wider financial consciousness, in this study to reveal the relationship between financial literacy and compulsive buying behavior,  $H_1$  is hypothesized as follows:

$H_1$ : The financial literacy level of the individual has a significant effect on compulsive buying behavior.

#### **Impulsive Buying Behavior (IBB)**

Impulsive and compulsive buying behaviors should not be confused with each other even though they often seem similar terms (Darrat et al., 2016). According to Rook (1987), impulsive buying behavior, "occurs when a consumer experiences a sudden, often powerful and persistent urge to buy something immediately". Individuals behave completely unintendedly and recklessly and bring individual differences while buying something impulsively (Fenton-O'Creedy et al., 2018; Fenton-O'Creedy and Furnham, 2020; Jones et al., 2003; Verplanken and Herabadi, 2001). In this respect, impulsive buying is much more common than compulsive buying behavior (Darrat et al., 2016).

In a study about the relationship between an individual's orientation towards monetary issues and impulsive buying behavior in Britain, results show that there is a relationship between attitude towards money and impulsive buying behavior (Fenton-O'Creedy and Furnham, 2020). According to Anisa *et al.*, (2020), the higher the financial literacy level of the generation Y, the less they perform impulsive buying behavior. Despite these findings, no study tests the effect of financial literacy on impulsive buying behavior. So  $H_2$  is as follows:

$H_2$ : The financial literacy level of the individual has a significant effect on impulsive buying behavior.

#### **Type A and B Personality Typologies (PT<sub>A, B</sub>)**

Personality can be defined as the individual differences in characteristic patterns of thinking, feeling and behaving. In this context, the characteristics of an individual shape the way of perception (Durna, 2005). In

the literature, personality was examined in various concepts and models. The remarkable ones are; the "Five-Factor Model of Personality" and the "Myers-Briggs Type Indicator" (Yıldırım and Pirende, 2019). Along with these two models, the type A and B personality models, developed by Freidman and Rosenman to bring out the social and psychological structure of the individual (Durna, 2004, 2005).

Individuals with A-type personalities feel under time pressure, have an ambitious, competitive, impatient nature, and plan and implement more than one thing at the same time. They also have a high expectation curve and experience stress and tension when those expectations are not realized. In this personality type, individuals race with themselves and their surroundings and neglecting life and the environment is high. (Aktaş, 2001; James, 2003; Rayburn and Rayburn, 1996). Type B individuals are patient, evaluate events from different perspectives and think carefully. Unlike Type A, they also can change their expectations according to the suitability of environmental conditions and they also are confident about themselves and their surroundings (Batıgün and Şahin, 2006; Gümüştekin and Öztemiz, 2005).

The results show that type A personalities show more hedonic behavior, while type B personalities show impulsive behavior (Semiz, 2017). In another study analyzing the typologies about buying gifts, type A individuals are determined to buy gifts for special occasions or thanking and compensation (Yıldırım and Pirende, 2019). And also, personality typologies, demographics, and compulsive buying have been conducted in previous studies (Khare, 2013) but financial literacy has not been studied yet in terms of compulsive and impulsive buying behavior. So, the following hypotheses are:

$H_3$ : Type A and B personality typologies have a significant effect on compulsive buying behavior.

$H_4$ : Type A and B personality typologies have a significant effect on impulsive buying behavior.

Previous studies test whether personality traits affect households' financial literacy and investment intention. Results show that active individuals, sympathy toward others, determined and well-organized are more willing toward investment (Sadiq and Khan, 2019). Also, Pinjisakikool (2017)'s study shows that the people whose personality traits are intellect and internal locus of control tend to have a higher level of financial literacy. In a study on the effects of personality traits on financial knowledge Killins (2017) reached that the Generation Y cohort is more knowledgeable in budgeting and risk management segments of financial literacy but lacks knowledge in retirement planning. Secondly, extraversion and conscientiousness are both important personality traits when regressed on individuals' overall financial literacy levels. Despite the existence of the mentioned studies, no study measures the effect of type A and B personality traits on financial literacy. So  $H_5$  hypothesis is as follows:

$H_5$ : Type A and B personality typologies have a significant effect on financial literacy.

As mentioned above, it can be said that personality affects irrational buying behaviors. Considering that the personality traits of the individual are at the root of individuals' behavior behaviors (Ajzen, 1991; Ajzen, 2002; Montano and Kasprzyk, 2015), it can be thought that financial literacy can mediate between irrational buying behaviors and financial literacy. Because financial literacy is defined as the ability to process economic information and make an informed decision about financial planning, debt and pensions (Lusardi, 2015). Since there is no study in the literature on whether financial literacy has a mediating effect between type A and B personality traits and irrational buying behaviors, the following hypotheses are as follows:

**H<sub>6</sub>:** Financial literacy has a mediation effect between personality typologies and compulsive buying behavior.

**H<sub>7</sub>:** Financial literacy has a mediation effect between personality typologies and impulsive buying behavior.

## Methodology

### Sampling and Data Collection

The population of the study consists of 18 years and older living in Türkiye. The questionnaire is conducted online to sample which is selected using a convenience sampling method from the population. A pilot study with 50 people is conducted before sending the questionnaire to the participants to prevent ambiguous translation and typing faults. The questionnaire text is sent to 580 people in total and 502 (86%) of them answered the questions. The answers of 97 participants who answered all the questions the same and did not answer most of the questions are not taken into consideration. In conclusion, an analysis of the study is conducted on a sample of 405 people.

### Scales

The common difficulties in measuring financial literacy levels differ according to the way the question is asked. In this study, questions were collected from previous studies to determine the financial literacy level (Durmuşkaya and Kavas, 2018). It consists of basic, intermediate, and advanced financial literacy levels of questions relevant to the Turkish Taxation System, investment information, Türkiye's economic situation, motor and traffic insurance information and retirement system. Participants answer the questions with yes, no or no idea. If the answer is "correct", 1 point, if "wrong" and "no idea", 0 points are given, out of a total of 25 points. To measure impulsive buying, we use Semiz (2017) adapted scale which is based on (Weun et al., 1997) and (Jones et al., 2003) research. To measure compulsive buying was adapted (Faber and O'guinn, 1992) and used in Turkish again (Semiz, 2017).

Personality typologies were measured with an 8-degree semantic difference scale consisting of 7 different personality typologies (Aktaş, 2001; Semiz, 2017). According to this scale, the total score for each participant's answer to the items is multiplied by 3, and the overall score for personality typology is calculated. The final total score can vary between 21 and 168.

Participants with scores lower than 100 are considered to have type B personality while those whose scores are higher than 100 are type A personality (Avcı and Kaya, 2010; Yildirim and Pirende, 2019).

## Results

### Descriptive Statistics

Table 1 shows that there is a majority of the participants, especially those born in 1981-1999 (312, 77%). The main reason for data to accumulate homogenously especially in these ages might be because the questionnaire has been applied online. Moreover, the participants accumulated homogenously have an undergraduate level of education (297, 73%) and 57% of these participants' income is 4.000 Turkish liras or below.

### Statistics on Construct Validity

To determine the construct validity of the convenience of the scale related to the CBB and IBB, a confirmatory factor analysis via the IBM SPSS AMOS 24 programme is applied. According to the results, all the statistics of  $\chi^2$  (df:53, N 405) 150,403,  $P < .001$ ; goodness of fit index (GFI) .93; comparative fit index (CFI) .95; root mean square error of approximation (RMSEA) .067 meet the critical values. It is seen in Table 2 that the factor loadings of these statements are above 0.60 in the  $P < .001$  level of significance. The statements, which factor loadings related to CBB and IBB, below 0.60 was removed from the subsequent analysis (see Table 5).

Table 1. Descriptive Statistics

Variables	Freq.	(%)
Marital Status		
Married	157	38.76
Single	248	61.24
Gender		
Male	192	47.40
Female	213	52.60
Income		
0-1.999	128	31.60
2.000-3.999	109	26.91
4.000-5.999	68	16.80
6.000-7.999	58	14.32
8.000-9.999	22	5.43
10.000+	20	4.94
Age		
1946-1964	5	1.23
1965-1980	49	12.10
1981-1999	312	77.04
2000-2002	39	9.63
Education		
Primary	8	1.98
High School	37	9.14
Bachelor	297	73.33
Graduate	63	15.55
Total (n):405 Income: Turkish Liras		

Table 2. Confirmatory Factor Analysis Results

(Impulsive Buying Behavior / IBB)	$\lambda$	AVE	CR
IBB1: When I go shopping, I buy some products even though I have no intention of buying them.	0.670	0.546	0.827
IBB2: I am an impulsive shopper.	0.812		
IBB3: When I see products that interest me, I buy them without thinking about the results.	0.770		
IBB4: Shopping without thinking is fun.	0.694		
(Compulsive Buying Behavior / CBB)		0.50	831
CBB3: If I have any money left at the end of the month, I would like to spend it.	0.691		
CBB6: I write a check (use a credit card) even though I know that I don't have the money to afford what I buy at the bank.	0.678		
CBB7: It happens that I want to buy something, regardless of what I buy.	0.792		
CBB9: I feel nervous and anxious on days when I don't go shopping.	0.665		
CBB13: I overdo it with a lot of my purchases and I can't stop it.	0.688		

All items were measured with a 5-point Likert-type scale. (1-strongly disagree; 5- strongly agree.) Abbreviations: AVE, average variance extracted, CR, composite reliability,  $\lambda$ , factor loadings

Table 3. Direct Effects

Hypothesis	$\beta$	t	Sig
H <sub>1</sub> FL→CBB	-0.165	69.442	0.001*
H <sub>2</sub> FL→IBB	-0.123	69.442	0.001*
H <sub>3</sub> PT <sub>A,B</sub> →CBB	0.051	38.210	0.30***
H <sub>4</sub> PT <sub>A,B</sub> →IBB	-0.033	38.023	0.50***
H <sub>5</sub> PT <sub>A,B</sub> →FL	-0.96	29.010	0.05**

\*P<0.01; \*\*P=0.05; \*\*\*P>0.05, F(1,403) =11.348; P<0.001; R<sup>2</sup>= 0.02

Table 4. Mediation Analysis

Hypothesis	$\beta$	SE	LLCI	ULCI
H <sub>6</sub> (PT <sub>A,B</sub> )→FL→CBB	0.0019	0.0012	0.0000	0.0046***
H <sub>7</sub> (PT <sub>A,B</sub> )→FL→IBB	0.0018	0.0012	-0.0000	0.0046***

LLCI, Lower-Level Confidence Interval; ULCI, Upper-Level Confidence Interval \*, P<0.01; \*\*P=0.05; \*\*\*P>0.05

Harman's single factor test is applied to test the common method bias. This test involves a confirmatory factor analysis allowing each item to load itself in a single mutual factor. This single factor shows that a single factor did not account for the majority of the variance in the data (cumulative variance= 0.14 < 0.50). For the evaluation of the scale on convergent validity, construct reliability (CR) and average variance extracted (AVE) are calculated. CR values of both factors are indicated above 0.70 and AVE values of both factors are indicated at 0.50 and above. These results were sufficient for demonstrating the convergent validity of the constructs (Fornell and Larcker, 1981; Hair et al., 2010).

**Hypothesis Testing**

Simple linear regression analysis is applied to test the research hypothesis. According to the results of H<sub>1</sub>, the model [ F(1,403) =11.348, P<0.001] is statistically significant. The regression equation among the variables is CBB=16.263+(-0.842) FL. According to this equation, an increase in FL score will cause a -0.842 decrease in CBB. The adjusted R<sup>2</sup> value is 0.02. According to this value, the 2% change in CBB depends on FL. So, H<sub>1</sub> is supported.

According to the results of H<sub>2</sub>, the model [F(1,403) =6.145, P<0.001] is statistically significant. The regression equation is IBB=15.913+(-0.517) FL. According to this equation, an increase in FL score will cause a -0.517 decrease in CBB. The adjusted R<sup>2</sup> value according to the analysis is 0.01. According to this value, the 1% change in IBB depends on FL. Accordingly, the H<sub>2</sub> is supported. The results show that about H<sub>3</sub>, the model [F(1,403) =1.048,

P>0.05] is not statistically significant. The adjusted R<sup>2</sup> value is 0.003. According to this value, the 03% change in CBB depends on PT<sub>A,B</sub>. So, the H<sub>3</sub> is not supported.

According to the H<sub>4</sub> results, the model [F(1,403) =0.438, P>0.05] is not statistically significant. The adjusted R<sup>2</sup> value is 0.001. According to this value, the 01% change in IBB is depending on (PT<sub>A,B</sub>). So, the H<sub>4</sub> is not supported. As the last direct effect H<sub>5</sub> results show that the model [ F(1,403) =3.723, P=0.05] is statistically significant. The equation is IBB=35.764+(-0.096) FL. According to this equation, an increase in PT<sub>A,B</sub> score will cause a -0.096 decrease in FL. The adjusted R<sup>2</sup> value is 0.009. According to this value, the 09% change in IBB is depending on PT<sub>A,B</sub>. So, the H<sub>5</sub> is supported.

**Examining the Mediation Effects**

The PROCESS macro programme in IBM SPSS Statistics is used to examine the mediation effects. The mediation effects of the FL between PT<sub>A,B</sub> and IBB and CBB are examined with the 5.000 bootstraps method (Preacher and Hayes, 2004).

The results of H<sub>6</sub> show that PT<sub>A,B</sub> →FL→CBB confidence interval includes zero (CI-[0.0000: 0.0046]) and the significance level is above 0.05 ( $\beta$ -0.0019, P>0.05). In this case, FL doesn't have a mediation effect between the PT<sub>A,B</sub> and the CBB. According to the results of H<sub>7</sub>: PT<sub>A,B</sub> →FL→IBB confidence interval includes zero (CI-[0.0000: 0.0046]) and the significance level is above 0.05 ( $\beta$ -0.0018, P>0.05). Also, in this case, H<sub>7</sub> FL doesn't have a mediation effect between the PT<sub>A,B</sub> and the IBB.

Table 5. Measurement Items

Financial Literacy (FL) (Statements and values on financial literacy was prepared based on the study was conducted. The values may differ today.)
<ul style="list-style-type: none"> <li>• In Türkiye, inflation has not fallen below 10% since 2002.</li> <li>• In private pension, no other income can be obtained other than 25% state contribution.</li> <li>• Foreign currency, stocks and real estate are investment instruments.</li> <li>• There is no difference in the retirement age of men and women when retiring from the Republic of Türkiye Social Security Institution</li> <li>• To send money abroad from the bank, it is sufficient to know only the IBAN of the person or company.</li> <li>• Taking a short-term loan allows us to pay less interest</li> <li>• The compulsory traffic insurance payment of the person who owns a vehicle for the first time and the person who has a 10-year-old vehicle are the same.</li> <li>• All vehicles must have both compulsory traffic insurance and insurance.</li> <li>• In a country where the inflation rate is 15%, it is the right investment to get a housing loan of 12% annually and buy a house.</li> <li>• Deposit rates and loan rates of all banks are the same.</li> <li>• Stocks cannot be bought without intermediary institutions</li> <li>• No matter how much income an individual earns, she pays 15% income tax.</li> <li>• Wire transfer is the process of sending money from one account in Bank A to another account in Bank B.</li> <li>• To retire from the private pension system and receive a monthly salary, it is necessary to stay in the system for 10 years and wait until the age of 56.</li> <li>• Unemployment rates exceed 15% in Türkiye since 2002.</li> <li>• The increase in the value of the foreign currency against the Turkish Lira is a positive situation for the importer.</li> <li>• You can earn income by depositing money in a Turkish Lira drawing account.</li> <li>• There is no advantageous situation between the purchase of a good in cash and the purchase of 5 installments with no interest in terms of the time value of money for the buyer when both situations are compared.</li> <li>• The corporate tax rate is 22%.</li> <li>• No matter which site I shop on on the Internet; My credit card information is very easy to pass into the hands of others and you can shop without my knowledge.</li> <li>• The housing loan interest rate is higher than the personal loan interest rate.</li> <li>• There is an icon showing that the website payment is secure.</li> <li>• It is better to prefer a personal loan with a monthly interest rate of 1.5% and an automobile loan with an annual interest rate of 19%.</li> <li>• While purchasing stocks in the stock market, it is possible to reduce the risk by diversifying the portfolio.</li> <li>• If you deposit your 1000 TL money into a time deposit account with a 5% annual fixed income, your money will be 1250 TL at the end of the 5th year.</li> </ul> <p>Type A and B Personality Types (PTA, B) (The expressions of the factors were first translated into Turkish. The expressions here have been translated into English as used in Turkish.)</p> <p>I'm not rigorous about the use of time  I am not competitive in business life  I never feel rushed, even under pressure  I make a decision after considering everything in detail  I do something slowly  I express my feelings  I am interested in many subjects  I am extremely sensitive to time  I am very competitive in business life.  I always feel rushed  I try to do a lot at once, and think about what to do next  I do something fast  I hide my feelings  I have little interest in topics other than business life</p> <p>Impulsive Buying Behavior (IBB) and Compulsive Buying Behavior (CBB) (The expressions of the factors were first translated into Turkish. The expressions here have been translated into English as used in Turkish.) (* Since the factor loadings are below .60, it has been excluded.)</p> <p>IBB1: When I go shopping, I buy some products even though I have no intention of buying them.  IBB2: I am an impulsive shopper.  IBB3: When I see products that interest me, I buy them without thinking about the results.  IBB4: Shopping without thinking is fun.  IBB5: I avoid purchasing things that are not on my shopping list. *  CBB1: I buy something when my financial situation is not good. *  CBB2: Other people might be terrified if they knew about my shopping habits. *  CBB3: If I have any money left at the end of the month, I would definitely like to spend it.  CBB4: I only pay the minimum amount of my credit cards. *  CBB5: I buy myself something to feel good. *  CBB6: I write a check (use a credit card) even though I know that I don't have the money to afford what I buy at the bank.  CBB7: It happens that I want to buy something, regardless of what I buy.  CBB8: I can easily buy products on sale. *  CBB9: I feel nervous and anxious on days when I don't go shopping.  CBB10: Shopping is fun. *  CBB11: I get stressed after shopping. *  CBB12: When I go home after shopping, I am not sure why I bought the things I bought. *  CBB13: I overdo with lots of my purchases and I can't stop it.  CBB14: I believe having more money will solve many of my problems. *</p>

## Discussion and Conclusion

The main purpose of the study is to extend the literature referring to determinants affecting the compulsive and impulsive buying behaviors that are subjected to many studies in the marketing literature. To make this extension, the relationship among irrational buying behavior, personality typologies and financial literacy variables which especially are not sufficiently studied with irrational buying behavior, is taken into account and tested with data. Also, it is examined whether financial literacy which can be defined as a regulator of consumers' financial behavior, mediates between type A and B personality typologies and the compulsive and impulsive buying behaviors.

Looking at previous studies, it was observed that individuals with high financial literacy levels use their financial activities effectively (Lusardi, 2015). Results show that credit card use increases compulsive buying and that there is a positive relationship between credit card use and compulsive buying (Arslan, 2015; Ian and Charise, 2008). And also, other study results show that financial literacy affects compulsive buying (Potrich and Vieira, 2018). The results of  $H_1$  and  $H_2$  prove the effect of financial literacy on compulsive and impulsive buying behaviors supporting the results of the previous studies. In the literature, it is examined whether there is a significant difference between the impulsive, hedonic and compulsive buying behaviors according to these two typologies, and it is determined that type A individuals have hedonic buying behavior while Type B individuals have impulsive buying behavior (Semiz, 2017). From this point of view,  $H_3$  and  $H_4$  don't support Semiz (2017)'s results about the existence of the impact of type A and B typologies on impulsive and hedonic buying behaviors.

According to the results by Anisa *et al.*, (2020), the higher the financial literacy level of generation Y, the more impulsive buying behavior they perform. However, according to Xiao and Porto (2017), financial literacy has a mediator effect between financial education and financial satisfaction. According to the mediation effect results, although it was seen that type A and B typologies affect financial literacy ( $H_5$ ), it was observed that financial literacy did not have a mediating effect ( $H_6$  and  $H_7$ ) between type A and B typologies and compulsive and impulsive buying behaviors. According to the related literature, consumers make different decisions on financial issues during different periods of their lives because this situation can influence decisions pertain to buying behaviors (Braun Santos *et al.*, 2016; Ian and Charise, 2008; Khare, 2013; Pirog and Roberts, 2007).

### Theoretical and Practical Implications

The theoretical contribution of this study is to test the effect of financial literacy, which is one of the subjects of behavioral finance, on irrational buying behaviors and to reveal whether financial literacy has a regulatory effect between A and B personality traits and irrational buying behaviors. While previous research about compulsive and

impulsive buying behaviors mostly have been studied using credit cards which is only one part of financial literacy literature (Badgaiyan and Verma, 2015; Erciş *et al.*, 2021), this study also includes the other factors of financial literacy such as tax, private pension, interest rates and others. By doing this, compulsive and impulsive buying behavior has been studied more comprehensively in broad terms of financial literacy.

The practical contribution is to reveal the effect of financial literacy on irrational buying behavior. The level of financial literacy will enable the individual to make more rational decisions in their spending habits. Accordingly, policymakers need to increase the financial literacy level of society. A high level of financial literacy will make it possible for individuals to control their buying behavior, to determine their real needs and this will cause more savings and subsequently increase their savings. So, Banks and other credit institutions can guide consumers based on their financial literacy score when giving credit or guiding on the use of credit cards.

### Limitations and Directions for Future Research

The first limitation of the study is the homogeneous distribution of the sample. This homogenous sample problem mostly derives from the online distribution of the questionnaire. This might be an acceptable constraint because this study was conducted during the pandemic period. Therefore, it can be said that the inclusion of older participants in the survey is one of the necessary issues for future studies, especially in terms of mediating the effects of financial literacy. The results show that personality typologies have no effect on compulsive and impulsive buying behavior but also have a significant effect on financial literacy. From this point of view, it might be useful to include "five-factor personality typologies" in the model besides A and B personality typologies. It might provide additional information both in terms of direct impact on buying behavior and the mediating effect of financial literacy.

According to the OECD, if the person has sufficient knowledge, he/she can properly direct his/her financial behavior (Atkinson *et al.*, 2016). From this point of view, the inclusion of financial literacy attitudes and behavior in the model might show different results. Financial literacy level is used to measure the knowledge level of the individual on financial issues. So, an important contribution that can be made in future studies is to measure financial literacy as a continuous variable under different factors, as Hamza and Arif (2019) and others (Atkinson *et al.*, 2016; Çelikten and Doğan, 2020; Dew and Xiao, 2011; Fessler *et al.*, 2020; OECD, 2013) did, instead of measuring whether a person has specific financial information as measured in this study. Such a measurement may be useful in including financial literacy as a perceived behavioral control variable in the theory of planned behavior or the theory of reasoned action.

## Extended Abstract

Financial literacy is a concept that has increased in importance in academic studies recently. Considering the individual's attitude towards money, financial literacy enables consumers to behave more frugal, helps them control their spending, helps them pay off their debts faster, and apply for loans less (Lusardi, 2008; Carlin and Robinson, 2012). The increase in individuals' financial literacy levels may keep them away from behavior products and services they do not need (Williams, 2007). In this respect, the relationship between financial literacy level and consumer behavior can be mentioned. Considering the studies on this subject, the level of financial literacy can show differences in terms of the age of the individuals, that is, the generation they are in. And also many studies mentioned that older people have higher financial literacy levels (Mitchell, Lusardi and Curto, 2009; Finke, Howe and Huston, 2017; Senda, Rahayu and Rahmawati, 2020; Watanapongvanich et al., 2020).

In terms of personality traits that differ from one to another; It can be observed that the personality traits of the individual take their place in consumer behavior research as the features that make individuals different from each other and shape their perceptions of events. (Durna, 2005; Yildirim and Pirende, 2019). By increasing the financial literacy level and financial education of individuals, different behavior behaviors that can be shown according to different personality traits (Semiz, 2017) can overcome financial and economic problems such as consuming more than the individual needs and saving less (Lusardi & Mitchell, 2007; Hilgert, Hogarth, & Beverly, 2003). Therefore, it is very important to raise a generation with a high level of financial literacy and financial education in terms of personal typologies. In terms of the generation in which individuals live, the conditions brought by the period they live in and the existence of studies on the effects of these conditions on consumer behavior show that studies on this subject are important. (Armağan and Küçükkambak, 2015; Kaderli, Aksu and Efe, 2017).

Regarding consumer behavior, compulsive and impulsive buying behavior is the important variables that are expected to affect individuals' control over their spending. Although it has been stated that CBB is a more common behavior in developed countries (Maccarrone-Eaglen & Schofield, 2018), no studies have been conducted on the relationship between consumers' financial literacy levels and compulsive buying behavior. In the literature, results show that credit card usage affects compulsive buying (Arslan, 2015; Roberts & Jones, 2001), and a positive relationship was observed between general attitude towards money, credit card usage and compulsive buying behavior (Ian & Charise, 2008). Similar results apply to studies on the relationship between impulsive buying and financial literacy. In a study about the relationship between an individual's orientation towards monetary issues and impulsive buying behavior in Britain, results show that there is a relationship

between attitude towards money and impulsive buying behavior (Fenton-O'Creedy and Furnham, 2020). According to Anisa et al., (2020), the higher the financial literacy level of the generation Y, the less they perform impulsive buying behavior. Despite these findings, no study tests the effect of financial literacy on impulsive buying behavior.

It can be observed that most of the studies on financial literacy in the literature are mostly analyzed through the demographic characteristics of the individual. In addition, no research has been found that tests the relationship between financial literacy and irrational buying behaviors which is the subject of many studies in the marketing literature. Therefore, this study aims to test the relationship between type A and B personality traits with financial literacy and compulsive and impulsive buying behaviors. To achieve this aim, it was aimed to reveal the dependency relationships between type A and B personality traits, financial literacy and compulsive and impulsive buying behaviors and to test whether financial literacy has a mediating effect between personality typologies and compulsive and impulsive buying behaviors.

Therefore, the research questions that the research tries to answer are as follows: Does financial literacy, which is defined as a variable that can enable consumers to make their budget expenditures more carefully, affect compulsive and impulsive behavior? Do personality traits, which are stated as one of the factors determining the behavior of the individual, affect financial literacy and compulsive and impulsive buying behaviors? Can financial literacy have a mediating effect between personality traits and compulsive and impulsive buying behaviors?

So, hypotheses are as follows:

**H<sub>1</sub>:** The financial literacy level of the individual has a significant effect on compulsive buying behavior.

**H<sub>2</sub>:** The financial literacy level of the individual has a significant effect on impulsive buying behavior.

**H<sub>3</sub>:** Type A and B personality typologies have a significant effect on compulsive buying behavior.

**H<sub>4</sub>:** Type A and B personality typologies have a significant effect on impulsive buying behavior.

**H<sub>5</sub>:** Type A and B personality typologies have a significant effect on financial literacy.

**H<sub>6</sub>:** Financial literacy has a mediation effect between personality typologies and compulsive buying behavior.

**H<sub>7</sub>:** Financial literacy has a mediation effect between personality typologies and impulsive buying behavior.

Considering the population and sampling process used in the research method, the population of the study consist of 18 years and older living in Türkiye. The questionnaire is conducted online to sample which is selected using a convenience sampling method from the population. A pilot study with 50 people is conducted before sending the questionnaire to the participants to prevent ambiguous translation and typing faults. The questionnaire text is sent to 580 people in total and 502 (86%) of them answered the questions. Data were collected using an online questionnaire from 405



participants selected by convenience sampling from this population. To test the hypothesis, data were subjected to regression and mediation analysis.

According to the descriptive statistics, there is a majority of the number of participants, especially those born in 1981-1999 (312, 77%). The main reason for data to accumulate homogenously especially in these ages might be because the questionnaire has been applied online. Moreover, the participants accumulated homogenously have an undergraduate level of education (297, 73%) and 57% of these participants' income is 4.000 Turkish liras or below.

According to the results of  $H_1$  [ $F_{(1,403)}=11.348$ ,  $P<0.001$ ] is statistically significant,  $H_2$  [ $F_{(1,403)}=6.145$ ,  $P<0.001$ ] is statistically significant.  $H_3$ , [ $F_{(1,403)}=1.048$ ,  $P>0.05$ ] is not statistically significant. According to the  $H_4$  results [ $F_{(1,403)}=0.438$ ,  $P>0.05$ ] is not statistically significant. As the last direct effect  $H_5$  results show that [ $F_{(1,403)}=3.723$ ,  $P=0.05$ ] is statistically significant.

According to the mediation analysis results of  $H_6$  show that  $PT_{A,B} \rightarrow FL \rightarrow CBB$  confidence interval includes zero (CI- [.0000: .0046]) and the significance level is above 0.05 ( $\beta$ - .0019,  $P>0,05$ ). In this case, FL doesn't have a mediation effect between the  $PT_{A, B}$  and the CBB. According to the results of  $H_7$ :  $PT_{A, B} \rightarrow FL \rightarrow IBB$  confidence interval includes zero (CI- [.0000: .0046]) and the significance level is above 0.05 ( $\beta$ - .0018,  $P>0,05$ ). Also, in this case,  $H_7$  FL doesn't have a mediation effect between the  $PT_{A, B}$  and the IBB.

Looking at previous studies, it was observed that individuals with high financial literacy levels use their financial activities effectively (Lusardi, 2015). Results show that credit card use increases compulsive buying and that there is a positive relationship between credit card use and compulsive buying (Arslan, 2015; Ian and Charise, 2008). And also, other study results show that financial literacy affects compulsive buying (Potrich and Vieira, 2018). The results of  $H_1$  and  $H_2$  prove the effect of financial literacy on compulsive and impulsive buying behaviors supporting the results of the previous studies. In the literature, it is examined whether there is a significant difference between the impulsive, hedonic and compulsive buying behaviors according to these two typologies, and it is determined that type A individuals have hedonic buying behavior while Type B individuals have impulsive buying behavior (Semiz, 2017). From this point of view,  $H_3$  and  $H_4$  don't support Semiz (2017)'s results about the existence of the impact of type A and B typologies on impulsive and hedonic buying behaviors.

The first limitation of the study is the homogeneous distribution of the sample. This homogenous sample problem mostly derives from the online distribution of the questionnaire. This might be an acceptable constraint because this study was conducted during the pandemic period. Therefore, it can be said that the inclusion of older participants in the survey is one of the necessary issues for future studies especially in terms of mediating the effects of financial literacy. The results show that personality typologies have no effect on compulsive and impulsive buying behavior but also have a significant effect on

financial literacy. From this point of view, it might be useful to include "five-factor personality typologies" in the model besides A and B personality typologies. It might provide additional information both in terms of direct impact on the buying behavior and the mediating effect of financial literacy.

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