

A Research on the Effect of Consumers' Demographic Characteristics on Their Financial Literacy Level

Tüketicilerin Demografik Özelliklerinin Finansal Okuryazarlık Düzeylerine Etkisi Üzerine Bir Araştırma

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ABSTRACT

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As financial markets have evolved, complex financial products and services have emerged that are difficult to understand for uninformed consumers. The liberalization of the market with such complex products and services and the increasing need for financial information due to increased competition have led researchers to focus on measuring the effects of financial literacy on financial decisions. In this measurement, researchers draw attention to the fact that many factors can be effective on financial literacy. Demographics are one of these factors, and there are many indications of its impact on financial literacy. In this study, it was aimed to determine the effects of demographic characteristics of undergraduate and associate degree students continuing their education at Konya Technical University on their financial literacy levels. Demographic characteristics such as gender, age, education level, and income status were discussed. Convenience sampling method, which is one of the non-random sampling techniques, was used in the study. 362 questionnaires were included in the study. As a result, it has been determined that demographic characteristics are effective on financial literacy.

ÖZET

Anahtar Kelimeler:
Tüketici,
Demografik
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Finansal
Okuryazarlık

Jel Kodları:
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Finansal piyasalar geliştikçe, yeterli bilgi düzeyine sahip olmayan tüketiciler için anlaşılması zor olan karmaşık finansal ürün ve hizmetler ortaya çıkmıştır. Piyasanın bu kadar karmaşık ürün ve hizmetlerle serbestleşmesi ve artan rekabet nedeniyle finansal bilgiye olan ihtiyacın artması, araştırmacıların finansal okuryazarlık düzeyinin finansal kararlar üzerindeki etkilerini ölçmeye odaklanmasını sağlamıştır. Bu ölçümde araştırmacılar birçok faktörün finansal okuryazarlık üzerinde etkili olabileceğine dikkat çekmektedir. Demografik özellikler bu faktörlerdendir ve finansal okuryazarlık üzerindeki etkisine dair birçok gösterge vardır. Bu çalışmada, Konya Teknik Üniversitesi'nde eğitimlerine devam eden lisans ve önlisans öğrencilerinin demografik özelliklerinin finansal okuryazarlık düzeylerine etkisinin belirlenmesi amaçlanmıştır. Demografik özelliklerden cinsiyet, yaş, eğitim durumu ve gelir durumu ele alınmıştır. Araştırmada tesadüfi olmayan örnekleme tekniklerinden biri olan kolayda örnekleme yöntemi kullanılmıştır. Araştırmaya 362 anket dahil edilmiş ve analizleri yapılmıştır. Analizlerde SPSS 25.0 programı kullanılmıştır. Sonuç olarak, demografik özelliklerin finansal okuryazarlık üzerinde etkili olduğu tespit edilmiştir.

1. INTRODUCTION

Although technology makes human life easier at the point reached today, it also makes it difficult. Because, the development of technology has increased the number of financial products which meet the economic needs of individuals best, on the other hand, it turned the use of such products into a complicated structure. The insufficient mention of the threats such as uncertainty and risk in those products, the efforts to convince the consumer as soon as possible by using marketing strategies, and the ambition of consumers to take advantage of the lack of information on these issues hinder the relationship between consumers and financial products. However, this problem can be solved by improving consumers' financial literacy levels. From definitions of financial literacy, an overarching explanation can be reached in the form of the ability of individuals to understand financial issues in daily life (Lusardi & Mitchell, 2007; Lusardi et al., 2010; Allgood & Walstad, 2013; Agarwalla et al., 2013; Doğan, 2016; Garg & Singh, 2018; Doğan, 2020; Kevser & Doğan, 2021).

Financial literacy enables potential consumers to earn more income and act more rationally in saving and borrowing (Lusardi, 2008). It plays a big role in making financial targets more real and planning more realistic (Jariwala & Sharma, 2011). In order to enjoy these advantages of financial literacy, however, the components that make finance and literacy meaningful must be brought together and consumers must be aware of these components. These components can be listed as information, financial attitude, financial behavior, etc. Information as a component has a greater prestige in financial literacy compared to other components. Because it plays both decision-making and a guiding role in the business of managing money. Therefore, consumers need financial information in their economic decisions. For that reason, a person who is qualified as financially literate must meet the basic level of financial knowledge proficiency (Remund, 2010). As a matter of fact, consumers, who are lost among the increasing number of financial product options, need to overcome this difficulty and make a rational decision by choosing the most appropriate financial product (Grohmann, 2018). Based on this critical importance, the importance of financial information for real and legal persons should be underlined.

The results of a survey conducted by the OECD in 2020 with the participation of Asian, European, and Latin American countries in financial literacy revealed that the financial literacy rates of these countries were 60% on average. This rate is a parameter that the level of financial knowledge of the participants in economic decisions is not very sufficient (OECD, 2020). The studies conducted on households using the survey method also show that a significant part of individuals cannot manage their financial situation and are not adequately prepared for retirement by not being cautious about the future (Niu et al., 2020). Huston (2010) argued that there is a need for a financial literacy measurement structure to correct this negative picture, such as improving the current level of financial literacy. In this regard, Lusardi & Mitchell (2011) drew attention to four main points to measure the financial literacy level such as the level of interest, simplicity, differentiation capacity, and briefness. Opletalova (2015) indexes this measurement according to the characteristics that should be present in the individual. These features are the idea that the individual should have about financial instruments, his level of knowledge about the management of the household budget, the ability to plan for expenditures and prudence.

The points mentioned related to financial literacy so far draw attention to the existence of many factors that can have an impact on financial literacy. There are many indications of the effect of demographic factors on financial literacy. Many studies (Van Rooij et al., 2011; Lusardi, 2012; Chen & Volpe, 2002; Lin et al., 2017) confirm that socio-demographic factors such as gender, age, education level, income status, marital status, title, parental influence, and entrepreneurial spirit, etc. are important factors on the financial literacy levels of individuals.

The aim of the study which was created in light of this information is to determine the effect of demographic factors on the financial literacy levels of consumers. For this purpose, demographic factors such as gender, age, education level, and income status were discussed. The research was conducted on university students due to their tendency towards financial products. In this respect, the study differs from other studies and contributes to the literature. 389 data which was collected with volunteer participants were evaluated and tested using the SPSS program with various statistical analyses. According to the research findings, it was found that demographic factors have an influence on the financial literacy levels of consumers.

The study continues with the literature section after the introductory section. In the literature section, the research on the subject has been discussed in a controversial way and hypotheses have been developed. In the chapter on Methodology, the purpose, importance, and method of the research are mentioned. Research questions were asked and information about data analysis was presented. As a result of these analyses, the findings section was formed. Finally, the effects and limitations of the study on the application were listed and suggestions and recommendations were made for further research in order to contribute to the literature.

2. LITERATURE REVIEW

Financial literacy can be defined as measuring how much an individual can understand and use information about personal finance (Huston, 2010). Because this information can sometimes be a very simple credit account, sometimes it can be an investment decision to be taken for the future. As it becomes functional in the academic literature, financial literacy is the knowledge of financial products (e.g., the definition of stock and bond, the difference between fixed and adjustable proportional mortgage), the knowledge of financial concepts (e.g., inflation, compound interest, and credit scores), having the mathematical or arithmetic skills needed to make effective financial decisions (Hasting et al., 2013). However, this deficiency is the most important obstacle to making financial decisions. In fact, most individuals are unaware of even basic financial concepts such as the operation of compound interest, the differences between nominal and real values, and the division of risk (Lusardi, 2007; Harputlu & Kendirli, 2019).

Not long ago, complex financial products and services emerged in financial markets that are difficult to understand, especially for investors who do not have sufficient financial knowledge (Van Rooij et al., 2011). The liberalization of the market with such complex products and services, and the increasing need for financial information due to increased competition, have enabled researchers to focus on measuring the effects of financial literacy on financial decisions.

The Global Financial Literacy Centre of Excellence (GFLEC) and the TIAA Institute have released the 2020 Personal Finance (P-Fin) Index, an annual survey in order to assess the knowledge and understanding which enables sound financial decision-making and effective management of personal finances, during the Covid-19 pandemic. Since financial fragility is strongly with financial literacy among specific demographics such as African-American groups and those with low incomes and many Americans are poorly equipped to deal with financial decisions, they prepared a link. Thanks to the link <https://gfec.org/education/financialresilience/>, they listed ten suggestions for managing money during this pandemic. In addition, the possibility of linking to government, non-profit organizations, and media articles has been introduced to help people in these turbulent times. These resources have helped users create a budget, learn how to build savings, track loans, manage debt, and use online technology to make financial decisions (Lusardi et al., 2020).

2.1. The Base of Hypothesis

The demographic factors which were included in this study and understood to have an impact on the level of financial literacy are; age, gender, education level, and income status.

Related to gender, Wagland (2009) made a comparison between men and women at the level of financial literacy. In conclusion, it was revealed that women's financial literacy levels were lower than men's. In addition, the study states that men are more cold-blooded in financial matters than women and prefer to take more risks in financial decisions. Beichar (2018) investigated the effect of financial literacy level on individuals' financial decisions. As a result of the research, it was found that gender was also associated with financial literacy along with other demographic factors. In their research designed to analyze the financial literacy of university students, Chen & Volpe (2002), revealed that the financial literacy levels of the 30 and younger age group, those with low work experience, and women were low. In their study which they conducted among Swedish adults who made plans for retirement and those who didn't, Almenbergh & Söderbergh (2011) found that the financial literacy levels of the elderly, women, and individuals with low education levels and income levels were low. Considering these studies which reveal the relationship between gender and financial literacy level, the H_1 hypothesis was developed as follows:

H₁: There is a significant relationship between gender and financial literacy level.

Another important demographic factor that affects the level of financial literacy is age. Mouna & Anis (2017) examined the factors affecting the financial literacy levels and stock acquisitions of Tunisian residents. Accordingly, significant relationships were found between financial literacy level and age, gender, education level, and income level. Beichar (2018); Almenbergh & Söderbergh (2011) suggested in their research that age is associated with financial literacy level along with other demographic factors. Accordingly, the hypothesis is formed as follows:

H₂: There is a significant relationship between age and financial literacy level.

Educational background is also significantly correlated with the level of financial literacy. Gramlich (2002) determined that the level of financial literacy can be improved through education and thus this level can be further increased. Hastings et al., (2013) established a relationship between financial literacy level and financial education

in their research. The findings that emerged as a result of this relationship pointed to a positive correlation between inadequate financial information and mistakes which were made in financial decisions. Ferguson (2002) has shown that financial literacy can be increased through financial education but also stressed that this will not completely eliminate financial problems. Based on the relationships in these researches, another hypothesis was developed as follows:

H₃: There is a significant relationship between education level and financial literacy level.

When the studies in which income status was associated with financial literacy level were analysed, De Bassa Scheresberg (2013) claimed that financial literacy levels were lower, especially in demographic segments such as low-income earners, women, and those with low levels of education. In a study conducted in Japan, it was found that the participants could not answer even simple financial questions correctly. It was concluded that a certain group of people including those with low-income earners among the demographic factors was not financially literate (Sekita, 2011). Beal & Delpachitra (2003) investigated the financial literacy levels of Austrian university students. The findings showed that the level of financial literacy and work experience and income status were significantly and positively related. The hypothesis H₄ developed in this direction is as follows:

H₄: There is a significant relationship between income status and financial literacy level.

3. MATERIALS AND METHOD

In this study, it was aimed to determine the effect of demographic characteristics of undergraduate and associate degree students who continue their education at Konya Technical University on their financial literacy levels. It is possible to reach various research in the literature related to the effect of demographic characteristics on the level of financial literacy. However, it is thought that the study will contribute to the relevant literature since the number of studies on university students is quite low. In this study, the survey technique which is one of the quantitative research methods was used. In order to get information about the level of financial literacy (OECD, 2015), the study of financial literacy measurement tool was used and the participants were also asked about their demographic characteristics. In the study, the answer was sought for the question “Do the demographics of consumers have an impact on their financial literacy?” In this direction, the relevant literature was reviewed and hypotheses were developed. The hypotheses which were developed can be listed as follows:

- H₁. There is a significant relationship between gender and financial literacy level.*
- H₂. There is a significant relationship between age and financial literacy level.*
- H₃. There is a significant relationship between educational status and financial literacy level.*
- H₄. There is a significant relationship between income status and financial literacy level.*

The research model designed according to the hypotheses developed is shown in Figure 1:

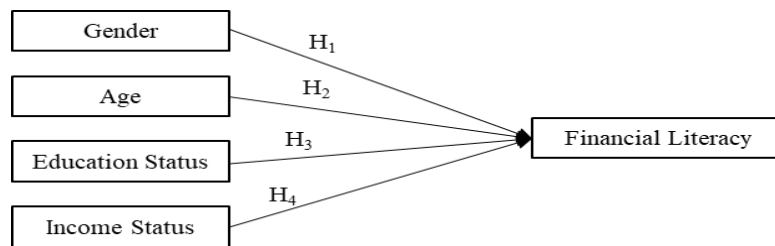


Figure 1. Research Model

In the study, the convenience sampling method which is one of the non-random sampling techniques was used. Between January 2022 and March 2022, a total of 389 surveys were collected from Konya Technical University through the Google survey form. 27 questionnaires were not included in the research because there were missing data. 362 questionnaires were included in the research and analysis was carried out. In the analysis, SPSS 25.0 for Windows (Statistical Package for Social Sciences), program was used. The reliability of the financial literacy level scales prepared according to the predetermined scale type was measured by Cronbach's Alpha Reliability coefficient. Cronbach's Alpha reliability values in the study were higher than 0.80 on all scales, indicating that the survey had an acceptable, good level of reliability (Cronbach, 1951; Baker, 1991; Polat et al., 2020; Alkara, 2021). The suitability of continuous variables to normal distribution was evaluated using the Shapiro-Wilk test.

As a result of the test, it was determined that the data came from the normal distribution family. The evaluation of the data in line with the parametric test conditions was analyzed by independent t-test. The relationship between continuous variables was tested by Pearson correlation analysis. As a result of the analysis, the degree, magnitude, and direction of the relationships between the variables were evaluated by Pearson correlation coefficient (r). While interpreting the results of the analysis, the error was kept at the level of 0.05 or 0.01, so that decisions were made at 95% and 99% confidence levels.

Information on sampling is available in Table 1. According to Table 1, it is noteworthy that there is a balanced distribution between men and women in the sample. 49.7% of the sample consisted of women while 50.3% of male participants. It was determined that 22.1% of the people in the study were younger than 18 years old, 25.4% were in the 18-20 age range and 52.5% were older than 20 years. In addition, it was determined that 66.3% of the sampling had an associate degree and 33.7% had a bachelor's degree. It was found that 38.7% of the individuals in the research had an income level of 2000 liras or less, while 41.4% had an income between 2001-2500 liras and 19.9% had an income of 2501 liras or higher. In the study where the findings of the financial literacy scale were investigated, some descriptive characteristics of the participants are shown as follows in Table 1, as explained:

Table 1. Demographic Characteristics of the Participants

	S	%
Gender		
Female	180	49.7
Male	182	50.3
Age		
Under 18 Years	80	22.1
Ages 18-20	92	25.4
Over 20 Years	190	52.5
Education Status		
Undergraduate	122	33.7
Associate Degree	240	66.3
Income Level		
2000 ₺ and Below	140	38.7
2001 – 2500 ₺	150	41.4
2501 ₺ and Above	72	19.9

Financial literacy scale statements were rated and scored in the five-point Likert type. The Cronbach Alpha value financial literacy scale was determined as 0.939. It was also observed that the items of the scale in question were homogeneous and related expressions and that the test was collectible ($F=54.755$, $p=0.0001<0.05$; $F=3.287$, $p=0.07>0.05$). In terms of reliability analysis applications of the financial literacy scale, the test design is also appropriate ($F=35.278$, $p=0.0001<0.05$). According to the obtained results, it was seen that the scale fulfilled the reliability conditions accepted in the literature and that their internal consistency was acceptable independently. The following table summarizes the reliability analysis findings described above (Table 2).

Table 2. Reliability Analysis

	Scales	Number of Articles	Cronbach Alpha	Relationship Between Substances	Test Collectibility
Financial Literacy Level	Financial Literacy Level	8	0.939	$F=54.755$, $p=0.0001<0.05^*$	$F=3.287$, $p=0.070>0.05$
	Hotelling T^2			$F=35,278$; $p=0,0001^*$	

It was determined that the financial literacy parameter came from a normal distribution and the variances were homogeneous. The hypotheses established for both tests were accepted ($p_{\text{Shapiro-wilk}}=0.5618>0.05$; $p_{\text{Levene}}=0.368>0.05$). In line with these results, statistical analyses for some demographic characteristics and financial literacy values will be examined with parametric test methods. Table 3 supports the findings of this explanation.

Table 3. Normality and Homogeneity Test

	Statistical Value	df	p
Shapiro–Wilk Statistics	0,961	362	0.561
Levene Statistics	1.004	1, 359	0.368

* Statistical researches were carried out at a 95% confidence level.

4. RESULTS

4.1. Testing Hypotheses

4.1.1. Gender Differences in Financial Literacy

The findings of the differences in the sub-dimensions of the financial literacy scale according to gender are given below in Table 3.

Table 4. Difference in Financial Literacy Level According to Gender

Dimensions	Gender	n	Average	Std. Dv.	t-value	p-value
Financial Literacy Level	Female	180	3.195	0.577	2.285	0.023
	Male	182	3.363	0.803		

The results obtained are as follows: Financial literacy level scores were determined as 3.195 ± 0.577 for women, while it was determined as 0.803 ± 3.363 for men. Men's financial literacy level scores were statistically significantly higher than women's ($p=0.023<0.05$). In line with the results, the hypothesis which was developed within the scope of the study;

" H_1 : There is a significant relationship between gender and financial literacy level" was accepted.

4.1.2. Differences in Financial Literacy Level According to Age

The findings of the differences in the financial literacy scale according to the age of the participants are given below in Table 4.

Table 5. Difference in Financial Literacy Level According to Age

Dimensions	Age	n	Average	Std. D.	F	p	Group difference
Financial Literacy Level	< 18	80	3.267	0.718	11.362	<0.000	a
	18 – 20	92	3.169	0.668			a
	≥ 20	190	3.553	0.685			b

Multiple comparisons were made with the One-way ANOVA test and binary comparisons were made with the Tukey test. In group comparisons; there are statistically significant differences between groups with different letters. $*\alpha=0.05$. The level of financial literacy was observed as $3,267 \pm 0.718$ in participants under 18 years of age, while the average score of people between the ages of 18-20 was determined as $3,169 \pm 0.668$. Among the people over the age of 20, the average level of financial literacy was $3,553 \pm 0.685$. According to the results; The level of financial literacy differs significantly according to the age of the individuals in terms of statistics ($p<0.000<0.05$).

The differences between the age groups are as follows: The level of financial literacy was determined to be statistically significantly less in people younger than 18 years of age than in people older than 20 years. The level of financial literacy of people between the ages of 18-20 is again statistically significantly lower than that of people older than 20 years. As a result, the financial literacy level of people over the age of 20 was found to be higher than other age groups. According to the results obtained, developed within the scope of the study,

The hypothesis " H_2 : There is a significant relationship between age and financial literacy level" was accepted.

4.1.3. Differences in Financial Literacy Level According to Education Status

The findings of the differences in the financial literacy level scale according to their educational status are given below in Table 5.

Table 6. Difference in Financial Literacy Level According to Educational Status

Dimensions	Education	n	Average	Std. Dv.	t	p
Financial Literacy Level	License	122	3.124	0.685	3.033	0.003
	Associate	240	3.358	0.701		

While the financial literacy level scores of the undergraduate level participants were 3.124 ± 0.685 , the financial literacy level scores of the associate degree level participants were 3.358 ± 0.701 . The financial literacy level of the associate degree level participants was statistically significantly higher than the undergraduate level participants ($p=0.03<0.05$). According to the results obtained, the hypothesis which was developed within the scope of the study according to the obtained results " H_3 : There is a significant relationship between educational status and financial literacy level" was accepted.

4.1.4. Differences in Financial Literacy Level According to Income Status

The findings of the differences in the financial literacy scale according to the income level of the participants are given in Table 6.

Table 7. Difference in Financial Literacy Level According to Income Status

Dimensions	Income	n	Average	Std. D.	F	p	Group difference
Financial Literacy Level	< 2000	140	3.235	0.730	14.727	<0.000	a
	2000–2500	150	3.360	0.645			a
	≥ 2501	72	3.767	0.661			b

While the financial literacy level scores of the participants with an income level below 2000 TL were determined as 3.235 ± 0.730 , the financial literacy level scores of the participants between 2000-2500 TL were determined as 3.360 ± 0.645 . The average financial literacy level of people with an income of 2501 TL and above is 3.767 ± 0.661 . In the results which were obtained, it was determined that financial literacy levels showed statistically significant differences according to the income level of consumers ($p<0.00<0.05$). The results are as follows: In the study, the financial literacy level of people with an income status of 2501 liras and above was determined as statistically significantly higher than those whose income level was below 2000 liras and those between 2000 and 2500 liras. Consumers with incomes below 2000 liras and between 2000 and 2500 liras have a statistically similar level of financial literacy. According to the obtained results, the hypothesis called " H_4 : There is a significant relationship between income status and financial literacy level" and which was developed within the scope of the study was accepted.

5. CONCLUSION and DISCUSSION

As financial markets have evolved, complex financial products and services have emerged that are difficult to understand for consumers who do not have a sufficient level of information (Van Rooij et al., 2011). The liberalization of the market with such complex products and services and the increasing need for financial information due to increased competition have enabled researchers to focus on measuring the effects of financial literacy level on financial decisions. In this measurement, the researchers point out that many factors can have an impact on financial literacy. There are many indications of the impact of demographic factors on financial literacy. Numerous studies (Chen & Volpe, 2002; Van Rooij et al., 2011; Lusardi, 2012; Lin et al., 2017) confirm that socio-demographic factors such as gender, age, education level, income status, marital status, title, parental influence, entrepreneurial spirit, etc. are important factors on the financial literacy levels of individuals.

In this study, where it was aimed to determine the effects of demographic factors on the financial literacy levels of consumers, it was concluded that demographic factors affected the financial literacy levels of consumers. According to this result, all of the hypotheses which were developed (H₁, H₂, H₃, and H₄) were accepted. When his result is compared to the literature, it is similar to the work of Chen & Volpe (2002); Wangland (2009); Almenbergh & Söderbergh (2011); Hastings et al., (2013); De Bassa Scheresberg (2013); Sekita, 2011; Mouna & Anis (2017); Beichar (2018). In particular, the number of studies examining the effect of gender on the level of financial literacy is more predominant, such as Chen & Volpe (2002); Wangland (2009); Beichar (2018). In this study, the financial literacy level scores of especially male participants were statistically significantly higher than women in terms of gender ($p=0.023<0.05$). At this point, it can be said that women's financial literacy levels need to be improved a bit more. When the results of other demographic characteristics were evaluated, the financial literacy level of people older than 20 years was higher than other age groups. Therefore, providing financial literacy training to young people who are potential consumers until the age of 20 will enable them to be more successful in their financial decisions. In terms of education level, the financial literacy level of associate degree-level participants was statistically significantly higher than that of undergraduate-level participants ($p=0.03<0.05$). The fact that the distribution here is not very balanced may have an impact on this result, but the result here indicates that there is an inverse correlation between education level and financial literacy level. Ferguson (2002) differs from this study, albeit in part because he argues that financial problems cannot be completely overcome by education alone. On the other hand, the financial literacy level of people with an income status of 2501 TL and above differed significantly from those whose income level was below 2000 TL and those between 2000 and 2500 TL in terms of statistics. This result shows that the level of financial literacy will increase as the income situation increases. In other words, as people's incomes increase, their standard of living will increase, which will allow them to engage in different financial instruments. For that reason, more financial information is needed. This requirement can only be met with an adequate level of financial literacy.

What has been described so far shows that the concept of financial literacy has the potential to become an increasingly important component (Grohmann, 2018). Consciously or unconsciously, the consumers who spend continuously, especially in recent times, have become the center of attention and increased their importance even more. Undoubtedly, not only consumers but also all actors in financial life such as investors and producers should give due importance to financial literacy in order not to have difficulty in choosing financial instruments and to obtain higher returns (Jiang, et al., 2020).

There are some limitations in this study. Due to time pressure, no further data could be accessed. The research was conducted on university students. In the research which employs other segments of society, different results can be reached. At the same time, the possibility of different results differing from a sample with different demographics in different cities and countries should be evaluated. On the other hand, with the use of different analysis techniques, different results can be reached. Paying attention to these issues in the future research to be carried out in this regard and the use of different techniques, including qualitative methods, will further reduce the mentioned constraints and ensure the emergence of studies with high added value.

AUTHORS' DECLARATION

This paper complies with Research and Publication Ethics, has no conflict of interest to declare, and has received no financial support. The author(s) sent a signed "Copyright Transfer Form" to the journal. There is no need to obtain ethical permission for the current study as per the legislation. The "Declaration Form Regarding No Ethics Permission Required" was sent to the journal by the authors on this subject.

AUTHORS' CONTRIBUTIONS

Conceptualization, writing-original draft, editing – ASK, data collection, methodology, formal analysis – ASK and AG, Final Approval and Accountability – ASK and AG.

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