



## Clance Impostor Phenomenon Scale (CIPS): Adaptation and Validation in Turkish University Students

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### Abstract

Impostor phenomenon (IP) is the intense feeling of high achieving individuals who cannot internalize their success and attribute it to interpersonal skills, luck, timing, and contacts. The Clance Impostor Phenomenon Scale (CIPS) assesses the fear of failing and being evaluated negatively, not being able to repeat success, fear of the inability to satisfy the expectations of others, and being less capable of others. This study aims to adapt the CIPS into Turkish. Four hundred seven university students enrolled in the study whose average age is  $21.12 \pm 1.72$  years. Confirmatory factor analysis (CFA) was conducted. The results of the CFA indicated that the first-order one-factor model was a good fit for the data. Criterion validity analysis results showed a strong negative correlation between CIPS and self-esteem and a strong positive correlation between CIPS and trait anxiety. Test-retest reliability was also strong. The Turkish version of the CIPS has good psychometric properties. The scale can be used to assess the IP levels of young adults.

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## INTRODUCTION

Achievements and success constitute an essential part of individuals' life. They are desires and goals that individuals struggle to achieve in personal and professional life. By opening wide horizons of knowledge in individuals' lives, college experience may significantly contribute to personal and professional life. Students obtain knowledge, academic, social, and technical skills for a successful career via college experience. College experience may include noteworthy or minor success or failure for students. In other words, the college experience may be considered the total of students' achievements, successes, or failures.

When the students attribute the causes of their success to luck or good timing, and they are not internalizing their achievement, it may be stated that they are experiencing Impostor Phenomenon (IP). Clance and Imes (1978) state that IP is the intense feeling of high achieving individuals who cannot internalize their success and attribute it to interpersonal skills, luck, timing, and contacts. Therefore, IP is regarded as an experience of self-perceived intellectual fraud in terms of success (Hoang, 2013).

A person struggling with IP can develop mental health conditions due to repeated feelings of inadequacy. Negative emotions could lead to generalized anxiety disorder, social anxiety disorder, or depression associated with IP (Clance & Imes, 1978). Although it is not an official diagnosis list in the DSM-5 (APA, 2013), as a type of intellectual self-doubt, some researchers suggested that the experience had to be accepted as a mental illness (Kolligian & Sternberg, 1991). This experience which causes a belief that a person does not deserve his/her achievements and results in anxiety and self-doubt about the achievements is a familiar feeling among college students (Gardner & Holley, 2011; Parkman, 2016). As a result, individuals who experience IP attribute their success to luck, social relationships, and timing rather than ability or intelligence. Clance & Imes (1978) states that regardless of their successful career history, these individuals are constantly afraid of being exposed as incompetent. In a recent systematic review, Bravata et al. (2019) synthesized 62 studies of IP. They found that half of the studies were published within the last six years, much of the research focused on women and ethnic minorities, depression and anxiety were typically comorbid with IP. There is a negative relationship between IP and job satisfaction, job performance, and burnout variables.

In literature, there are IP researches that focus on overcoming it via internalizing one's accomplishments, has been documented in both graduate and undergraduate student populations in the field of higher education (Gardner & Holley, 2011; Hoang, 2013; Hutchins, 2015; Parkman, 2016; Zambrana et al., 2015). Specifically, researchers have identified a positive correlation between IP and perfectionism, perfectionistic cognitions and perfectionistic self-presentation (Cokley et al., 2018; Cowie et al., 2018; Sakulku & Alexander, 2011), depressive mood and anxiety (Wang et al., 2019), state anxiety (Badawy et al., 2018), stress (Parkman, 2016), depression (McGregor et al., 2008), and self-handicapping (McElwee & Yurak, 2007). Conversely, a negative correlation is encountered between IP and self-esteem (Cokley et al., 2018; Ghorbanshirodi, 2012; McElwee & Yurak, 2007; Yaffe, 2020a), entitlement (Ross & Krukowski, 2003), conscientiousness, and extraversion (Bernard et al., 2002), emotional intelligence (Ghorbanshirodi, 2012), lighthearted playfulness (Brauer & Proyer, 2017), a sense of purpose in life, and autonomy (September et al., 2001).

According to King and Cooley (1995), IP may negatively impact students in several ways, such as questioning their admission to academic programs, feeling academically unprepared, inadequacy, anxiety, and stress, attributing examination scores to luck. Felder (1988) states that related to self-efficacy and self-doubt, these processes may cause to change majors or drop out. Thus, experiencing self-doubt and lack of confidence about his/her success can affect students' academic performance. In addition to this, as a significant factor, gender is frequently investigated with IP to explain the feelings of recognition and achievement of females. Clance and Imes (1978) investigated the presence of IP in high-achieving women and suggested that women experience IP more than men. However, the research results have mixed reviews regarding the relationship between IP and gender. While some

research results point out a gender difference in the intensity of IP feelings (Bernard et al., 2017; Jöstl et al., 2012; September et al., 2001), others do not (Blondeau & Awad, 2018; Gravois, 2007). Thus, it may be stated that the potential gender effect on IP remains unsolved.

Various measurement scales are used to assess IP in clinical and research applications in the literature. The most commonly used scales are the Harvey Impostor Scale (HIPS; Harvey, 1981), the Clance Impostor Phenomenon Scale (CIPS; Clance, 1985), the Perceived Fraudulence Scale (PFS; Kolligian & Sternberg, 1991), the Leary Impostorism Scale (LIS; Leary et al., 2000) and the State Impostor Phenomenon Scale (SIPS; Fujie, 2010). The HIPS is a 14-item scale that assesses the perceptions and effects of IP for graduate and undergraduate populations. The results of the studies of HIPS revealed that it fails to differentiate impostors from non-impostors (Holmes et al., 1993) and it has psychometric weaknesses (Chrisman et al., 1995), and it has an unacceptable level of internal consistency (Edwards et al., 1987; Kolligian & Sternberg, 1991). Furthermore, there is another issue with the HIPS wording that may prevent accurate self-reporting to statements that respondents may view it as unfavorable.

The most frequently used instrument by researchers and practitioners for measuring IP is the CIPS which assesses the fear of failing and being evaluated negatively, not being able to repeat success, fear of the inability to satisfy the expectations of others and being less capable of others with 20 items and three factors as Fake, Discount and Luck. The factor of "Fake" assesses self-doubt and concerns about intellect and abilities. The factor of "Discount" included items related to fear of the inability to admit a successful performance. "Luck" as the third factor assesses the tendency to attribute success to chance. Higher scores on the CIPS indicate higher levels of experiencing IP (Clance & Imes, 1978). The CIPS is commonly used in IP research as it reveals whether the respondents are experiencing IP and to what degree. Therefore, the CIPS is also more sensitive in differentiating individuals with IP when it is compared to HIPS (Holmes et al., 1993; Mak et al., 2019). The CIPS also has an advantage in wording that minimizes social desirability differently from HIPS (Mak et al., 2019). In addition, the research results demonstrated that CIPS has a high confidence level of internal consistency (Chrisman et al., 1995; French et al., 2008; Holmes et al., 1993).

Kolligian and Sternberg (1991) developed the PFS, which assesses perceived fraudulence and its corresponding personality traits in young adults, is a 51-item instrument measuring IP. In literature, the use of CIPS seems to be more favorable for economic reasons when it was compared to PFS. Another measure to assess IP is the LIS, which is based on a fraudulent component of IP with a seven-item instrument. Unlike other measurement tools, LIS focuses on a sense of being an impostor or fraud with a unidimensional definition of IP (Leary et al., 2000). In addition to these scales, Fujie (2010) developed the SIPS, which measures college students' impostor phenomenon experience with two factors and 12 items. The psychometric properties of the SIPS need to demonstrate with a wide range of populations and applications.

The primary goal of this study is to adapt the CIPS to Turkish culture, test its psychometric properties, and provide evidence for its validity. CIPS was selected for this study for several reasons, such as it differentiates experiencing IP from non-impostor, its administration and scoring are easy, and its wording focuses on success rather than failure. The IP research included the creation of various measurement instruments and increased curiosity about the different populations in which they are most likely to live. A limited number of IP research specifically addressed the IP experience of undergraduate students. It is crucial to understand whether undergraduate students experience IP and how deeply it is experienced because it may cause less involvement in classroom discussion and less attendance to the courses. Several adaptation studies of CIPS in the literature reveal different factor structures for the scale. For instance, CIPS had two dimensions in the German population (Brauer & Wolf, 2016), four dimensions in the Hebrew speaking women population (Yaffe, 2020b), and a unidimensional factor structure in the Austrian doctoral student population (Jöstl et al., 2012). Despite its widespread use in literature, there is no adaptation study of the CIPS on undergraduates in Turkish

culture. Özdemir (2015) applied a study that assesses IP by using CIPS on the research assistant population in Turkey. In this study, we intended to enhance the validity and reliability results of the CIPS on undergraduates.

On the other hand, Akın et al. (2015) adapted the LIS on undergraduate students in Turkey, and they reported that the scale is reliable and valid with good fit indices and internal consistency. Thus, it was expected to evaluate the psychometric properties of CIPS by internal consistent and test-retest reliability, convergent validity, and the factor structure by employing confirmatory factor analysis in Turkish-speaking undergraduate students in this study. Understanding IP, which results in psychological distress and influences the career decisions of undergraduate students, can help identify students who suffer from self-perceived intellectual fraud.

## **METHOD**

### **RESEARCH MODEL**

The purpose of this study was to assess the validity and reliability of the Turkish version of CIPS (Clance and Imes, 1978). As a result, the quantitative survey model was used.

### **PARTICIPANTS**

#### ***THE SAMPLE GROUP 1***

There were 407 undergraduate students [260 (63.9%) females and 147 (36.1%) males] in this group. The participants are from faculties as follows: Faculty of Education, Faculty of Medicine, Faculty of Engineer, Faculty of Health Sciences, Faculty of Science and Literature. Among the participants, 85 (20.9%) were first-year students, 106 (26%) were sophomores, 119 (29.2%) were juniors, and 78 (19.2%) were seniors from different faculties. Additionally, 19 (4.7%) were fifth and sixth-class students enrolled in the Faculty of Medicine. The ages of the participants ranged from 18 to 26 years, and the mean age was 21.12 (SD= 1.72). Students were invited to participate in a web survey via email invitation. The data of this group was used for confirmatory factor analysis and reliability analysis.

#### ***THE SAMPLE GROUP 2***

The second sample group comprises 56 volunteer participants for the test-retest process. In test-retest process; 40 (71.4%) of the participants were female and 16 (28.6%) were male, 10 (17.9 %) were freshmen, 25 (44.6%) were sophomores, 13 (23.2%) were juniors and 8 (14.3%) were seniors from different faculties. Additionally, their ages ranged between 19 and 29, and the average age was 21.38 (SD= 2.09).

#### ***THE SAMPLE GROUP 3***

In order to determine the convergent validity of the CIPS, 132 volunteer participants who did not participate in the other two sample groups completed the scales. In this process, 88 (66.7%) participants were female, and 44 (33.3%) were male. The ages of the participants ranged from 19 to 27 years, with a mean age of 21.40 (SD=1.99). In addition, 35 (26.5%) of the participants were freshmen, 45 (34.1%) were sophomores, 40 (30.3%) were juniors, and 12 (9.1%) were seniors.

### **DATA COLLECTION TOOLS**

The participants completed the instruments, including the Demographic Information Form, the CIPS, the State-Trait Anxiety Inventory, and the Rosenberg Self Esteem Scale.

#### ***DEMOGRAPHIC INFORMATION FORM***

The researchers developed the form and consisted of questions about gender, age, university, and grades.

**CLANCE IMPOSTOR PHENOMENON SCALE (CIPS)**

CIPS consists of 20 self-report items, and each item is scored on a five-point Likert type which is scored from 1 (not at all true) to 5 (very true). Clance reported that the total point of 40 or less indicates few, 41 to 60 indicates moderate, 61 to 80 indicates frequently, and higher than 80 indicates intense impostor experiences. In addition, higher scores indicate greater impostor experiences on the scale. The original scale comprises three dimensions fake, luck, and discount. The internal reliability coefficient of the scale was reported as .72, and the factors explained the 45.2%, 6.6%, and 6.1% of the variance, respectively (Chrisman et al., 1995).

**ROSENBERG SELF-ESTEEM SCALE (RSES)**

The scale is commonly used to measure the self-consideration of people about themselves. The RSES, developed by Rosenberg (1965), has ten items; each is scored on a four-point Likert type. The items are answered on a scale from 1 (strongly agree) to 4 (strongly disagree). Higher scores indicate higher self-esteem on the scale. It was adapted into Turkish by Çuhadaroğlu (1986), and the test-retest correlation coefficient was reported as .75 in the adaptation study. The internal consistency coefficient of the scale was calculated as .72 in this study.

**STATE-TRAIT ANXIETY INVENTORY (STAI)**

Spielberger et al. (1970) developed the STAI with two subscales. The state anxiety dimension measures how respondents feel at that moment, while the trait anxiety dimension indicates how people generally feel anxious aside from current conditions. High scores mean higher anxiety levels. Adaptation of the scale into Turkish was conducted by Öner & Le Compte (1998). Adaptation studies showed that test-retest reliability ranged from .26 to .68. The trait anxiety subscale of the STAI was used in this study. This Likert-type scale consisted of 20 items scored from 1 (not at all) to 4 (very much so). The internal consistency coefficient of the scale was calculated as .84 in this study.

**THE SCALE ADAPTATION PROCESS**

This study's cross-cultural adaptation and validation steps consist of three steps, as it is specified by Hambleton & Bollwark (1991). Firstly, the items are translated into the target language later, the equivalence of items in the original and adapted versions is determined. Lastly, the validity and reliability of the adapted form of CIPS are investigated. The items of the CIPS were translated into Turkish by three experts who are competent in Turkish and English from the educational science department, including Psychological Counseling and Guidance, Assessment and Evaluation in Education Educational Administration departments. In addition, a bilingual expert from English Language Teaching department also translated the items into Turkish. Then two different experts who did not attend the first translation group checked on the compatibility between the English and Turkish versions and decided the best translation of each item. After the revisions, we asked 20 undergraduate students to evaluate each item in clarity. They were also asked to write down what they understood of each item. Some concepts that are understood differently or inadequately have been changed accordingly. Later, a Turkish language researcher reviewed the translated Turkish form and the final form translated to English by two experts from the School of Foreign Language. The authors discussed the translated English items and decided on the best English items. We sent this form to Dr. Clance, and we obtained her approval.

**PROCEDURE**

The Ethical Committee of Anadolu University confirmed the study. The data was collected online. The authors shared the research link with their students and requested them to share the link on their social media groups comprising undergraduate members. When a participant clicked the link, they encountered detailed information about the purpose of the research, accessing conditions of the data, the right of privacy, and withdraw from the study at any time of the process. Then, informed

consent was obtained online from all participants who attended the study. There were no grants for participation.

## DATA ANALYSIS

The current study analyses were conducted using IBM SPSS Statistics 21.0, Lisrel 8.7., and JASP 0.14.1. Initially, 423 university students completed the data tools, the Mahalanobis distance was calculated, and 16 cases were omitted. It was determined that the absolute values of the correlations between the variables ranged from 0.11 to 0.65, and therefore the correlations were lower than the 0.85 (Kline, 2005) criterion for multicollinearity. As a result, it was determined that there was no multicollinearity problem in the data. The skewness values of the items in scale varied between .03 and 1.51, and the kurtosis values between -0.6 and -1.40, indicating that the univariate normality condition was met (Field, 2009).

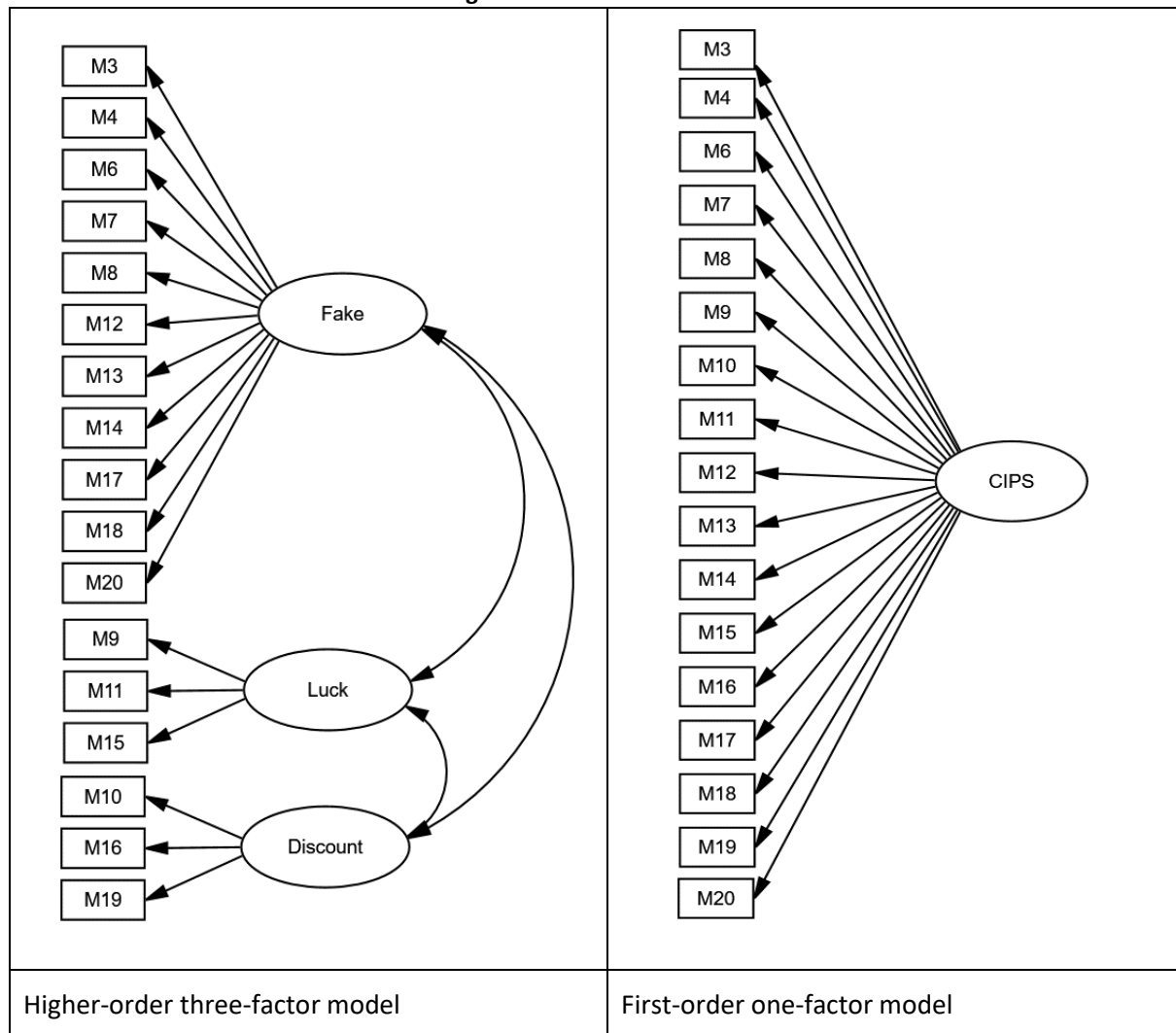
The scale's factor structure was tested with Confirmatory Factor Analysis (CFA). Chi-square/df, Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), GFI (Goodness of Fit Index), Standardized Root Mean Square Residual (SRMR), and Non-Normed Fit Index (NNFI) were used to determine the final model. In this regard, the value of  $\chi^2/df$  smaller than three was accepted as a good fit, and between the values 3 and 5 was an acceptable fit (Kline, 2005). The value of RMSEA smaller than .05 was accepted as a good fit and smaller than .08 as acceptable (Brown, 2006). The values of CFI, GFI, and NNFI higher than .90 were acceptable and higher than .95 was a good fit (Tabachnick & Fidell, 2001). Lastly, the value of SRMR smaller than .05 was accepted good fit, and smaller than .08 was acceptable (Kline, 2005).

The internal consistency coefficient of the scale and the correlations with self-esteem and trait anxiety were also calculated. In this process, additional data was collected (the sample group 3). In order to determine the normality of the distribution, skewness, and kurtosis values were calculated. It was seen that the skewness values were -.28 and .01, and the kurtosis values were -.55 and .27 for self-esteem and anxiety, respectively. These values prove the normal distribution of the variables.

## RESULTS

Item total correlations were calculated, and it was seen that Item 1 and Item 2 had no significant relationships, as Clance (1985) stated. Therefore, these items were excluded from the analysis. CFA was implemented to test the original first-order three-factor model of the 18 items scale. It was seen that item 5 did not have a significant factor loading ( $\beta = -.00$ ;  $p > .001$ ). Therefore, it was decided to exclude this item. The CFA was implemented again, and although the goodness of fit statistics was acceptable (as seen in Table 1), the correlations between the factors were higher than expected values (between Fake and Luck was .91, Fake and Discount was .84, and Luck and Discount were .94). Thus, it was decided not to test the higher-order three-factor model, and then this model was compared with an alternative model, which was the first-order one-factor model, as shown in Figure 1.

Figure 1. Alternative Models



CFA was implemented to test the first-order one-factor model with 17 items. The goodness of fit statistics was seen in Table 1.

Table 1. Fit Indices of the Competing Models

	$\chi^2$	df	$\chi^2/df$	RMSEA	GFI	CFI	NNFI	SRMR
First-order three-factor model	526.74	116	4.54	.093	.87	.94	.93	.062
First-order one-factor model	546.15	119	4.59	.094	.86	.94	.93	.063
With a modification between items 9 and 11	432.14	118	3.66	.081	.89	.95	.95	.058
With a modification between items 6 and 13	378.11	117	3.23	.074	.90	.96	.96	.056

When the modification suggestions were examined, it was seen that the error correlations of items 9 (Sometimes I feel or believe that my success in my life or in my job has been the result of some kind of error) and 11 (At times, I feel my success has been due to some kind of luck) which were very close to each other in meaning, were high. Therefore, it was decided to make an error association for these items, and the CFA was repeated. It was seen that the goodness of fit statistics was satisfactory except for the GFI value. The modification suggestions were examined again, and it was decided to make an error association between Item 6 (I am afraid people important to me may find out that I am not as capable as they think I am) and Item 13 (Sometimes I'm afraid others will discover how much

knowledge or ability I really lack), and the CFA was repeated. As a result of modification indices, the 17 items first-order one-factor scale satisfied the model fit. The means, standard deviations, t values, standardized factor loadings, and R<sup>2</sup> values of the items are presented in Table 2.

**Table 2.** Means, Standard Deviations, T Values, Standardized Factor Loadings, and R<sup>2</sup> Values of the CIPS Items

<i>Item</i>	<i>Mean</i>	<i>Sd</i>	<i>t</i>	<i>Standardized factor loadings</i>	<i>R<sup>2</sup></i>	<i>SE</i>
3	2.38	1.18	10.54	.51	.25	.74
4	2.83	1.28	12.78	.60	.36	.64
6	2.20	1.33	14.37	.66	.39	.57
7	3.13	1.32	11.58	.55	.31	.69
8	2.44	1.11	6.89	.35	.12	.88
9	1.75	1.12	9.02	.44	.20	.80
10	2.44	1.29	9.35	.46	.21	.79
11	1.82	1.09	10.05	.49	.23	.76
12	3.41	1.20	10.92	.53	.28	.72
13	1.89	1.24	16.26	.72	.48	.48
14	2.92	1.27	17.95	.77	.61	.40
15	2.41	1.24	16.26	.72	.52	.48
16	2.41	1.38	7.39	.37	.14	.86
17	2.39	1.30	13.72	.63	.40	.60
18	3.00	1.24	16.69	.73	.55	.46
19	3.29	1.33	8.16	.41	.17	.84
20	2.85	1.26	13.82	.64	.40	.59

In order to examine the convergent validity of CIPS, the relationship between impostor phenomenon and self-esteem was calculated as  $-.74$  ( $p < .00$ ;  $N=132$ ), and between trait anxiety was calculated as  $.74$  ( $p < .00$ ;  $N=132$ ). Additionally, the lower 27% and upper 27% impostor groups were compared to support the scale's validity. According to t-test result, a significant difference between the groups occurred ( $t(200) = -38.03$ ,  $p < .00$ ). Moreover, scale points of the participants were compared according to gender, and it was found that there was a significant difference between women and men ( $t(405) = 3.26$ ,  $p < .01$ ). While the mean score of female participants was 45.08 ( $SD=13.12$ ), male participants' mean score was 40.80 ( $SD=11.96$ ).

Cronbach's alpha, McDonald's omega, and Guttman's lambda coefficients were computed to reveal the internal consistency reliability. The values were  $\alpha = .892$ ,  $\omega = .894$ , and  $\lambda_6 = .904$ , respectively. These values indicated strong coefficients. The split-half reliability coefficient was calculated as  $.83$ . In order to determine the test-retest reliability, the scale was implemented on 56 university students in two weeks intervals. The correlation was calculated as  $.91$  ( $p < .00$ ), which indicated an acceptable value.

## DISCUSSION AND CONCLUSION

This study aimed to test the psychometric properties of CIPS and provide evidence for its validity. As a result of the CFA to test the construct validity of the scale, the items which were insignificant correlations with the total score were excluded, and the 3-factor 17-item model was tested. Since this



model did not fit well and the correlation between factors was high, it was decided to test the single-factor model. After the two modification suggestions were applied, the  $\chi^2/df$  value was close to 3. RMSEA value was smaller than .08. GFI, CFI and NNFI values were higher than .90. and SRMR value was smaller than .010. Therefore, the goodness of fit indices for the scale was within acceptable limits (Hu & Bentler, 1999; Kline, 2005). As a result, it was determined that the 17-item single factor model fits well for university students' study group.

In the literature, the adaptation research of CIPS had inconsistent findings. For example, Brauer & Wolf (2016) stated that the scale had two dimensions in the German adult population; on the other hand, Yaffe (2020b) stated that the scale had four dimensions in Hebrew speaking women. In addition, Simon & Choi (2018) explained that one factor model with correlated residuals best explains the factor structure of the CIPS. Furthermore, French et al. (2008) had reported that the original theoretical model would be problematic. When the previous Turkish adaptation study of the scale was examined, it was reported that the scale was unidimensional (Özdemir, 2015).

In summary, the scale does not seem sensitive enough to distinguish the factors of the construct. These values can be considered why the three-factor structure of the scale could not be confirmed in this study. According to these inconsistent findings, the one-factor 17 items finding of this study seems acceptable.

Within the scope of convergent validity of the CIPS, we benefit from self-esteem and trait anxiety. Because, in the IP literature, it was stated that IP causes anxiety and self-doubt among the undergraduates (Gardner & Holley, 2011; Parkman, 2016). It has been determined that the scale has a negative and high relationship with self-esteem. Additionally, CIPS had a positive and high relationship with trait anxiety. These findings support the unique construct of the CIPS. The previous findings, which revealed the negative relationships between IP and self-esteem (Ghorbanshrodi, 2012), self-efficacy (Felder, 1988), and autonomy (September et al., 2001) are supported the negative aspect of IP. These findings can be interpreted as impostors having negative self-images and feeling anxious because of this situation. Therefore, it seems essential to assess the IP levels of individuals for developing some programs which aim to intervene in negative self-images. In this way, it can be possible to enhance the well-being levels of people. The scale can also distinguish people with a lower and higher level of IP, which supports the construct validity of the scale. In addition, there was a significant difference between the points of female and male. Özdemir (2015) also reported the same finding of gender differences. This finding seems in accordance with Clance and Imes's (1978) explanations about the impostor phenomenon experiences of women.

Large Cronbach's alpha, McDonald's' Omega, and Guttman's lambda coefficients evidenced that scores have small amounts of random error and consistently measure the IP, indicating strong internal consistency. In addition, the test-retest correlation coefficient of the scale also evidenced the reliability. This study reveals that the Turkish form of the CIPS is a valid and reliable scale within college students, and it can be used in studies that aim to assess the self-perceived intellectual fraud of individuals.

#### **LIMITATIONS**

The number of participants in this study is limited; an increased number of respondents may have contributed to the study. The predominantly female formation of the sample limits the applicability and generalizability of the current results. Additional evidence-based research with more diverse participants is required to generalize the findings to larger populations, particularly men. In future research, more demographically gender-balanced and clinical samples can be preferred. Additionally, to measure the three factors of the scale, researchers can carry out scale development studies. Furthermore, the test-retest reliability of the scale was calculated with limited participants in this study. This calculation can be repeated with more participants in future studies.

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### AUTHOR CONTRIBUTION

Ezgi Ekin Şahin has made substantial contributions to conception and design, acquisition of data, analysis and interpretation of data. Fatma Uslu Gülşen has been involved in drafting the manuscript, revising it critically for important intellectual content, have given final approval of the version to be published.

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**APPENDIX**

This scale can be used, provided that researchers cite it as a reference. No additional permission is required.

The scale items (Original in Turkish)

1. Başlamadan önce iyi yapamayacağımdan korktuğum bir testte veya görevde çoğu zaman başarılı olurum.\*
2. Gerçekte olduğumdan daha yetkin olduğum izlenimini verebilirim.\*
3. Mümkünse değerlendirmelerden kaçınırım ve başkalarının beni değerlendirmesinden korkarım.
4. Başardığım bir şey için insanlar beni takdir ettiğinde, gelecekte onların benimle ilgili beklentilerini karşılayamayacağımdan korkarım.
5. Bazen şu anki konumumu veya mevcut başarıyı doğru zamanda doğru yerde olduğum ya da doğru insanları tanıdığım için elde ettiğimi düşünürüm.\*
6. Benim için önemli olan insanların, sandıkları kadar yetenekli olmadığımı öğrenmelerinden korkarım.
7. Elimden gelenin en iyisini yaptığım zamanlardan daha çok elimden gelenin en iyisini yapmadığım olayları hatırlama eğilimindeyim.
8. Bir projeyi veya görevi, yapmak istediğim şekilde nadiren yapıyorum.
9. Bazen hayatımdaki veya işimdeki başarımın bir tür hata sonucu olarak gerçekleştiğini hissediyorum ya da buna inanıyorum.
10. Zekâm ya da başarılarım hakkındaki iltifat ya da övgüleri kabul etmek benim için zordur.
11. Zaman zaman başarımın bir tür şans eseri olduğunu hissediyorum.
12. Mevcut başarılarım hakkında zaman zaman hayal kırıklığı hissederim ve daha fazlasını başarmış olmam gerektiğini düşünürüm.
13. Bazen başkalarının gerçekte benim ne kadar bilgisiz ya da beceriksiz olduğumu keşfedeceğinden korkuyorum.
14. Başladığım bir işi genel olarak iyi yapsam da, yeni bir görevlendirmede ya da sorumlulukta başarısız olmaktan çoğunlukla korkarım.
15. Bir şeyi başardığımda ve başarılarım için takdir edildiğimde, bu başarıyı tekrarlayabileceğime dair şüphelerim olur.
16. Başardığım bir şey için çok fazla övgü ve takdir görürsem, yaptığım şeyin önemini küçümseme eğiliminde olurum.
17. Yeteneklerimi sık sık çevremdekilerle kıyaslar ve onların benden daha zeki olabileceklerini düşünürüm.
18. Bir projede ya da sınavda, her ne kadar çevremdeki insanlar benim başarılı olacağım konusunda bana ciddi bir güven duysa da, ben genellikle başarılı olamayacağımdan endişelenirim.
19. Bir terfi alacak ya da bir tür takdir elde edeceksem, bu gerçekleşene kadar başkalarına söylemekten çekinirim.
20. Başarı gerektiren durumlarda "en iyi" ya da en azından "çok özel" değilsem kendimi kötü hissederim ve cesaretim kırılır.

\*Excluded items.