

[Open Peer Review on Qeios](#)

## RESEARCH ARTICLE

# A Scale to Measure Social Media Jealousy

S. Rama Gokula Krishnan<sup>1</sup>, Vellaiah Sethuramalingam<sup>2</sup>, S. Chandni<sup>2</sup><sup>1</sup> Social Work, St. Joseph's College of Bangalore, Bengaluru, India<sup>2</sup> Bharathidasan University, Tiruchirappalli, India**Funding:** No specific funding was received for this work.**Potential competing interests:** No potential competing interests to declare.

## Abstract

As social media continues to grow rapidly throughout the world, researchers and mental health professionals have been keenly observing and recording some of its detrimental effects on the mental and emotional health of its users. In this regard, one of the constructs that has been gaining interest is social media jealousy. However, there is a paucity of standardised tools that accurately measure this construct. To fill this gap, the present research was undertaken as a part of a larger study examining the possible negative effects of social media. The present research has resulted in the development of the 15-item Social Media Jealousy Scale (SMJS-15). It is a single-dimensional scale that has shown strong reliability, convergent validity, as well as evidence of construct validity. The scale has been developed using both exploratory and confirmatory factor analyses and can be used to test social media jealousy experienced by users across multiple social media platforms.

**Dr. S. Rama Gokula Krishnan<sup>1,a</sup>, Dr. V. Sethuramalingam<sup>2,b</sup>, and S. Chandni<sup>3</sup>**<sup>1</sup> Faculty, School of Social Work, St. Joseph's University, Bengaluru, India<sup>2</sup> Professor (Rtd.), Department of Social Work, Bharathidasan University, Tiruchirappalli, India<sup>3</sup> PhD Scholar, Department of Social Work, Bharathidasan University, Tiruchirappalli, India<sup>a</sup> ORCID iD: [0000-0002-6914-530X](https://orcid.org/0000-0002-6914-530X)<sup>b</sup> ORCID iD: [0000-0001-8826-7655](https://orcid.org/0000-0001-8826-7655)**Keywords:** Social Media Jealousy Scale, SMJS-15, Social Media, Jealousy, Exploratory Factor Analysis, Confirmatory Factor Analysis, Scale.

## 1. Introduction

Jealousy, often described as the green-eyed monster<sup>[1]</sup>, has been widely researched in recent years<sup>[2][3]</sup>. Interestingly, the

term that originated from the Old French term '*Jalos*', was once used positively to refer to one's zeal or desire<sup>[4]</sup>. Today, the term is most commonly viewed as a negative emotion that in its most excessive forms can be detrimental to one's mental wellbeing<sup>[5]</sup>. Currently, jealousy is defined as unpleasant emotions possessed by an individual who views another as better off than oneself<sup>[6]</sup>. There are several perspectives on the purpose of jealousy, and one such perspective is that the chief objective of jealousy is to prevent others from usurping one's important relationships<sup>[7]</sup>. It is important to note that jealousy does not always require a rival and can be induced through an anticipation of a rival or even an imaginary one<sup>[7]</sup>. This is precisely why jealousy is not only relevant but a very commonly measured construct in the context of social media, where the potential rival is not only far away but might even be fictitious<sup>[8]</sup>. As a result, over the years, several studies have been carried out on the presence of jealousy experienced by users of social media platforms such as Facebook<sup>[9]</sup>, Instagram<sup>[10]</sup>, and even Snapchat<sup>[11]</sup>. Most such studies have revealed the critical role of social media in inducing jealousy among the respondents, who are usually adolescents or young adults. Why is social media jealousy a problem? It's primarily because of some of the effects that have a detrimental impact on the mental health of the users and its long-term negative impact on the psychology of society<sup>[12]</sup>. Some of the common symptoms of social media jealousy, as recorded in the existing literature, include lower quality of friendship combined with internalising problems<sup>[13]</sup>, electronic intrusion wherein an individual spies on their partner's online activities<sup>[14]</sup>, and intimate partner violence among romantic partners<sup>[15]</sup>. Although the existing literature does indicate that researchers in the past have attempted to understand social media jealousy qualitatively<sup>[16]</sup>, through scales that measure jealousy in the context of only one particular social media platform such as Facebook<sup>[17]</sup>, or through scales that have been primarily developed using a western sample<sup>[18]</sup>, it is apparent that there is a need to develop a robust tool to measure this phenomenon called social media jealousy that can not only measure jealousy irrespective of the type of social media platform but is also worded in such a manner that it can be understood by anyone with a basic understanding of the English language. In order to fill this existing need, the present research was undertaken as part of a larger study.

## 2. A Review of Existing Tools

As mentioned in the previous section, over the recent years, researchers have not only attempted to study the presence of jealousy stemming from social media use<sup>[19]</sup> but have also attempted to measure it objectively using certain scales. The Facebook Jealousy Scale is one such tool<sup>[20]</sup> that has 27 items measured on a seven-point Likert scale and was developed using Exploratory Factor Analysis, a statistical method to understand the underlying relationship between variables that one would like to measure, and which is often used to develop psychometric scales to measure constructs<sup>[21]</sup>. This particular scale has been widely used since its inception by other researchers<sup>[22][23][9]</sup>. However, one of the major limitations of this scale is that it is primarily limited to measuring jealousy in the context of Facebook, a social media platform that has grown popular over the years but is not as popular among the younger generation as some of the other platforms such as Instagram and Snapchat<sup>[24]</sup>.

Another tool that addresses this gap is the Digital Jealousy Scale, a recently developed nine-item scale<sup>[18]</sup> that measures social media-induced jealousy and has been developed using three samples from Germany and the United Kingdom<sup>[18]</sup>.

The samples included individuals from a diverse group (aged 16 - 62 years) and are primarily of Western origin. Social media, however, is a worldwide phenomenon, with an increasing number of users from developing countries such as India, where there has been a steady growth in the number of internet users<sup>[25]</sup>. In such a scenario, there is a need for a scale that is also applicable to the developing world, where English is not the native language of the people and where some phenomena that are culture-specific to the West are not applicable to these regions of the world.

### 3. Theoretical Background

The researchers have used the Dynamic Functional Model of jealousy developed by Chung and Harris<sup>[7]</sup> as the theoretical base for developing the scale. According to this model, the purpose of jealousy is to prevent others from usurping important relationships<sup>[7]</sup>. With the rapid expansion of social media and the increase in the number of hours spent, users begin to increasingly value their online relationships/followers and view others who gain more attention than themselves as competitors who might usurp the attention that they are currently receiving from their online friends/followers. This model was influential in establishing the initial items of the scale.

### 4. Methodology

The objective of the present research is to develop a valid and highly reliable tool to measure social media jealousy that can be used worldwide. The present research is part of a larger study aimed at understanding the effects of social media use on the mental health of female post-graduate students studying at a University in India. The goal is to develop a scale that anyone who uses social media can understand and that is applicable to a wide range of social media sites, keeping in mind the possibility of future social media platforms with similar features. Keeping these in mind, the methodology of the present research was adopted.

#### 4.1. Selection of Respondents

The present study included a sample of 277 female respondents pursuing their post-graduate degree at a University in the State of Tamil Nadu, India. The respondents were selected using simple random sampling through the random number table<sup>[26]</sup>. It is important to note that the sample constitutes 31 percent of the total population. The mean age of the respondents was 21.1 years. Furthermore, in order to select the respondents, inclusion and exclusion criteria were adopted.

#### 4.2. Inclusion and Exclusion Criteria

Only post-graduate female students who were staying in the university hostels were included in the study. Students who were studying in the first and second year of a five-year integrated master's degree at the university were excluded from the study. Additionally, the students who took part in the study were required to be using at least one social media platform.

### 4.3. Ethical Consideration

Informed consent was obtained from the respondents who were willing to be a part of the study. Moreover, the doctoral committee granted the required approval for carrying out the present study. None of the questions or items required the respondents to expose their personal identity or other details such as phone numbers. Thus, the anonymity of the respondents was ensured. The collected data were stored securely in a password-protected computer.

### 4.4. Tools of Data Collection

Data were collected using a questionnaire that included questions relating to the basic details of the respondents as well as items that would eventually be a part of the Social Media Jealousy Scale (SMJS-15).

### 4.5. Operational Definition of Social Media Jealousy

In the present research, social media jealousy refers to a negative emotion experienced by social media users, which is marked by social media comparisons with others, striving to outdo them, and resorting to harmful thoughts, words, and acts to undermine them.

### 4.6. Analysis of Data

The collected data were entered and analysed using SPSS AMOS<sup>[27]</sup>.

### 4.7. Instrument Development

The Social Media Jealousy Scale (SMJS-15) was developed through three phases to ensure a scientific and logical development process.

#### 4.7.1. *Phase One*

In the first phase, the initial items of the scale were identified using a two-step process. The first step involved examining existing literature on the concept of jealousy and its classic symptoms. Apart from the symptoms, the operational definitions used in previous studies and the Dynamic Functional Model of jealousy<sup>[7]</sup> were also examined. This was followed by the second step, which involved a consultation with some of the potential respondents who provided input on what evoked jealousy while using social media. These two steps led to the emergence of the initial 25 items aimed at measuring social media jealousy.

#### 4.7.2. *Phase Two*

The second phase involved a pre-test with the initial 25 items being tested using ten respondents who met the inclusion

criteria. The respondents were also asked to rate how difficult each of the items was to understand on a 1-5 rating scale, with 1 being very easy and 5 being very difficult/confusing. Items that received a difficulty score of 30 or more out of a total score of 50 were noted as difficult/confusing. After the collection of data and based on the feedback from the respondents, six items that were rated as difficult (score of 30 or more on difficulty) were removed due to the respondents' difficulty in understanding the meaning of the items. This left the researchers with 19 items rated on a 5-point Likert Scale ranging from 1 = strongly disagree to 5 = strongly agree.

#### 4.7.3. Phase Three

In the third phase, the 19 items were critically examined by six experts, and the Content Validity Index was calculated. The researchers used the Content Validity Index value to determine the content validity of the scale/items. The items were evaluated by the six experts on a scale of 1-4, with a rating of 3 or 4 being rated as acceptable (scored as 1 on the sheet) and a rating of 1 or 2 being rated as not acceptable (scored as 0 on the sheet). The experts unanimously accepted 14 of the 19 items as being associated with jealousy in the context of social media. However, the experts unanimously rejected three items as being non-relevant. While one item was accepted by only one expert, another item was accepted by five of the six experts, meaning only one rejected it. Thus, the average of the Content Validity Index was calculated, and it revealed a value of 0.79, which is very close to but not above the acceptable threshold of 0.80<sup>[28]</sup>. The average Content Validity Index is the sum of the Content Validity Index of each item divided by the number of items<sup>[29]</sup>. This result led the researchers to remove the three items which were unanimously rejected by the experts. The researchers also removed the item which was accepted by only one expert and rejected by all the others. This resulted in a 15-item scale that had an average Content Validity Index of 0.98. Thus, content validity was established, and the final 15-item tool was distributed among the selected respondents as a questionnaire. Initially, based on an overview of the items, the researchers assumed that the scale had three factors, but later, after the factor analyses, it was discovered that the scale was uni-dimensional in nature.

## 5. Results

The researchers carried out both confirmatory and exploratory factor analyses to develop the scale. Furthermore, Cronbach's Alpha value, which is used to test the reliability of a tool, particularly the internal consistency, was also examined<sup>[30]</sup>.

### 5.1. Item Analysis

**Table 1.** Descriptive Statistics, Item-Total Correlation, and Alpha Value of the Tool

Items/ Variables	Mean	SD.	Skewness	Kurtosis	$r^c$ i-t	( $\alpha$ -i)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
J1	3.28	.962	-.287	-.154	.803	.978
J2	3.19	1.018	-.632	-.428	.843	.977
J3	3.06	.940	-.334	-.103	.835	.977
J4	3.09	.955	-.441	-.287	.829	.977
J5	2.97	.880	-.361	.085	.834	.977
J6	3.06	1.002	-.269	-.073	.867	.977
J7	3.25	1.039	-.690	-.609	.866	.977
J8	3.10	1.056	-.471	-.480	.895	.976
J9	3.11	1.006	-.441	-.589	.852	.977
J10	3.10	1.050	-.537	-.487	.893	.976
J11	3.06	1.063	-.141	-.339	.895	.976
J12	3.05	.977	-.407	-.571	.789	.978
J13	3.06	1.083	-.312	-.462	.896	.976
J14	3.02	.998	-.279	-.510	.902	.976
J15	3.07	1.010	-.414	-.448	.858	.977
Cronbach's Alpha value:						0.978

**Note:**  $r^c$  i-t – Corrected item-total correlations. ( $\alpha$ -i) – Cronbach's alpha if items are deleted. N= 277

Table 1 shows the mean, standard deviation, skewness, kurtosis, item correlation, and Cronbach's Alpha value for each of the 15 items in the scale. While item number 1, which is about comparing other people's profiles or display pictures, was found to be the most influential item with a mean value of 3.28, item number five, about comparing other people's lifestyles, was found to be the least influential item with a mean score of 2.97. On the whole, the overall Cronbach alpha value of all 15 items was found to be 0.978, which is considered to be excellent with high internal consistency<sup>[30]</sup>. The skewness as well as the kurtosis values were also well within the acceptable range<sup>[31]</sup>. Hence, the tool is highly reliable and has strong internal consistency for collecting data among the sample respondents.

## 5.2. Exploratory Factor Analysis

Exploratory factor analysis, which is one of the statistical methods used to develop scales<sup>[32]</sup>, was employed by the researchers. It helps in identifying factors based on correlations.

### 5.2.1. Kaiser Meyer Olkin and Bartlett's Tests

Additionally, the researchers carried out the Kaiser Meyer Olkin (KMO) and Bartlett's Test. The KMO test, a test of sampling adequacy, indicates partial correlations between the items in the tool, and a value above 0.5 and closer to 1 is considered sufficient to carry out factor analysis<sup>[33][34][35]</sup>. Furthermore, as mentioned previously, the researchers also

conducted Bartlett's Test of Sphericity, which is a statistical test used to test whether the correlation matrix is not an identity matrix<sup>[36][37][34]</sup>. The results of the Bartlett's Test also prove this ( $p < 0.001$ ). The results of both tests can be viewed in Table 2, and they indicate that the sample size is adequate for the analysis<sup>[38][36][39]</sup>.

<b>Kaiser-Meyer-Olkin Measure of Sampling Adequacy</b>	0.971
<b>Bartlett's Test of Sphericity Approx. Chi-Square</b>	5051.316
<b>df</b>	105
<b>Sig.</b>	0.000

### 5.2.2. Total Variance Explained

Table 3 shows the total variance explained, which is an output derived as part of the Principal Component Analysis. The results in this table indicate that about 76.9 percent of the variance is shared by the 15 items in the scale, which in turn is accounted for by one factor. This indicates that the scale is one-dimensional and that factor analysis is helpful for the variables<sup>[40][35]</sup>.

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	11.535	76.899	76.899	11.535	76.899	76.899
2	.494	3.296	80.194			
3	.419	2.794	82.988			
4	.370	2.466	85.455			
5	.332	2.211	87.665			
6	.282	1.878	89.543			
7	.263	1.755	91.298			
8	.236	1.574	92.872			
9	.215	1.436	94.307			
10	.188	1.256	95.563			
11	.180	1.200	96.763			
12	.148	.988	97.751			
13	.136	.905	98.656			
14	.111	.737	99.393			
15	.091	.607	100.000			

**Extraction Method: Principal Component Analysis.**

### 5.2.3. Communalities

Communality refers to the total squared loadings on a factor matrix for an item in the scale. It highlights the proportion of variance for that item which is explained by the factors. A higher value indicates a higher extent of variance explained by the extracted factors<sup>[41]</sup>. Generally, the cut-off for communality values is between 0.25 and 0.4, with ideal communalities being 0.7 or above in the "extraction" column to be considered for further analysis<sup>[42][43][44][37][45][46][47]</sup>. When the sample size exceeds 250, the average cut-off for communality is 0.6<sup>[37]</sup>. In the present study, all the items (in Col. 3 of Table 4) have a value that exceeds 0.6, and the average, which is calculated by adding the values of all the items and then dividing them by the number of items, was found to be 0.769 (11.535/15). So, on both grounds, Kaiser's rule may be accurate.

**Table 4.** Communalities and Factor loadings

Communalities			Component Matrix	
Items/Variables	Initial	Extraction	Items/Variables	Factor Loadings
(1)	(2)	(3)	(4)	1*
(1)	(2)	(3)	(4)	(5)
J1	1.000	.685	J14	<b>.916</b>
J2	1.000	.746	J13	.911
J3	1.000	.734	J11	.910
J4	1.000	.724	J8	.910
J5	1.000	.733	J10	.909
J6	1.000	.785	J6	.886
J7	1.000	.782	J7	.884
J8	1.000	.829	J15	.877
J9	1.000	.760	J9	.872
J10	1.000	.826	J2	.863
J11	1.000	.829	J3	.857
J12	1.000	.663	J5	.856
J13	1.000	.830	J4	.851
J14	1.000	.840	J1	.828
J15	1.000	.769	J12	<b>.815</b>
Extraction Method: PCA			Extraction Method: PCA * 1 component extracted.	

The factor loadings can be viewed in Table 4.

#### 5.2.4. Component Matrix or Factor Matrix and Convergent Validity

Convergent validity indicates a powerful correlation between items within a single factor. Generally, a factor loading of 0.4<sup>[48]</sup> or exceeding 0.5 on average and reaching above 0.700 for each factor<sup>[49][50]</sup> is acceptable. In the present study (Column 5 of Table 4), the item with the lowest factor loading is item 12 with a factor loading of 0.815, which is well above



the minimum requirement<sup>[51]</sup>. Column 5 of Table 4 not only indicates the factor loadings but also reveals the inter-variable correlations. Furthermore, all the loadings are also statistically significant. Thus, the convergent validity of the scale has been established.

### 5.3. Confirmatory Factor Analysis and Path Analysis

Generally, while carrying out confirmatory factor analysis, it is necessary to establish both convergent and discriminant validity apart from reliability<sup>[52][53]</sup>. However, since the present scale is one-dimensional in nature, discriminant validity is not necessary<sup>[54]</sup>. Therefore, the researchers used confirmatory factor analysis and path analysis to establish both construct and convergent validity.

#### 5.3.1. *Convergent Validity*

Convergent validity can be established by viewing the factor loadings<sup>[55][51]</sup>, and factor loadings that are higher than the cut-off value of 0.5 are considered proof of convergent validity<sup>[33][37][56]</sup>.

**Table 5.** Unstandardised (b) and Standardised ( $\beta$ ) Regression Weights

Items			b	S.E.	C.R./t	p	$\beta$
1			2	3	4	5	6
J 15	<---	Jealousy	1.000	-	-	-	.864
J 14	<---	Jealousy	1.043	.047	22.269	p<0.001	<b>.912</b>
J 13	<---	Jealousy	1.120	.039	29.071	p<0.001	.902
J 12	<---	Jealousy	.883	.052	16.879	p<0.001	<b>.789</b>
J 11	<---	Jealousy	1.105	.050	22.003	p<0.001	.907
J 10	<---	Jealousy	1.090	.050	21.918	p<0.001	.905
J 09	<---	Jealousy	.984	.051	19.408	p<0.001	.853
J 08	<---	Jealousy	1.099	.050	22.053	p<0.001	.908
J 07	<---	Jealousy	1.034	.051	20.196	p<0.001	.871
J 06	<---	Jealousy	1.017	.049	20.925	p<0.001	.886
J 05	<---	Jealousy	.854	.045	19.128	p<0.001	.846
J 04	<---	Jealousy	.917	.049	18.786	p<0.001	.838
J 03	<---	Jealousy	.911	.048	19.111	p<0.001	.846
J 02	<---	Jealousy	.989	.052	19.158	p<0.001	.847
J 01	<---	Jealousy	.898	.050	17.827	p<0.001	.814

**Note:**  $\beta > 0.8$  - significant influence,  $\beta 0.8 > \beta > 0.5$  - moderate influence,  $\beta < 0.2$  - small influence.

As observed in Table 5 (Table 4), the lowest value is 0.789 and the highest is 0.912, thus proving convergent validity. There are also other approaches to checking for convergent validity. One of these includes examining the Critical Ratio (CR/t in Col.4) value, which must be above 1.96 to establish convergent validity<sup>[57]</sup>. In the present study (as seen in Table 5 (Table 4), the CR/t values are well above 1.96, which is another proof of convergent validity.

### 5.3.2. Construct Validity

Table 5 also shows the regression weights as well as the CR/t values for all the items in the scale. Column 5 indicates that the CR/t values are statistically significant at a high level (p<0.001). Hence, it can be stated that all the items in the scale satisfy the criteria for test construct validity<sup>[58]</sup>.

Furthermore, the Standardized Regression Weights ( $\beta$ ) in Column 6 of Table 5 reveal that all 15 items exhibit values exceeding 0.8 (ranging from 0.789 to 0.912). These loadings signify a statistically significant influence and therefore fulfill the requirements of construct validity, indicating that the scale indeed measures the intended construct effectively<sup>[58]</sup>. These outcomes highlight that the validity criterion possesses substantial strength, affirming the instrument's validity and suitability for conducting the study.

### 5.3.3. Construct Validity Using Model Fit Measures

It may be noted that Confirmatory Factor Analysis was carried out to establish construct validity, and it was found to be a good fit for the model. This can be viewed through Figure 1. It may be noted that the minimum loading was 0.79 while the maximum was 0.91, and as seen in Figure 1, the one-dimensional model proved to be an adequate fit.

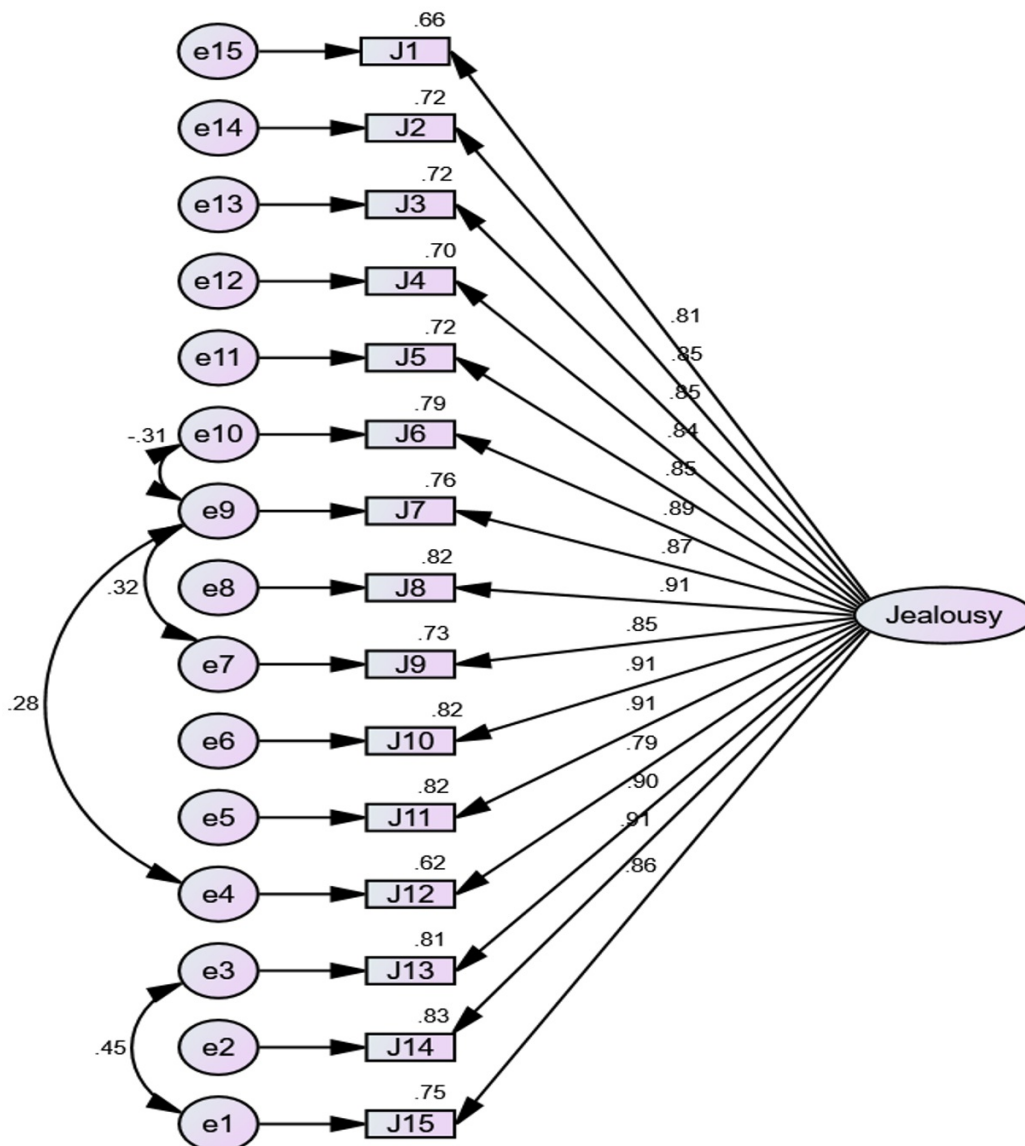


Figure 1. Path Diagram- Social Media Jealousy

**Table 6.** Construct Validity and Indices of Goodness of Fit

Measure	Estimate	Threshold (Cut-off Criteria)	Interpretation
CMIN( $\chi^2$ )	188.551	--	--
df	86	--	--
CMIN/df	2.192	Between 1 and 3	Excellent
CFI	0.980	>0.95	Excellent
GFI	0.921	>0.90	Excellent*
AGFI	0.889	>0.08	Good Fit
SRMR	0.020	<0.08	Excellent
RMSEA	0.066	<0.08	Acceptable**
P Close	0.022	> 0.02 to < 0.05	Acceptable
NFI	0.963	$\geq 0.9$	Good Fit

\* Hu & Bentler<sup>[59]</sup>, \*\* Bentler, 1994; \*\*\* Byrne & Campbell<sup>[60]</sup>.

Fit indices: CMIN- Chi-square, df- degree of freedom, CMIN/df - Chi-square divided by degrees of freedom, CFI- Comparative Fit Index, GFI-Goodness-of-Fit Index, AGFI-Adjusted Goodness-of-Fit Index, SRMR-Standardized Root Mean Square Residual, RMSEA -Root Mean Square Error of Approximation, NFI-Normed Fit Index, P Close- Probability of close fit.

The Chi-square Test for Goodness of Fit is used as an absolute fit index, with a low chi-square value relative to the degrees of freedom (and higher p-value) indicating better model fit<sup>[61]</sup>. As observed in Table 6, the CMIN or the  $\chi^2 = 188.551$ ,  $df = 86$ , and the  $p = 0.000$  indicate that the chi-square is statistically significant at a very high level. Hair et al.<sup>[49]</sup> reported that the  $\chi^2$  value must be non-significant; however, significant p values are expected when the sample size is more than 250. In the present study, the sample has 277 respondents. CMIN/df is expected to be in the range of 1-3 and is 2.192 in the present study. Moreover, the other values, namely, the Comparative Fit Index (0.980), the Standardised Root Mean Square Residual (0.020), the Goodness of Fit Index (0.921), the Adjusted Goodness-of-Fit Index (0.889), the Normalised Fit Index (0.963), the Root Mean Square Error of Approximation (0.066), and P close (0.022), are all in the acceptable range, and the construct validity was found to be a good fit<sup>[59][62]</sup>.

#### 5.3.4. Reliability and Validity Using Confirmatory Factor Analysis

Table 7 shows the Cronbach Alpha value, the Composite Reliability Value (CR), the Average Variance Explained (AVE), the Maximum Shared Variance (MSV), and the Maximum H Reliability (MaxR(H)).

**Table 7.** Reliability and Validity Measures using CFA

	$\alpha$	CR	AVE	MSV*	MaxR(H)	Latent/Jealousy
Jealousy	<b>0.978</b>	0.978	0.751	--	0.980	<b>0.867</b>

**Note:** *Validity Concerns: No validity concerns here. \*As there is only one latent variable, there is no Correlation Matrix or MSV.  $\alpha$  - Cronbach's alpha, C.R.- Composite Reliability, AVE - Average Variance Extracted, MSV - Maximum Shared Variance. MaxR(H) = Maximum H Reliability.*

It is noted that when the CR value is 0.7 or higher<sup>[63]</sup> (In this case, it is 0.978), the AVE must be equal to or higher than 0.5<sup>[62][64][65]</sup>. In the present study, the AVE value is 0.751. Moreover, the MaxR(H) (0.980) is higher than the CR (0.978) for the latent variable, which ensures divergent validity.

## 6. Discussion and Conclusion

As mentioned in the previous sections, the present research was part of a larger study that examined the possible detrimental effects of social media on the mental health of its users. This larger study not only involved the social media jealousy scale but also other constructs such as social media addiction, narcissism, and happiness. While a self-developed scale was used to measure social media addiction, the Hypersensitive Narcissism Scale was used to measure narcissism<sup>[66]</sup>, and the Subjective Happiness Scale<sup>[67]</sup> was used to measure the happiness levels of the respondents. A Pearson's Correlation analysis revealed that social media jealousy, measured using the SMJS-15, was positively correlated with narcissism ( $r = 0.347$ ;  $p < 0.001$ ) and social media addiction ( $r = 0.700$ ;  $p < 0.001$ ). Moreover, it was negatively correlated with the happiness of the respondents ( $r = -0.363$ ;  $p < 0.001$ ). These findings indicate the negative impact of social media jealousy on individuals. Further research on the association between social media jealousy and other psychological constructs is warranted. Thus, to conclude, the present research has led the researchers to develop a 15-item Social Media Jealousy Scale (SMJS-15) (See Table 8) that has shown strong reliability, convergent validity, as well as evidence of construct validity. The present scale has also been tested to ensure that it is easy to understand and applicable to multiple social media sites. With the rapid expansion of social media and increasing accessibility to smartphones, the problem of social media jealousy is also likely to become more observable. In this regard, it is hoped that this scale will be useful for researchers interested in this area of research.

**Table 8.** Social Media Jealousy Scale (SMJS-15)

**Social Media Jealousy Scale (SMJS-15)**

Please respond to the following statements truthfully.

1-Strongly Disagree  
 2- Disagree  
 3- Neither Agree nor Disagree  
 4- Agree  
 5- Strongly Agree.

Item	Statements	Response				
		1	2	3	4	5
J1	On social media, I frequently compare my profile/D.P. to that of others.					
J2	I frequently compare the amount of attention my images receive on social media with that of others.					
J3	I frequently compare my social media friend/follower count to that of others.					
J4	I often compare how much attention my status or message receives to that of others.					
J5	When I compare other people's social media lifestyles to mine, I feel jealous.					
J6	Whenever someone I know on social media uploads a new profile/D.P., I feel like uploading a better profile picture for myself.					
J7	Whenever someone I know on social media gets more attention than me for their photos, I feel like uploading better photos than them.					
J8	When someone I know on social media has more friends or contacts than me, I feel like increasing the number of friends or contacts I have.					
J9	When someone I know posts an interesting status or message on social media, I feel like posting a better status or message than them.					
J10	When I come to know that someone I know on social media is living a more luxurious life than me, I feel like spending money on even more luxurious items and showing them off on social media.					
J11	When someone I know uploads a good profile picture/DP I feel like posting a funny or irritating comment.					
J12	When someone I know on social media posts good photos, I feel like posting a funny or irritating comment.					
J13	When I see someone I know is getting much attention for their post or message, I make fun of them for being popular on social media.					
J14	When someone I know posts an interesting status or message on social media, I post a negative comment.					
J15	When someone I know on social media discloses their luxurious lifestyle, I make a negative comment to make them feel guilty for showing off.					

**Scoring**

Compute the total social media jealousy score by summing all the responses. Higher scores indicate a higher level of social media jealousy. The minimum and maximum scores are 15 and 75, respectively. (D.P. stands for Display Picture)

**Note:** The scale has shown strong reliability, convergent validity, as well as evidence of construct validity.

**Statements and Declarations**

**Competing interests**

The researchers have no competing interests to declare.

## Funding

The researchers did not receive any funding for carrying out the present research.

## Acknowledgments

The researchers would like to thank all the respondents who took part in this research. Thank you.

## References

- <sup>^</sup> Jesus S, Costa AR, Almeida M, Garrido P (2023). "The Green-Eyed Monster: A Brief Exploration of the Jealousy Spectrum". *European Psychiatry*. 66(S1): S1002–S1002. doi:10.1192/j.eurpsy.2023.2128.
- <sup>^</sup> Balzarini RN, McDonald JN, Kohut T, Lehmilller JJ, Holmes BM, Harman JJ (2021). "Compersion: When Jealousy-Inducing Situations Don't (Just) Induce Jealousy." *Archives of Sexual Behavior*. 50(4): 1311–1324. doi:10.1007/s10508-020-01853-1.
- <sup>^</sup> Steis N, Oddo-Sommerfeld S, Echterhoff G, Thiel A, Thiel J, Briem K, Ciaramidaro A, Freitag CM, Mecklinger A, Unterhorst K, Stirn A. (2021). "The obsessions of the green-eyed monster: Jealousy and the female brain". *Sexual and Relationship Therapy*. 36(1): 91–105. doi:10.1080/14681994.2019.1615047
- <sup>^</sup> Online Etymology Dictionary. (2024). Jealous | Etymology of jealous by etymonline. <https://www.etymonline.com/word/jealous>.
- <sup>^</sup> Lennarz HK, Lichtwarck-Aschoff A, Finkenauer C, Granic I (2017). "Jealousy in adolescents' daily lives: How does it relate to interpersonal context and well-being?". *Journal of Adolescence*. 54: 18–31. doi:10.1016/j.adolescence.2016.09.008.
- <sup>^</sup> Protasi S (2017). "'I'm not envious, I'm just jealous!': On the Difference Between Envy and Jealousy". *Journal of the American Philosophical Association*. 3(3): 316–333. doi:10.1017/apa.2017.18.
- <sup>a, b, c, d, e</sup> Chung M, Harris CR (2018). "Jealousy as a Specific Emotion: The Dynamic Functional Model." *Emotion Review*. 10(4): 272–287. doi:10.1177/1754073918795257.
- <sup>^</sup> Awan MJ, Khan MA, Ansari ZK, Yasin A, Shehzad HMF (2022). "Fake profile recognition using big data analytics in social media platforms." *International Journal of Computer Applications in Technology*. 68(3): 215–222. doi:10.1504/IJCAT.2022.124942.
- <sup>a, b</sup> Demirtaş-Madran HA (2018). "Relationship among Facebook jealousy, aggression, and personal and relationship variables." *Behaviour & Information Technology*. 37(5): 462–472. doi:10.1080/0144929X.2018.1451919.
- <sup>^</sup> Quiroz SI, Ha T, Anderson SF (2024). "'You liked that Instagram post?!' Adolescents' jealousy and digital dating abuse behaviors in reaction to digital romantic relationship threats". *Computers in Human Behavior*. 153: 108111. doi:10.1016/j.chb.2023.108111.
- <sup>^</sup> Utz S, Muscanell N, Khalid C. (2015). "Snapchat Elicits More Jealousy than Facebook: A Comparison of Snapchat and Facebook Use". *Cyberpsychology, Behavior, and Social Networking*. 18(3): 141–146. doi:10.1089/cyber.2014.0479

12. <sup>^</sup>Mujcic R, Oswald AJ (2018). "Is envy harmful to a society's psychological health and wellbeing? A longitudinal study of 18,000 adults". *Social Science & Medicine*. 198: 103–111. doi:10.1016/j.socscimed.2017.12.030.
13. <sup>^</sup>Vaillancourt T, Brittain H, Eriksson M, Krygsman A, Farrell AH, Davis AC, Volk AA, Arnocky S. (2024). "Social Media Friendship Jealousy". *Evolutionary Psychology*. 22(1): 14747049231225738. doi:10.1177/14747049231225738
14. <sup>^</sup>Ligman K, Rodriguez LM, Rocek G (2021). "Jealousy and Electronic Intrusion Mediated by Relationship Uncertainty in Married and Cohabiting Couples During COVID-19". *Cyberpsychology, Behavior, and Social Networking*. 24(7): 444–449. doi:10.1089/cyber.2020.0669.
15. <sup>^</sup>Emond M, Vaillancourt-Morel MP, Métellus S, Brassard A, Daspe MÈ (2023). "Social media jealousy and intimate partner violence in young adults' romantic relationships: A longitudinal study." *Telematics and Informatics*. 79: 101956. doi:10.1016/j.tele.2023.101956.
16. <sup>^</sup>Frampton JR, Fox J (2018). "Social Media's Role in Romantic Partners' Retroactive Jealousy: Social Comparison, Uncertainty, and Information Seeking." *Social Media + Society*. 4(3): 2056305118800317. doi:10.1177/2056305118800317.
17. <sup>^</sup>Daspe MÈ, Vaillancourt-Morel MP, Lussier Y, Sabourin S (2018). "Facebook Use, Facebook Jealousy, and Intimate Partner Violence Perpetration." *Cyberpsychology, Behavior, and Social Networking*. 21(9): 549–555. doi:10.1089/cyber.2018.0159.
18. <sup>a, b, c</sup>Gubler DA, Schlegel K, Richter M, Kapanci T, Troche SJ (2023). "The Green-Eyed Monster in Social Media – Development and Validation of a Digital Jealousy Scale". *Psychological Test Adaptation and Development*. 4(1): 13–27. doi:10.1027/2698-1866/a000033.
19. <sup>^</sup>Halpern D, Katz JE, Carril C (2017). "The online ideal persona vs. the jealousy effect: Two explanations of why selfies are associated with lower-quality romantic relationships". *Telematics and Informatics*. 34(1): 114–123. doi:10.1016/j.tele.2016.04.014.
20. <sup>^</sup>Muise A, Christofides E, Desmarais S (2009). "More information than you ever wanted: Does Facebook bring out the green-eyed monster of jealousy?". *Cyberpsychology & Behavior: The Impact of the Internet, Multimedia and Virtual Reality on Behavior and Society*. 12(4): 441–444. doi:10.1089/cpb.2008.0263.
21. <sup>^</sup>Howard MC (2016). "A Review of Exploratory Factor Analysis Decisions and Overview of Current Practices: What We Are Doing and How Can We Improve?". *International Journal of Human–Computer Interaction*. 32(1): 51–62. doi:10.1080/10447318.2015.1087664.
22. <sup>^</sup>McAndrew FT, Shah SS (2013). "Sex differences in jealousy over Facebook activity". *Computers in Human Behavior*. 29(6): 2603–2606. doi:10.1016/j.chb.2013.06.030.
23. <sup>^</sup>Moyano N, Sánchez-Fuentes M del M, Chiriboga A, Flórez-Donado J (2017). "Factors associated with Facebook jealousy in three Spanish-Speaking countries". *Sexual and Relationship Therapy*. 32(3–4): 309–322. doi:10.1080/14681994.2017.1397946.
24. <sup>^</sup>Ortiz-Ospina E, Roser M (2024). "The rise of social media". *Our World in Data*. <https://ourworldindata.org/rise-of-social-media>.
25. <sup>^</sup>Fortune India. (2024, February 3). Rural India accounts for 53% of internet consumption. <https://www.fortuneindia.com/macro/rural-india-accounts-for-53-of-internet-consumption-report/115938>



26. <sup>^</sup>Grimmett G, Stirzaker D (2020). *Probability and Random Processes*. Oxford University Press.
27. <sup>^</sup>BM Corp. Released 2017. *IBM SPSS Statistics for Windows, Version 25.0*. Armonk, NY: IBM Corp.
28. <sup>^</sup>McGartland Rubio D (2005). "Content Validity". In K. Kempf-Leonard (Ed.), *Encyclopedia of Social Measurement* (pp. 495–498). Elsevier. doi:10.1016/B0-12-369398-5/00397-2.
29. <sup>^</sup>Yusoff MSB. (2019). "ABC of Content Validation and Content Validity Index Calculation". *Education in Medicine Journal*. 11: 49–54. doi:10.21315/eimj2019.11.2.6
30. <sup>a, b</sup>Taber KS. (2018). "The Use of Cronbach's Alpha When Developing and Reporting Research Instruments in Science Education". *Research in Science Education*. 48(6): 1273–1296. doi:10.1007/s11165-016-9602-2
31. <sup>^</sup>Watson P. (2018). FAQ/Simon—CBU statistics Wiki. MRC Cognition and Brain Sciences Unit. <https://imaging.mrc-cbu.cam.ac.uk/statswiki/FAQ/Simon>
32. <sup>^</sup>Watkins MW. (2018). "Exploratory Factor Analysis: A Guide to Best Practice". *Journal of Black Psychology*. 44(3): 219–246. doi:10.1177/0095798418771807
33. <sup>a, b</sup>Hair JF, Anderson RE, Tatham RL, Black WC (1998). *Multivariate Data Analysis*. Prentice-Hall, New Jersey.
34. <sup>a, b</sup>Analysis INN. (2020, May 9). KMO and Bartlett's test of sphericity. *Analysis INN*. <https://www.analysisinn.com/post/kmo-and-bartlett-s-test-of-sphericity/>
35. <sup>a, b</sup>SPSS.Com. (2023). *Exploratory Factor Analysis in SPSS*. Retrieved from [https://www.online.spss.com/how-to-run-exploratory-factor-analysis-in-spss/#:~:text=Using%20Exploratory%20Factor%20Analysis%20\(EFA\)%20Test%20in%20Research&text=EFA%20has%20two%20goals%3A,have%20similar%20meanings%20and%20behavior.](https://www.online.spss.com/how-to-run-exploratory-factor-analysis-in-spss/#:~:text=Using%20Exploratory%20Factor%20Analysis%20(EFA)%20Test%20in%20Research&text=EFA%20has%20two%20goals%3A,have%20similar%20meanings%20and%20behavior.)
36. <sup>a, b</sup>Kaiser HF (1974). "An Index of Factorial Simplicity". *Psychometrika*. 39(1): 31-36. doi:10.1007/BF02291575.
37. <sup>a, b, c, d</sup>Field A (2009). *Discovering Statistics Using SPSS*. London: Sage.
38. <sup>^</sup>Bartlett MS (1951). "The effect of standardisation on a Chi-square approximation in factor analysis." *Biometrika*. 38(3/4): 337–344. doi:10.2307/2332580.
39. <sup>^</sup>Bruin J (2006). *Principal Components Analysis*. UCLA: Statistical Consulting Group. Retrieved from [https://stats.oarc.ucla.edu/spss/output/principal\\_components/](https://stats.oarc.ucla.edu/spss/output/principal_components/)
40. <sup>^</sup>Shrestha N (2021). "Factor Analysis as a Tool for Survey Analysis". *American Journal of Applied Mathematics and Statistics*. 9: 4–11. doi:10.12691/ajams-9-1-2.
41. <sup>^</sup>Tavakol M, Wetzel A. (2020). "Factor Analysis: A means for theory and instrument development in support of construct validity". *International Journal of Medical Education*. 11: 245–247. doi:10.5116/ijme.5f96.0f4a
42. <sup>^</sup>Guadagnoli E, Velicer WF (1988). "Relation of Sample-Size to the Stability of Component Patterns". *Psychological Bulletin*. 103(2): 265-275.
43. <sup>^</sup>Tabachnick B, Fidell L. (2001). *Using Multivariate Statistics*. Needham Heights: Allyn & Bacon.
44. <sup>^</sup>Costello AB, Osborne JW (2005). "Best Practices in Exploratory Factor Analysis: Four Recommendations for Getting the Most From Your Analysis." *Practical Assessment Research & Evaluation*. 10(1): 1–9. doi:10.7275/jyj1-4868.
45. <sup>^</sup>Beavers AS, Lounsbury JW, Richards JK, Huck SW, Skolits GJ, Esquivel SL (2013). "Practical Considerations for using Exploratory Factor Analysis in Educational Research." *Practical Assessment, Research, and Evaluation*. 18(1): 1–13. doi:10.7275/qv2q-rk76.

46. <sup>^</sup> Hair JF, Black WC, Babin BJ, Anderson RE (2019). *Multivariate Data Analysis (8th ed.)*. London, United Kingdom: Cengage Learning.
47. <sup>^</sup> Eaton P, Frank B, Johnson K, Willoughby S (2019). "Comparing exploratory factor models of the Brief Electricity and Magnetism Assessment and the Conceptual Survey of Electricity and Magnetism." *Physical Review Physics Education Research*. 15(2): 020133. doi:10.1103/PhysRevPhysEducRes.15.020133.
48. <sup>^</sup> Stevens JP. (2002). *Applied Multivariate Statistics for the Social Sciences (4th ed.)*. Hillsdale, NJ: Erlbaum.
49. <sup>a, b</sup> Hair JF, Black WC, Babin BJ, Anderson RE, Tatham RL (2010). *Multivariate Data Analysis. (Vol. 5)*. Upper Saddle River, NJ: Prentice Hall.
50. <sup>^</sup> Gaskin J (2022). *Exploratory Factor Analysis*. Gaskination's StatWiki. In <http://statwiki.gaskination.com/index.php/EFA#:~:text=a%20meaningful%20EFA.-,Communalities,load%20significantly%20on%20any%20factor>.
51. <sup>a, b</sup> Cheung GW, Cooper-Thomas HD, Lau RS, Wang LC (2024). "Reporting reliability, convergent and discriminant validity with structural equation modeling: A review and best-practice recommendations." *Asia Pacific Journal of Management*. 41(2): 745–783. doi:10.1007/s10490-023-09871-y.
52. <sup>^</sup> Knehta E, Runyon C, Eddy S (2019). "One Size Doesn't Fit All: Using Factor Analysis to Gather Validity Evidence When Using Surveys in Your Research". *CBE—Life Sciences Education*. 18(1): rm1. doi:10.1187/cbe.18-04-0064.
53. <sup>^</sup> Gaskin J (2022a). *Confirmatory Factor analysis*. Gaskination StatWiki. In <http://gaskination.com/index.php/CFA>
54. <sup>^</sup> Gaskin J (2016). *Master Validity Plugin for CFA in AMOS*. Gaskination's StatWiki. [https://www.youtube.com/watch?v=JqySgMU\\_qMQ](https://www.youtube.com/watch?v=JqySgMU_qMQ)
55. <sup>^</sup> Anderson JC, Gerbing DW (1988). "Structural equation modeling in practice: A review and recommended two-step approach." *Psychological Bulletin*. 103(3): 411–423. doi:10.1037/0033-2909.103.3.411.
56. <sup>^</sup> Cheah JH, Sarstedt M, Ringle CM, Ramayah T, Ting H (2018). "Convergent validity assessment of formatively measured constructs in PLS-SEM." *International Journal of Contemporary Hospitality Management*. 30(11): 3192–3210. doi:10.1108/IJCHM-10-2017-0649.
57. <sup>^</sup> Siddig O, Hasaballah AH, Al-Tit A, Almohaimmeed B (2019). "Confirmatory factor analysis for testing the validity and reliability of an internal capability and logistics outsourcing measurement scale". *Transport Problems*. 14: 141–154. doi:10.20858/tp.2019.14.1.13.
58. <sup>a, b</sup> Said H, Badru BB, Shahid M (2011). "Confirmatory Factor Analysis (Cfa) for testing validity and reliability instrument in the study of education". *Australian Journal of Basic and Applied Sciences*. 5: 1098–1103.
59. <sup>a, b</sup> Hu LT, Bentler PM (1999). "Cut-off Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria versus New Alternatives". *Structural Equation Modeling: A Multidisciplinary Journal*. 6(1): 1-55. doi:10.1080/10705519909540118.
60. <sup>^</sup> Byrne BM, Campbell TL (1999). "Cross-cultural comparisons and the presumption of equivalent measurement and theoretical structure: A look beneath the surface." *Journal of Cross-Cultural Psychology*. 30(5): 555–574. doi:10.1177/00220221990300050001.
61. <sup>^</sup> Kline RB (2005). *Principles and Practice of Structural Equation Modeling (2nd Ed.)*. New York: Guilford.
62. <sup>a, b</sup> Byrne BM (2010). *Structural Equation Modeling With AMOS: Basic Concepts, Applications, and Programming (2nd*

ed.). London: Rutledge.

63. <sup>^</sup>Fornell C, Larcker DF (1981). "Evaluating Structural Equation Models with Unobservable Variables and Measurement Error." *Journal of Marketing Research*. 18(1): 39–50. doi:10.1177/002224378101800104.
64. <sup>^</sup>Hair JF, Ringle CM, Sarstedt M (2013). "Partial Least Squares Structural Equation Modelling: Rigorous Applications, Better Results and Higher Acceptance". *Long Range Planning*. 46(1-2): 1-12. doi:10.1016/j.lrp.2013.01.001.
65. <sup>^</sup>Barati M, Taheri-Kharameh Z, Farghadani Z, Rásky É (2019). "Validity and Reliability Evaluation of the Persian Version of the Heart Failure-Specific Health Literacy Scale." *International Journal of Community Based Nursing and Midwifery*. 7(3): 222–230. doi:10.30476/IJCBNM.2019.44997.
66. <sup>^</sup>Hendin HM, Cheek JM (1997). "Assessing Hypersensitive Narcissism: A Reexamination of Murray's Narcism Scale". *Journal of Research in Personality*. 31(4): 588–599. doi:10.1006/jrpe.1997.2204.
67. <sup>^</sup>Lyubomirsky S, Lepper HS (1999). "A measure of subjective happiness: Preliminary reliability and construct validation". *Social Indicators Research*. 46(2): 137–155. doi:10.1023/A:1006824100041.