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Five Love Languages Scale Factor Analysis

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Abstract

This research reexamines composing factors of the Five Love Languages. Previous research has shown differing results on this topic. The Five Love Languages were measured by adapting the Five Love Languages Scale. This scale was then modified to lengthen participants' response range and add one ancillary item. The research sample comprised of 687 undergraduate students and selected through proportionate quota sampling. Sample age ranges were between 17 and 40 years old. Exploratory factor analysis showed items were laid out accordingly with factor loading for each item ranging from 0.463 up to 0.853. EFA also exhibited love language is constructed by four components. The unique aspect found on this research was sacrificial element.

Analisis Faktor Skala *Five Love Languages*

Abstrak

Penelitian ini bertujuan untuk menguji kembali faktor penyusun komponen *five love languages*. Hal ini disebabkan temuan yang divergen pada penelitian-penelitian terdahulu. Variabel five love languages diukur dengan Skala *Five Love Languages*. Alat ukur kemudian dimodifikasi dengan memperpanjang rentang respon partisipan dan menambah satu butir tambahan. Sampel penelitian adalah 687 mahasiswa program sarjana yang dipilih menggunakan *proportionate quota sampling*. Rentang usia sampel adalah 17 sampai 40 tahun. Analisis faktor eksploratori memperlihatkan sebaran butir penyusun yang konvergen dengan rentang *factor loading* masing-masing butir terentang dari 0.463 hingga 0.853. Hasil EFA juga menunjukkan bahasa cinta tersusun dari empat aspek. Aspek unik pada temuan penelitian ini adalah aspek pengorbanan.

Keywords: Factor analysis, Five Love Languages, Love, Sacrificial love

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1. Introduction

A discussion of love in the scientific domain is not an easy undertaking. Love is a rudimentary human experience, which makes the topic of love often seen as "humanistic" rather than empirical (Hayes, 2013). Psychological studies on love can be seen as ambivalent. On the one hand, "love" experiences are sometimes empirically researched; on the other hand, they are seen as something theological and spiritual (Tjeltveit, 2006). The authors believe that the notion of love is worthwhile of scientific research.

Love is a universal emotion and can be felt by all individuals of all ages, from all backgrounds around the world. Sailor (2013) asserted that everyone has felt some form of love, regardless of culture or geography. Love is an essential element needed by each individual and is one of the keys for sustaining relationships, particularly familial relationships. However, the feeling of love can fade, even for couples in committed marital relationships.

This phenomenon was researched by Sailor (2013), who observed the high divorce rate in United States. The research suggested the fading of affection felt towards one's partner is a cause for the high divorce rate. Several themes that emerged from this research were the loss of trust, intimacy, the feeling of being loved, emotional pain, and negative self-concept. In addition, another theme identified in this research included the gradual decline of affection, which could create progressive damage of romantic relationships overtime, such that the feeling of love would eventually fade. A

conscious effort is necessary to prevent the fading of love which causes marital failures.

One of the efforts to be considered relates to the Five Love Languages (FLL) theory by Chapman (2010). This theory has the potential to answer some of the issues put forth by Sailor's research (2013). Upon conducting observations, interviews, and research in various countries for over 10 years, Chapman (2010) found that everyone has his or her own love language. These love languages fall under five main categories, which are Words of Affirmation, Quality Time, Acts of Service, Receiving Gifts, and Physical Touch. The authors believe that this theory has wide applications to help mitigate relationship problems in various societies. However, the theory is still lacking in empirical support prior to being disseminated to the general public.

Louie (2014) wrote a satirical criticism on Chapman's concept in the Asian cultural context, suggesting that gift giving in Asian families can be interpreted as "buying" affection and thus replacing the effort to empathize or understand one's romantic partner. Additionally, physical touch for Asians is still considered taboo when expressed by parents towards their children and when expressed by partners in public. This criticism compelled the authors to challenge the validity of universality of the concept of love languages, particularly in the Asian context.

Several researchers tested the theory of Chapman's FLL, for example Egbert and Polk (2006), which attempted to prove the validity of FLL theory by using self-reported validity testing. The findings of Egbert and Polk (2006) indicated conformity on Chapman's FLL. Cook et al. (2013) also conducted construct validity testing on Chapman's FLL theory using factor analysis, from which five factors related to love languages were found, namely, sacrificial love, intimate love, quality time love, supportive love, and comforting love.

In Indonesia, scholars have been involved in research with the aim to conduct construct validity in FLL, as it relates to the theory by Chapman (2010). Surijah and Septiarly (2016) conducted a study that aimed to empirically prove FLL theory and to affirm the aspects constructing this theory. This research involved 400 students in an institution of higher learning in Bali. The researchers constructed an instrument in the form of a questionnaire with 34 questions to measure what makes people feel loved. This instrument was then analyzed using exploratory factor analysis (EFA). The analysis suggested five components of love languages, confirming Chapman's initial concept.

The authors then conducted a descriptive survey with adolescents in Bali as the sample on FLL using a previously formulated scale (Surijah, Ratih, & Anggara, 2017). This research discovered "Acts of Service" as the dominant love language. Conversely, the FLL with the lowest frequency reported was "Quality Time." Compared to prior research, the authors found different dominant categories on samples coming from two different age groups, late adolescent and early adulthood.

Subsequent research was conducted by Surijah and Sari (2018), which validates FLL on several external criteria. The chosen variables originated from the "Big Five" personality (Rammstedt & Joh, 2007) variables, from which the researchers conducted EFA replication on similar samples as in the research by Surijah and Septiarly (2016). The latest findings indicated a significant correlation between FLL and personality models, except for the aspect of "Receiving Gifts." To illustrate, the research found that the "Words of Affirmation" love language was correlated with an "extraversion" personality type ($r = 0.304$, $p < 0.01$). Feeling loved through physical touch significantly correlates to "openness to new experience" ($r = 0.207$, $p < 0.01$). Factor analysis replication also displayed different components of love language compared to prior research.

From previous research on Chapman's love language (2010) in Indonesia, a similarity was found in which the distribution of the data was skewed to the left for each aspect. This suggests that the research samples tend to feel loved or categorized on the high scale on all aspects of love languages. Conversely, among the research conducted, the EFA has not shown convergent findings. Therefore, this current research aims to continue the series of studies related to FLL by implementing several changes, particularly in terms of the analytical technique and measurement scale utilized.

The study by Surijah and Septiarly (2016) utilized EFA to determine the components that constitute the love languages. This research tests whether the items that constitute the love language scale fit the theory or blueprint of the scheme that becomes the basis for the study. The previous study utilized the Likert scale to conduct construct validation on FLL. Chapman (2010) initially employed an ipsative scale to measure an individual's love language, but the Likert scale was chosen in the previous research due to technical considerations on the implementation of factor analysis (Surijah & Septiarly, 2016). However, the Likert scale possesses some weaknesses that the authors suspect may have tarnished previous research findings.

One of the weaknesses of the Likert scale in this application is that the data it produces could be interpreted as interval data instead of categorical data. In order to produce quantitative results, researchers will recode the data into numerical figures, and the data are then reexamined as categories or degrees. This

misunderstanding and compulsion to treat data produced by the Likert scale as numerical degrees could become a source of error in the analysis (Treiblmaier & Filzmoser, 2009).

The previously constructed FLL scale required respondents to assess the feeling of being loved based on the five different treatments received. We suspect that the use of Likert scale with five-range responses caused respondents' lack of ability in differentiating their dominant love language. This resulted to respondents being categorized as high in each love language.

The recommendation given to alleviate the weakness of Likert scale is to use a different scale such as semantic differential or continuous rating scale. The two scales share some similarities. Respondents were asked to respond to a certain range of numbers. The cues were only given in the beginning and ending of each response choice (Treiblmaier & Filzmoser, 2009).

Related to the width of the response range, Østerås et al. (2008) stated that the wider the response range, the steadier the scale. However, human limitations in comprehending a range of response choices are only seven points. From a practical standpoint, the difficulty of finding seven categories/adjectives (in the context of the Likert scale) and the printing of a legible scale become the primary reasons that the Likert scale is mostly limited to five response choices.

This study changes the FLL scale used by the researchers. This change was conducted by translating the items on FLL scale used by (and with permission from) Polk and Egbert (2013). The authors also initiated a change from the Likert scale to a scale recommended by Treiblmaier and Filzmoser (2009). We also increased the response range for each item from five to ten. This range was chosen with the intent that the scale could have the ability to differentiate respondents' categorization of each FLL aspect.

The authors expect that this research could lend empirical support to FLL. The modified FLL scale could result in a more satisfactory factor analysis compared to previous research findings. The satisfactory indicator would be the absence of dropped items due to insufficient factor loading in the factors that constitute the FLL construct. The findings from this research are also expected to encourage other researchers to utilize the love language instrument and conduct research on other variables connected to romantic relationships such as self-esteem (Luciano & Orth, 2017) or well-being (Viejo, Ortega-Ruiz, & Sánchez, 2015). Thus, the current research aims to answer whether the FLL scale adapted from Egbert and Polk (2006) has the constituting components like the FLL construct by Chapman.

Five Love Languages. Five Love Languages (FLL) refer to five characteristics that make individuals feel loved. Chapman (2010) suggested that everyone has the tendency to feel loved in all Five Love Languages, but each person has one dominant love language, which is referred to as their primary love language.

Chapman (2010) categorized the love languages into five aspects, Words of Affirmation, Quality Time, Acts of Service, Receiving Gifts, and Physical Touch. The first aspect is Words of Affirmation. Words play a large role in expressing affection, such that individuals with this love language feel appreciated and loved if given words of praise and motivation and other positive comments. Quality Time is the second aspect of love languages. Focused and undivided attention is treasured by individuals with this love language. Individuals with Quality Time as their dominant love language feel loved and appreciated when loved ones can spend time with and give undivided attention to them.

The third aspect of love languages is Acts of Service. Individuals with this love language feel loved and appreciated when receiving assistance or service from loved ones. Receiving Gifts is the fourth aspect of love languages; individuals with this love language feel loved when receiving gifts from loved ones, regardless of the monetary value of the gifts. Rather, the primary consideration is the love and caring received along with the gift. The last aspect of love language is Physical Touch, which is not limited to hugs and caresses, but all forms of physical touch such as pats on the head, embraces, and hand-holding.

Instrument of Five Love Languages. Chapman (2010) as the originator of the Five Love Languages theory used ipsative scale for data collection to understand the profiles of respondents and determine their dominant love languages. The instrument constructed by Chapman consisted of 30 questions. Each question had two options. The respondents were required to choose either option in each question. The ipsative scale is a compulsive scale because the research subject is required to choose one among two or more answers (Matthews & Oddy, 1997). The strength of this scale is its ability to determine the categories most frequently chosen by the respondents. However, for validity testing of a theoretical construct, the use of ipsative scale lacks precision (Englert, 2010).

Egbert and Polk (2006) utilized the Likert scale in collecting FLL research data. The constructed scale was normative, which gave five optional statements for the research subject to choose from, ranging from "strongly disagree" to "strongly agree." The scale formulated by Egbert and Polk consisted of 20 items, four for each of the aspects of FLL—adhering to the theory in Chapman's book (2010).

Cook et al. (2013) also constructed FLL scale using Likert scale. This scale consisted of 24 items based on Chapman's theory (2010). Each aspect of the love languages was measured using eight questions. This scale was then tested on 185 participants to determine the validity of the hypothesis that the Five Love Languages existed.

Surijah and Septiarly (2016) also conducted a study using the Likert scale with 34 items. The scale used also gave a range of five options ranging from "strongly disagree" to "strongly agree" and was formulated based on Chapman's concept (2010). The FLL scale constructed by Surijah and Septiarly was also employed in their own research study. The Likert scale, as suggested by Englert (2010), has a higher number of data points required to conduct factor analysis compared to the ipsative scale.

2. Methods

Instrument. The instrument for data gathering utilized in the Five Love Languages Scale was reformulated by the authors. In the initial steps, the authors contacted Denise M. Polk to request permission to translate the scale used in her previous research (Polk & Egbert, 2013) into Indonesian language. The authors chose to use instrument translation as the initial step as the characteristics of the instrument used by Polk and Egbert (2013) closely resembled an integer scale or a continuous rating scale. This scale initially consisted of 20 items. The authors then translated the initial scale.

We then added one additional item in the Words of Affirmation, i.e., "my partner often says romantic sentences like 'I love you'." This consideration emerged because the previous research and Chapman's initial concept consisted only of romantic words. Meanwhile, Polk and Egbert's scale (2013) only covered words of praise. Subsequently, the 20 translated items and 1 additional item went through a professional judgment process (by one psychologist and one researcher who understood Chapman's concept of love languages). Both raters gave scores between 1 ("highly incapable") and 7 ("highly capable") for each item to assess the capability of that question to measure the intended aspect.

All aspects attained mean scores of >5, except for the "Receiving Gifts" aspect ($\bar{x}$ = 4.87). One item in the aspect of "Quality Time" (item number 12) received a low mean score ($\bar{x}_{QT3}$ = 4), which was then changed from "my partner has quality conversations with just the two of us" into "my partner spends time to meet me in the middle of his/her activities."

The scale was preceded by one general sentence: "I tend to feel loved when…." This statement was followed by 21 items consisting of treatment statements that represented the five aspects of FLL, such as "my partner hugs me." The authors believe that when the general question is given only once, the respondents can focus on the treatment statements. In the previous instrument, the general statement "I feel loved when…" was written for each item (see Surijah & Septiarly, 2016).

The new instrument in the current research also changed the responses to be given by the respondents. In the previous research, the response choices ranged from "agree" to "disagree"; the response options in this study ranged from "do not feel loved" to "feel loved"—placed at the beginning and end of each numerical response range. The response ranges also changed from 5 to 10 points (see Appendix 1).

Table 1. Blueprint of FLL scale

No.	Aspect	Mean Score of Professional Judgment	Indicator	Favorable Items	
				Item Numbers	Quantity
1.	Words of Affirmation	5.6	Given praise, given words of affection; uttered positive words; given appreciation.	1, 6, 11, 16, 21	5
2.	Quality Time	5.75	Given undivided attention when together; listened without interruptions; doing activities together.	2, 7, 12, 17	4
3.	Acts of Service	5.5	Aided with tasks; helped with no strings attached; self-initiated assistance.	3, 8, 13, 18	4
4.	Receiving Gifts	4.87	Given gifts that are made, bought, or found; given luxurious or modest gifts; given gifts at unexpected times.	4, 9, 14, 19	4
5.	Physical Touch	5.75	Touched; embraced; caressed; held by the hand.	5, 10, 15, 20	4
				Total Items	**21**

An initial reliability test of FLL scale was conducted on 60 subjects in a secondary school in Denpasar. An item in the scale could satisfy the reliability requirement if it was able to attain total item correlation of >0.30. The validity testing indicated that all 21 items were valid with the correlation coefficient of each item >0.30. *Cronbach's alpha* testing also indicated that each aspect in the scale met the reliability requirement with alpha coefficient of >0.70. The blueprint of FLL scale is presented in Table 1.

Sample. With research limitations, participant sampling using university students in research is a common practice. This is done with the consideration of ease, as well as the assumption of homogeneity in educational level and other psychographic factors (Fischer & Schwartz, 2011; Hanel & Vione, 2016; Peterson & Merunka, 2014). The population in this research is the number of students in two universities in Bali. Both universities share similar demographic characteristics, in which the majority of the students are ethnic Balinese. Both are private universities with similar accreditation levels. The first university has a student body of 1,845 under two faculties, and the second has a student body of 9,355 under seven faculties.

The authors employed proportionate quota sampling by predetermining the quota of samples needed in each faculty in each university. A Sample Size Calculator program version 1.0.3.10 was used, with 95% confidence level and 5% confidence interval, and the required numbers of samples were 318 in Universitas Dhyana Pura and 369 in Universitas Warmadewa. The total number of samples needed was 687. The authors were aided by the university in finding and distributing the printed questionnaires to students willing to participate as respondents; thus the research was able to meet the required quota in each faculty of each university.

As many as 55.02% of the respondents were female (n = 378), whereas the remaining were male (44.98%; n = 309). Most of the participants were 18 to 20 y old (74.4%; n = 511). Ethnically, 63.9% (n = 439) were Balinese, whereas the remainder came from other regions such as Java and Eastern Indonesia. To demonstrate that the participants had the basic understanding on the concept of a relationship, Table 2 illustrates the relationship status of respondents, i.e., whether they were or had been in a relationship. Most of the participants were or had been in a relationship (those who were married were categorized as "currently in a relationship"). Only 6% of the samples had never been in a relationship.

Analysis. The data analysis consisted of two steps. In the first step, the authors conducted confirmatory factor analysis (CFA) using AMOS software. This was done to determine the FLL model's appropriateness. The analysis employed χ^2 (chi-square model fit), RMSEA, and CFI. Subsequently, the authors also conducted exploratory factor analysis (EFA) using SPSS version 20.0 software. The procedure for conducting such analysis included choosing the variables, formulating the factors, interpreting the findings, and conducting validity testing on the factor analysis.

Table 2. Relationship status of research samples

Relationship Status	Frequency (persons)	Percentage (%)
Currently in a relationship	388	56.5
Currently not in a relationship	249	36.2
Had never been in a relationship	41	6
Not applicable	9	1.3
Total	687	100

Prior to testing using factor analyses, Measure of Sampling Adequacy (MSA) and Bartlett Test of Sphericity were conducted to determine whether the variables were fit for further analysis. Upon determining the variables and calculating correlations among them, the next step involved constructing the factors to find the underlying structure of the correlations among the initial variables (Johnson & Wichern, 2007). Upon forming the factors, each consisting of the research variables, the authors conducted the naming of the factors based on the characteristics of its members.

To ensure the novelty of the current research, the authors observed the skewness and kurtosis of the findings. The research on the data distribution allowed the authors to examine differences between the responses given in previous research using the Likert scale and ones given in the current research using modified scale. The skewness and kurtosis were calculated using Microsoft Excel 2013.

3. Results

The descriptive findings of the research are shown in Table 3. The means of each component ranged from 25.43 to 38.04 (*SD* = 7.467 to 9.161).

The next step in the analysis involved item-total correlation testing and calculation of the alpha coefficient. In general, the findings indicated that each FLL aspect had alpha coefficient of α >0.600 (see Table 5). This indicated a good validity source of internal consistency. The findings will be further discussed in comparison with previous FLL scale.

Table 3. Descriptive statistics of research findings

Data Description	Aspects				
	Words of Affirmation	**Quality Time**	**Acts of Service**	**Receiving Gifts**	**Physical Touch**
N	687	687	687	687	687
Mean	38.04	32.21	25.43	27.24	29.46
SD	9.161	7.467	9.064	8.229	8.815
Lowest Total Score (X)	5	4	4	4	4
Highest Total Score (X)	50	40	40	40	40

Subsequently, the authors conducted confirmatory factor analysis (CFA), which resulted in the following test results in Table 4:

Table 4. Findings from confirmatory factor analysis

	Values	**P**
χ^2 Test of Model Fit	1145.448 df = 179	<0.001
RMSEA	0.089	<0.001
CFI	0.897	

Note. RMSEA= root mean square error approximation; CFI = comparative fit index

The testing indicated significant chi-square, χ^2 = 1145.448, *df* = 179, $p < 0.001$. This finding suggested that the five-component model of the love languages did not have goodness of fit. The root mean square error approximation (RMSEA) also yielded 0.89 with $p<0.001$, whereas the ideal RMSEA is <0.05. Comparative fit index (CFI) measures the fit of a model compared to the independence model. The CFI value obtained was 0.897. A good score to indicate goodness of fit for CFI is >0.95 (Hu & Bentler, 1999).

Based on the data from the CFA testing, the authors concluded that the model of love language constructed by five components is not supported. Therefore, the authors conducted an exploratory factor analysis to examine the components or structure of love language within the contextual limitations of this research.

Kaiser-Meyer-Olkin testing indicated MSA values based on an anti-image matrix with the range of 0.873 to 0.975. Bartlett's Test of Sphericity measurement showed the value of χ^2 = 9,500.458; $p < 0.05$. Both testing processes suggested that the data meets the requirement for factor analysis.

EFA on FLL scale data yielded four components with eigenvalues above 1.000. The items distributed among the four components had factor loading values of >0.600. The findings from the factor analysis can be seen in Table 6.

Table 5. Item-total correlation and alpha coefficient of FLL

No	**Aspect**	**Alpha Coefficient (α)**	**Item Numbers**	**Item-Total Correlation**
1.	Words of Affirmation	0.861	1	0.590
			6	0.731
			11	0.714
			16	0.696
			21	0.684
2.	Quality Time	0.865	2	0.599
			7	0.771
			12	0.752
			17	0.739
3.	Acts of service	0.848	3	0.699
			8	0.757
			13	0.684
			18	0.616
4.	Receiving Gifts	0.813	4	0.607
			9	0.600
			14	0.645
			19	0.678
5.	Physical Touch	0.903	5	0.813
			10	0.756
			15	0.782
			20	0.789

The codes listed were abbreviations of the aspects of Five Love Languages. Words of Affirmation was abbreviated as WoA, Quality Time as QT, Acts of Service as AoS, Receiving Gifts as RG, and Physical Touch as PT. This was done to simplify and easily examine the distribution of items on each component. Table 6 demonstrates that components 2, 3, and 4 consisted of items from homogeneous aspects. Meanwhile, component 1 was constructed by components from Acts of Service and Receiving Gifts variables.

Table 6. Findings from factor analysis of FLL scale

No.	Factor	Eigenvalue	Percentage of Variant	Code and Item Number	Factor Loading
1.	Component 1	9.978	47.516%	AoS 3	0.854
				RG 4	0.463
				AoS 8	0.848
				RG 9	0.477
				AoS 13	0.667
				RG 14	0.508
				AoS 18	0.657
				RG 19	0.553
2.	Component 2	1.898	9.039%	PT 5	0.753
				PT 10	0.737
				PT 15	0.734
				PT 20	0.751
3.	Component 3	1.282	6.104%	QT 2	0.644
				QT 7	0.784
				QT 12	0.812
				QT 17	0.723
4.	Component 4	1.004	4.783%	WoA 1	0.774
				WoA 6	0.675
				WoA 11	0.718
				WoA 16	0.596
				WoA 21	0.675

Note. Aos = Acts of Service; RG = Receiving Gifts; PT = Physical Touch; QT = Quality Time; and WoA = Words of Affirmation

Table 7. Analysis of items from factor analysis findings

Initial Aspect	Item No.	Item	Concept Equivalence
Acts of Service	3	My partner does my tasks for me	Sacrifice of time & thought
	8	My partner finishes my tasks when I don't have time to finish them	Sacrifice of time & thought
	13	My partner helps relieve my task burden when I need help	Sacrifice of time & thought/effort
	18	My partner helps me clean my things	Sacrifice of time & effort
Receiving Gifts	4	My partner gives me special birthday gifts	Sacrifice of time & money
	9	My partner gives me congratulatory cards	Sacrifice of time
	14	My partner gives me gifts when there isn't any special occasion	Sacrifice of money
	19	My partner gives me modest gifts when he/she returns from a trip	Sacrifice of money

Table 8. Blueprint of adapted FLL scale

No.	Factor Name	Item Number
1.	Sacrificial Love	3, 4, 8, 9, 13, 14, 18, 19
2.	Physical Touch	5, 10, 15, 20
3.	Quality Time	2, 7, 12, 17
4.	Words of Affirmation	1, 6, 11, 16, 21

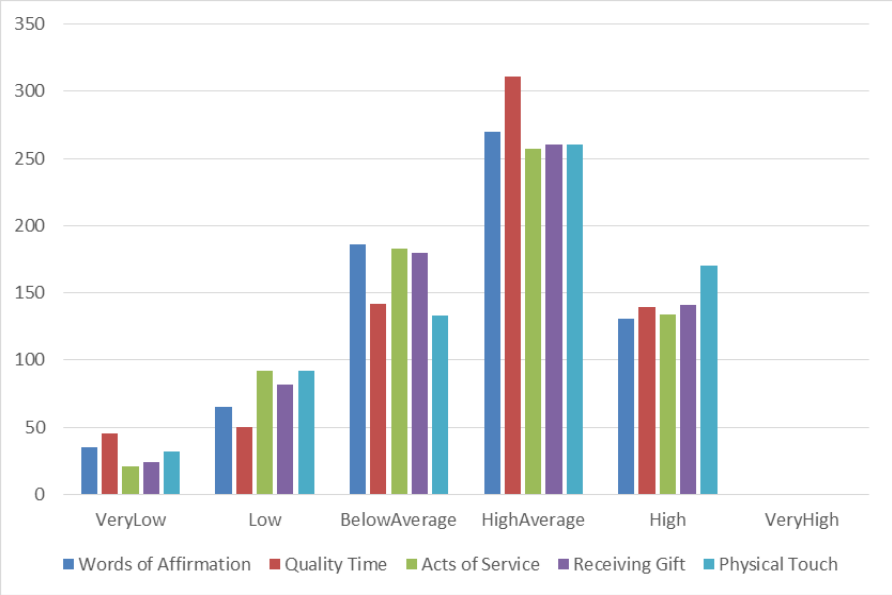

Figure 1. Sample categorization indicated that the distribution of categorical data is left-skewed. Most of the data are distributed on the "Above Average" category for each aspect of love language. The highest number of participants in the Above Average category is in the "Quality Time" aspect.

Table 9. Skewness and Kurtosis measures of the Five Love Language aspects

Aspect	Skewness	Excess Kurtosis
Words of Affirmation	-0.950	0.659
Quality Time	-1.384	1.737
Acts of Service	-0.383	-0.569
Receiving Gift	-0.598	-0.257
Physical Touch	-0.809	-0.105

Table 10. Cross tabulation of sex and primary love language

		Five Love Language Aspects				
		Words of Affirmation	**Quality Time**	**Acts of Service**	**Receiving Gifts**	**Physical Touch**
Sex	Male	17	12	14	0	7
	Female	4	22	7	4	4
Total		21	34	21	4	11

The naming of the components was based on the distribution of items constructing that component. Components 2, 3, and 4 were easily named because they were constructed by items from homogeneous aspects. For instance, component 2 can be directly called Physical Touch component or aspect. Conversely, component 1 requires additional analysis in component naming. Table 7 shows the items that construct component 1.

Based on Table 7, the authors saw a similarity among the items, i.e., the element of sacrifice in component 1. In the discussion section, the naming of component 1 will be further elaborated on. Thus, the findings of the current research suggest that there are four components of love languages, namely, Physical Touch, Words of Affirmation, Quality Time, and a new/different component that relates to "sacrifice." For subsequent research, the blueprint of FLL scale will be altered (Table 8).

Subsequently, the authors added descriptions of the data in the form of love language categories. This is a part of a comparative discussion of the current and previous research. As an early step, the authors conducted categorization with six levels: Very Low, Low, Below Average, Above Average, High, Very High. This categorization is based on mean values and standard deviation of each aspect of love language (see Table 3). The illustration below shows the distribution on the categorization of love languages using five initial aspects.

To better understand Figure 1, the authors conducted skewness and kurtosis testing. The analysis indicated left-skewness value (-1.384) and excess kurtosis (1.737) on the aspect Quality Time. This suggests that Quality Time has the most extreme left skewness. However, the other four aspects are also generally left-skewed.

By examining Figure 1 and Table 9, the authors determine that the research samples can be generally categorized as "Above Average" and "High." The Quality Time aspect was the most prominent aspect in this sample. This finding indicates that more samples are categorized as "Above Average" and "High" in the Quality Time aspect and that the respondents feel most loved when they spend time with their loved ones.

The authors conducted further analysis on the samples that belong to "Above Average" to "Very High" category on only one aspect (previously coined "Pure Category" or primary love language). The primary love language of Quality Time is the love language that was encountered most frequently among the samples, particularly female respondents. In male respondents, the primary love languages with the highest frequency were Words of Affirmation followed by Acts of Service and Quality Time (Table 10).

4. Discussion

The newly constructed FLL scale resulted in findings that support the elemental factors formulating the love language construct. The authors regard the findings in this current research as an extension of the previous research. This observation is based on several key aspects of the findings. Firstly, the reliability coefficient (Cronbach's Alpha) in this research indicated good reliability on each aspect ($\alpha > 0.500$). This is consistent with the previous research findings (Surijah & Sari, 2018). However, the correlation values of each item-total in this research were >0.500, whereas the correlation values of item-total in the previous research ranged from 0.086 to 0.530.

In a series of efforts to test for validity, the authors did not rely solely on the values of Cronbach's alpha. However, both findings are positive indicators supporting the validity of the love language construct. The item-total correlation values (>0.500) indicated that each item relates to the total values of the measured scale. Thus, the authors proceeded to conduct factor analysis, which is commonly used in similar research in the subject of love styles or attachment (Karantzas, Feeney, & Wilkinson, 2010; Neto & Menezes, 2014; Shahrazad, Hoesni, & Chong, 2012).

Meanwhile, the findings from the confirmatory factor analysis (CFA) indicate that the model tested does not support the initial hypothesis that the love language construct comprises of five aspects ($\chi^2 = 1145.448$, $df = 179$, $p < 0.001$). Then the authors conducted exploratory factor analysis (EFA), which showed several curious findings. This indicator was based on comparison of two previous findings. The first research (Surijah & Septiarly, 2016) on the validation of love language scale dropped 17 of the 34 items due to low factor loading values, or when an item was simultaneously in more than one component. This study and the subsequent study (Surijah & Sari, 2018) demonstrated five factors that made up the love language construct. However, both studies resulted in divergent findings as they relate to the items constructing the components as a result of factor analyses.

The EFA findings in the current research suggest that there are four factors forming the construct of love languages. This is divergent from previous research findings (Cook et al., 2013; Egbert & Polk, 2006; Surijah & Septiarly, 2016; Surijah & Sari, 2018). This finding is also dissimilar to the initial concept by Chapman (2010), who believed that there were five components constructing the love language. The four factors can explain 67.442% of the entire data variant in this research. This is higher than the previous research conducted by Surijah and Septiarly (2016) who found this to be 60.472%.

The authors believe that the findings of this study are superior because of other considerations from further observation. The EFA findings indicated three components were comprised of homogeneous items. These three components are Words of Affirmation, Quality Time, and Physical Touch. This demonstrates that the three components are made up of items that were initially constructed for those components. Meanwhile, the items in Acts of Service and Receiving Gifts collectively form a new component. All the items have factor loading value of >0.400, which allow for none of the components to be dropped as compared to the previous research.

The new findings demonstrate that the modification of the scale from Likert to its new form and the increased range of options resulted in strong support for the

validity of the love language construct. Respondents no longer had to assess their level of agreement to each question but rather truly assess how much they felt loved from each statement in each item. The statements in the new scale were also modified so that the respondents could easily focus on the actual content of each statement.

Aside from the scale modification factor, the authors also realize that this research had a larger sample size compared to the previous research. The previous research only used around 300 respondents. In this study, the research involved 687 respondents. Several studies suggest that larger sample size can influence the result of factor analysis, making it more accurate (Marsh, Balla, & McDonald, 1988; MacCallum, Widaman, Zhang, & Hong, 1999; Pearson & Mundform, 2010).

The determination of sample size previously still used a heuristic approach. For instance, 500 is considered a moderate sample size to conduct factor analysis, whereas 1,000 is considered excellent (Kline, 1994). The larger the sample size, the lesser probability of error in the empirical measurement. However, another aspect such as the level of communality (i.e., how much the variant can explain certain variable) also influenced the sample size needed in factor analysis application. MacCallum et al. (1999) suggested that 500 is an adequate sample size to conduct factor analysis. This suggestion increased the authors' confidence in the findings of the current study's factor analysis, which is more reliable than the previous research.

Table 7 shows the analysis of the items that make up component 1, which comprises of the items from the aspects of Receiving Gifts and Acts of Service. The similarity in these items is in the element of "sacrifice." The authors observed similar findings in the research by Cook et al. (2013). Said research conducted factor analysis and found a different component when compared to the initial concept by Chapman (2010). The component is "sacrificial love" (i.e., time, effort, and affection sacrifices).

In the process of validation on the "sacrificial love" component, the authors took several steps. Firstly, the authors conducted in-depth review of previous literature and studies that discuss love behavior and sacrifice. Secondly, the authors summarized the findings in the form of a definition of "sacrificial love."

This sacrificial aspect is supported by the previous research and is similar with the love concept initially coined by Lee, which is the concept of "agape" (Hendrick & Hendrick, 1986; Hendrick, Hendrick, & Dicke, 1998; Murthy, Rotzien, & Vacha-Haase, 1996). The "agape" concept was then translated into items in the measurement scale such as: "I would rather suffer myself than let my partner suffer" or "I am usually willing to sacrifice my own wishes to let my partner achieve his/hers." This concept considers love as an altruistic behavior and an obligation.

However, there is a differentiating factor between the love language concept of "sacrificial love" and "agape." Love language stresses the feeling of being loved when one receives a certain treatment from their partner. The authors perceive this a passive form of love (i.e., the individual receiving treatment from a loved one). Meanwhile, "agape" and other typologies in "Love Attitude Scale" show how one should behave or act. Thus, "agape" is an active form of love (i.e., the individual giving treatment towards a loved one).

The concept "agape" itself comes from religious terminology. This term was introduced to indicate a behavior of mutual love among individuals. The mutual love behavior is not limited to love towards a partner but also love towards an enemy or a marginalized group (e.g., underprivileged or disabled individuals) (Post, 2002). This means that the term "agape" has a broader meaning and is not tied to the spousal and/or romantic relationships. This epistemological difference encourages the authors to use the term "sacrificial love" in explaining the new findings of love language.

In addition to "agape," the authors also conducted a literature review to better explain the aspect of sacrificial love. One of the other terms encountered was "maternal love." Historically this concept was researched by Vassiliadou (2017), who studied old correspondences. This research examined affective vocabularies used in communications. The "maternal love" concept was encountered in women or mothers (i.e., the concept of motherhood). The concept contained acts of self-sacrifice and self-suffering.

Another research also examined the link between sacrifice and relationship satisfaction. The findings of said research suggested that the sacrifice given in an intimate relationship should be followed by a response or appreciation of that sacrifice. Low levels of appreciation can decrease satisfaction in a relationship (Young & Curran, 2016). The authors perceive that this research supports Chapman's concept that intimate relationships are not only seen by how an individual expresses her feelings but also how a partner receives that treatment. Additionally, this research also suggests a sacrificial aspect that is done within the context of intimate relationships.

Willingness to sacrifice oneself is evolutionary and is found in various species. This signifies that sacrificial behavior is necessary in sustaining the life of a species (Sober & Wilson, 1998; Miller, 2007). The sacrificial object is not only done towards fellow mankind (as

previously discussed) but also in nature or other beings (Davis, Le, & Coy, 2011).

Sober (2002) introduced the concept of "altruistic love." Altruism, in addition to being understood as an evolutionary and psychological concept, is also understood in the concept of love behavior. This love concept means that an individual expects the person he or she loves to be happy. An individual can expect another person to be happy but without being followed by a certain emotional sensation. This differentiates altruistic behavior towards a partner and altruistic behavior towards another person (e.g., victims of natural disaster). The perspective offered by Sober enriches the understanding that altruism has a dimension that intersects with the concept of love.

Altruism has at least four faces: 1) public, which refers to general aid done openly; 2) charity, which refers to general aid done privately; 3) social, which refers to personal aid done publically; and 4) support, which refers to personal aid done privately (Otto & Bolle, 2011). A general behavior of giving aid is a behavior towards a group of individuals, institution, or community. Meanwhile, personal aid refers to a behavior towards an individual. "Sacrificial love," which includes "Acts of Service," relates to the concept of altruism that is done personally towards a partner or loved one.

A behavior can be categorized as altruistic if it meets several criteria: firstly, the behavior is directed towards helping another person increase his or her welfare; secondly, the behavior is done voluntarily; thirdly, the behavior displayed requires risk or sacrifice from the giver; lastly, the behavior appears without apparent hope for an external reward (Oliner, 2002).

These four criteria help the authors determine the constraints of "sacrificial love." This form of love language involves the attempt to provide aid voluntarily for a loved one. This aid requires sacrifice of certain resources. However, different from pure altruism, "sacrificial love" requires a response or appreciation from the partner in the context of intimate relationship.

In empirical studies, terms that contain "sacrifice" are widely used such as "intimate sacrifice" or "relational sacrifice." Prior research suggested that sacrifice, particularly the perception of awareness of the sacrifice given towards a partner, has a significant correlation to relationship satisfaction or relationship quality (Curran, Burke, Young, & Totenhagen, 2016; Mattingly, 2007; Young & Curran, 2016). Curran et al. (2016) further elaborated that the form of sacrifice could include various behaviors, both sexual and nonsexual. These findings affirmed that "sacrifice" is an important component in an intimate relationship.

Young and Curran (2016) suggested that sacrifice in the context of intimate relationships includes behavior that causes loss or even danger to the giver and appreciation from the partner. The "loss" component can be associated with the "cost" incurred when performing the behavior for the partner. This is consistent with the analysis on Table 7, in which the authors identify the "cost" incurred when a partner is performing the behavior such as giving gifts and helping to clean the partner's belongings.

The findings from the current research and literature review indicate the existence of love language component that contain a "sacrificial" aspect. The sacrificial element in an intimate relationship and love between individuals has widely been discussed using various perspectives with various terminologies and diverse approaches. This demonstrates the existence of the "sacrificial" aspect in love. Specifically, the "sacrificial love" aspect is not only a combination of "receiving gifts" and "getting help." The authors found that the sacrifice must contain a voluntary element and can have positive consequences for both the giver and the receiver of aid.

The authors observed available literatures that illustrate "sacrificial love" in active forms. Individuals express their affection through acts of sacrifice. This is altered when faced with Chapman's concept that tends to perceive the love language as a passive feeling of being loved. Therefore, in the context of love languages, "sacrificial love" is when an individual feels loved when his or her partner offers aid voluntarily. This aid has positive consequences for the receiving partner.

The subsequent discussion relates to the findings of the current research, which indicates that the data are not normally distributed but rather skewed left. The distribution of the participants' response tends to fall on the "High" and "Very High" categories for each aspect. This is consistent to the findings from the previous research (Surijah & Septiarly, 2016; Surijah & Sari, 2018). The authors had expected that the change in the type of scale and response employed could alter such findings. The authors initially expected that the modified FLL instrument would be able to determine the dominant type of love language in individuals.

However, the previous research showed only 29 respondents could be considered in the Pure Category or primary love languages (Surijah & Septiarly, 2016). The authors consider that determining if an individual belongs to the Pure Category is done by calculating the number of participants scoring in the "High"/"Very High" category for one aspect while scoring "Average" to "Very Low" in other aspects. The authors further classify the participants who meet such criteria in the "Pure Category" or primary love language. This study identified 62 participants as having a primary love

language. This means that there is an increase compared to the previous research, even though the significantly higher sample size in the current research must be considered.

The consistency of the current research findings leads the authors to conclude that the Likert scale indeed resulted in ordinal data. Therefore, the measurement results would always be the form of ranking or categorical levels (Subedi, 2016; Sullivan & Artino Jr., 2013). The Likert scale is useful to determine the level of an individual's love language in each aspect. When the authors sought to use the FLL instrument to determine an individual's primary love language, however, the more suitable scale is the ipsative scale that was initially used by Chapman (2010).

The authors also suspect that this finding relates to the response style of the participants in the study. Liu, Harbaugh, Harring, and Hancock (2017) found that an individual who responds with extreme response style can negatively affect the model fit. This explains the findings from confirmatory factor analysis that did not find goodness of fit in the five initial concepts of love languages by Chapman. Individuals who tend to respond in the opposite "Feeling Highly Loved" (data skewed leftward) caused the model being analyzed to be unfit with the model hypothesized.

Even so, the authors persisted in attempting to reexamine the data from the Pure Category. Like the previous research, there were 17 male respondents who had the primary love language of Words of Affirmation. By contrast, there were only 14 female respondents with the same love language (see Table 10). This is consistent with the previous findings (Surijah & Septiarly, 2016; Surijah & Sari, 2018), which found that male samples had a higher frequency in the primary love language of Words of Affirmation compared to their female counterparts.

Henderlong and Lepper (2002) proposed that men and women give different responses towards praise. Women are more likely to take the negative side of praise. This is because many societies, including in Indonesia, still regard women as having lower standing compared to men. When receiving praise, particularly from the opposite sex, women tend to feel as evaluated or that the man giving praise is putting himself higher than the women given the praise.

Conversely, men are perceived as independent, reliable, and focused on achievements (Henderlong & Lepper, 2002). Society tends to put higher expectations on men. Therefore, when men receive praise for their achievements or success, they tend to receive the praise well and feel proud because they have met the expectation of others.

Previous research found Words of Affirmation as the dominant primary love language (Surijah & Septiarly, 2016). Other studies indicated that the dominant primary love language on adolescent samples is Acts of Service (Surijah et al., 2017). In the current research, the primary love language with the highest frequency is Quality Time (n = 4; 37.36%). More specifically, the Quality Time love language is more frequently found in female samples (n = 22).

This finding demonstrates that Quality Time is an important component for an individual to feel loved. Research has shown that as a relationship progresses, the amount of time spent together by a spousal couple eventually increases (Voorpostel et al., 2010). The concept of "cohesion" (doing an activity with one's partner) is one of the factors that determine the satisfaction in a marriage (Ward, Lundberg, Zabriskie, & Berrett, 2009). The time spent together by couples in the form of vacations or recreational activities can become a strategy to overcome the potential of marital problems and increase marital satisfaction (Sharaievska, Kim, & Stodolska, 2013). Another study suggested that vacation time and spending time together with a partner can predict a decrease in conflict and an increase in spousal love (Claxton & Perry-Jenkins, 2008).

Further, the authors suspect that different instruments may yield different findings. The authors believe that the latest instrument has high validity and is superior to the previously utilized FLL scale. This encourages the authors to draw a conclusion that further research is needed to find consistency in findings, either through replication of research or exploration of love languages on samples with different characteristics.

Limitations of Research and Recommendations. This research is the authors' attempt to improve the research quality on the validation of the love language concept. The authors used a renewed instrument and achieved satisfactory results. However, this research is similar with the previous research that used samples in the age range of 18 to 20. Subsequently, future research should involve samples from more mature age groups, particularly individuals that already have had longer, more mature relationships or those who are already married.

The attempt on the validation of love language could also involve sources of relational proof to other variables such as attachment styles and more innovative methods such as physiological measurements (Hou et al., 2016; Langeslag & van Strien, 2016). This will enrich and give a deeper perspective on the concept of love language. A different approach is also needed as the continuation of internal structure analysis (factor analysis) on this concept.

The love language of "sacrificial love" is a unique finding of this research. Subsequent research could perform deeper validation by rewriting the items that constructed this aspect, focusing on the sacrificial components contained in the aspect. An example of an item statement in such aspect measurement is "I feel loved when my partner voluntarily helps me overcome a problem." Moreover, subsequent research could also perform comparative validation testing on the new items in "Sacrificial Love" element and items that come from the combination of "Acts of Love" and "Receiving Gifts" elements. Future research could also add other detailed aspects from the concept of "sacrifice" in the context of romantic relationship such as "approach/avoidance" motive of sacrifice (Mattingly, 2007).

Qualitative research could also enrich the conceptual understanding of "sacrificial love." A descriptive phenomenological research could uncover various types of sacrifices that make individuals feel loved. Thus, the rewriting of new measurement items should consider such qualitative research, in addition to combining the items from previous studies.

Subsequent research could also reexamine the use of the term "sacrificial love." This relates to the passive and active expressions of love. Validation and relation between love expressions that contain sacrifice are needed to determine whether they relate to the feeling of being loved when receiving act of sacrifice.

5. Conclusion

This research is a reexamination of the five factors that construct the Five Love Languages (FLL), using a scale translated from the research by Polk and Egbert (2013). Based on the research conducted, the authors conclude that the new instrument yielded supportive data for the series of attempt to validate the construct of FLL. The adapted and modified instrument had a composition of items of which none was dropped due to low factor loading.

However, EFA findings indicated that the components constructing Receiving Gift and Acts of Service could be combined into one coherent component. This component was then termed "sacrificial love." From the findings, the authors conclude that the love language components in the context of this research are comprised of four aspects. This is different from the initial concept by Chapman (2010), which stated that there were five aspects that make an individual feel loved. This research found that individuals who were part of the research sample feel loved when their partners perform an act of sacrifice. The four aspects as the findings of this research are 1) Sacrificial Love, 2) Words of Affirmation, 3) Physical Touch, and 4) Quality Time.

Ultimately, this research aims to become a reference for practitioners and couples to better understand the feelings and experiences of being loved by one's partner. Validation on the concept of love languages has led the authors to conclude that individuals feel loved when they receive treatments from their partners in the form of praise or positive comments, physical touch, and the opportunity to spend time together. Additionally, treatments in the form of sacrifices of time and effort can also make individuals feel loved.

References

Chapman, G. (2010). *The 5 love languages: The secret to love that last*. Chicago: Northfield Publishing.

Claxton, A. & Perry-Jenkins, M. (2008). No fun anymore: Leisure and marital quality across the transition to parenthood. *Journal of Marriage and Family, 70*, 28-43. doi: 10.1111/j.1741-3737.2007.00459.x

Cook, M., Pasley, J., Pellarin, E., Medow, K., Baltz, M., dan Buhman-Wiggs, A. (2013). Construct validation of the five love languages. *Journal of Psychological Inquiry, 18*, 50-61.

Curran, M. A., Burke, T.J., Young, V. J., & Totenhagen, C.J. (2016). Relational sacrifices about intimate behavior and relationship quality for expectant cohabitors. *Marriage & Family Review, 52*, 442-460. doi: 10.1080/01494929.2015.1113225

Davis, J.L., Le, B., & Coy, A.E. (2011). Building a model of commitment to the natural environment to predict ecological behavior and willingness to sacrifice. *Journal of Environmental Psychology, 31*, 257-265. doi: 10.1016/j.jenvp.2011.01.004

Egbert, N., & Polk, D. (2006). Speaking the language of relational maintenance: A validity test of Chapman's (1992) five love languages. *Communication Research Reports, 23*, 19-26. doi: 10.1080/17464090500535822

Englert. (2010). Ipsative tests: Psychometric properties. Accessed on May 5, 2017 from http://oprablog.wordpress.com/2010/10/27/ipsative-tests.

Fischer, R. & Schwartz, S. (2011). Whence differences in value priorities? Individual, cultural, or artifactual sources. *Journal of Cross-Cultural Psychology, 42*, 1127-1144. doi: 10.1177/0022022110381429

Hanel, P.H.P., & Vione, K.C. (2016). Do student samples provide an accurate estimate of the general

public? *PLoS ONE, 11*, e0168354. doi: 10.1371/journal.pone.0168354

Hayes, J.A. (2013). "Well I got a few of my own": Therapists' reactions to attraction, sex, and love in psychotherapy. *Journal of Clinical Psychology, 70*, 119-122. doi: 10.1002/jclp.22063

Henderlong, J., & Lepper, M. (2002). The effects of praise on children's intrinsic motivation: A review and synthesis. *Psychological Bulletin, 128,* 774–795. doi: 10.1037/0033-2909.128.5.774

Hendrick, C., & Hendrick, S.S. (1986). A theory and method of love. *Journal of Personality and Social Psychology, 50*, 392-402. doi: 10.1037/0022-3514.50.2.392

Hendrick, C., Hendrick, S.S., & Dicke, A. (1998). The love attitudes scale: Short form. *Journal of Social and Personal Relationships, 15*, 147-159. doi: 10.1177/0265407598152001

Hou, J., Chen, X., Liu, J., Yao, F., Huang, J., Ndasauka, Y., … Fang, X. (2016). How does adult attachment affect human recognition of love-related and sex-related stimuli: An ERP study. *Frontiers in Psychology, 7*, 596. doi: 10.3389/fpsyg.2016.00596

Hu, L. T., & Bentler, P. M. (1999). Cut off criteria for fit indexes in covariance structural analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal, 6,* 1-55. doi: 10.1080/10705519909540118

Johnson, R. A., & Wichern, D. W. (2007). Applied Multivariate Statistical Analysis. (6th ed.). Prentice Hall, New York doi: 10.1007/978-3-540-72244-1.

Karantzas, G.C., Feeney, J.A., & Wilkinson, R. (2010). Is less more? Confirmatory factor analysis of the Attachment Styles Questionnaires. *Journal of Social and Personal Relationships, 27*, 749-780. doi: 10.1177/0265407510373756

Kline, P. (1970). The validity of the brook reaction test. *British Journal of Clinical Psychology, 9*, 42-45. doi: 10.1111/j.2044-8260.1970.tb00636.x

Kline, P. (1994). An easy guide to factor analysis. New York: Routledge. doi: 10.4324/9781315788135

Langeslag, S.J.E., & van Strien, J.W. (2016). Regulation of romantic love feelings: Preconceptions, strategies, and feasibility. *PLOS ONE, 11*, e0161087. doi: 10.1371/journal.pone.0161087

Liu, M., Harbaugh, A.G., Harring, J.R., & Hancock, G.R. (2017). The effect of extreme response and non-extreme response styles on testing measurement invariance. *Frontiers in Psychology, 27*, 1-15. doi: 10.3389/fpsyg.2017.00726

Louie, K. (2014). Chinese masculinity studies in the twenty-first century: Westernizing, Easternizing and globalizingwenandwu. *NORMA: International Journal for Masculinity Studies, 9*(1), 18–29. doi: 10.1080/18902138.2014.892283

Luciano, E.C., & Orth, U. (2017). Transitions in romantic relationships and development of self-esteem. *Journal of Personality and Social Psychology, 112*, 307-328. doi: 10.1037/pspp0000109

MacCallum, R.C., Widaman, K.F., Zhang, S., & Hong, S. (1999). Sample size in factor analysis. *Psychological Methods, 4*, 84-99. doi: 10.1037/1082-989X.4.1.84

Marsh, H.W., Balla, J.R., & McDonald, R.P. (1988). Goodness-of-fit indexes in confirmatory factor analysis: The effect of sample size. *Psychological Bulletin, 103*, 391-410. doi: 10.1037/0033-2909.103.3.391

Matthews, G., & Oddy, K. (1997). Ipsative and normative scale in adjectival measurement of personality: Problem of bias and discrepancy. *International Journal of Selection and Assessment, 5*, 169-182. doi: 10.1111/1468-2389.00057

Mattingly, B.A. (2007). The effects of sacrifice types and motives on romantic relationship quality. *The New School Psychology Bulletin, 5*(2), 27-30. doi: 10.1037/e741502011-004

Miller, J.A. (2007). Repeated evolution of male sacrifice behavior in spiders correlated with genital mutilation. *Evolutions, 61*, 1301-1315. doi: 10.1111/j.1558-5646.2007.00115.x

Murthy, K., Rotzien, A., & Vacha-Haase, T. (1996). Validity studies second-order structure underlying the Hendrick-Hendrick Love Attitudes Scale. *Education and Psychological Measurement, 56*, 108-121. doi: 10.1177%2F0013164496056001007

Neto, F., & Menezes, A.P. (2014). Psychometric properties of the Portugese version of the Compassionate Love for Close Others and Humanity Scale among Older People. *Educational Gerontology, 40*, 458-467. doi: 10.1080/03601277.2013.852924

Oliner, S. (2002). Extraordinary acts of ordinary people: Faces of heroism and altruism. *S. G. Post, L. G. Underwood, J. P. Schloss, & W. B. Hurlburt (Eds.), Altruism and altruistic love: Science, philosophy, and*

religion in dialogue. Oxford, England: Oxford University Press. doi: 10.1093/acprof:oso/9780195143584.003.0012

Østerås, N., Gulbrandsen, P., Garratt, A., Benth, J.Š., Dahl, F.A., Natvig, B., & Brage, S. (2008). A randomised comparison of a four- and a five-point scale version of the Norwegian Function Assessment Scale. *Health and Quality of Life Outcomes, 6*, 14. doi: 10.1186/1477-7525-6-14

Otto, P.E. & Bolle, F. (2011). Multiple facets of altruism and their influence on blood donation. *The Journal of Socio-Economics, 40*, 558-563. doi: 10.1016/j.socec.2011.04.010

Pearson, R.H., & Mundform, D.J. (2010). Recommended sample size for conducting exploratory factor analysis on dichotomous data. *Journal of Modern Applied Statistical Methods, 9*, 359-368. doi: 10.22237/jmasm/1288584240

Peterson, R.A. & Merunka, D.R. (2014). Convenience samples of college students and research reproducibility. *Journal of Business Research, 67*, 1035-1041. doi: 10.1016/j.jbusres.2013.08.010

Polk, D.M. & Egbert, N. (2013). Speaking the languages of love: On whether Chapman's (1992) claims stand up to empirical testing. *The Open Communication Journal, 7*, 1-11. doi: 10.2174/1874916x20130423001

Post, S.G. (2002). The tradition of agape. In S.G. Post, L.G. Underwood, J. P. Schloss, & W. B. Hurlburt (Eds.), *Altruism and altruistic love: Science, philosophy, and religion in dialogue*. Oxford, England: Oxford University Press. doi: 10.1093/acprof:oso/9780195143584.003.0006

Rammstedt, B., & John, O.P. (2007). Measuring personality in one minute or less: A 10-item short version of the Big Five Inventory in English and German. *Journal of Research in Personality, 41*(1), 203-212. doi: 10.1016/j.jrp.2006.02.001

Sailor, J.L. (2013). A phenomenological study of falling out of romantic love. *The Qualitative Report, 18,* 1-22. Retrieved from https://nsuworks.nova.edu/tqr/vol18/iss19/1

Shahrazad, W., Hoesni, S.M., & Chong, S.T. (2012). Investigating the factor structure of the Love Attitude Scale with Malaysian sample. *Asian Social Science, 8*, 66-73. doi:10.5539/ass.v8n9p66

Sharaievska, I., Kim, J., & Stodolska, M. (2013). Leisure and marital satisfaction in intercultural marriages. *Journal of Leisure Research, 45*, 445-465. doi: 10.18666/jlr-2013-v45-i4-3894

Sober, E. (2002). The ABCs of altruism. *S. G. Post, L. G. Underwood, J. P. Schloss, & W. B. Hurlburt (Eds.), Altruism and altruistic love: Science, philosophy, and religion in dialogue*. Oxford, England: Oxford University Press. doi: 10.1093/acprof:oso/9780195143584.003.0003

Sober, E., & Wilson, D.S. (1998). Unto others: The evolution and psychology of unselfish behavior. Cambridge, Massachusetts: Harvard University Press. doi: 10.1016/s1090-5138(99)00020-3

Subedi, B.P. (2016). Using Likert type data in social science research: Confusion, issues, and challenges. International *Journal of Contemporary Applied Sciences, 3*, 36-49. Retrieved from http://www.ijcar.net/assets/pdf/Vol3-No2-February2016/02.pdf

Sullivan, G.M., & Artino Jr., A.R. (2013). Analyzing and interpreting data from Likert-type scales. *Journal of Graduate Medical Education, 5*, 541-542. doi: 10.4300%2FJGME-5-4-18

Surijah, E.A., Ratih, S.K.A., & Anggara, I.M.F. (2017). Merasa dicintai saat dibantu: Penelitian survey deskriptif "five love languages". *Psikodimensia, 16*, 49-61. doi: doi.org/10.24167/psiko.v16i1.946

Surijah, E., & Sari, K. (2018). Five Love Languages and Personality Factors Revisited. *ANIMA Indonesian Psychological Journal, 33*(2), 71-87. doi:10.24123/aipj.v33i2.1579

Surijah, E.A. & Septiarly Y.L. (2016). Construct validation of five love languages. *Anima Indonesian Psychological Journal, 31*, 65-67. doi: 10.24123/aipj.v31i2.565

Tjeltveit, A. (2006). Psychology's love-hate relationship with love: Critiques, affirmations, and Christian responses. *Journal of Psychology and Theology, 34*(1), 8-22. doi: 10.1177%2F009164710603400102

Treiblmaier, H., & Filzmoser, P. (2009). Benefits from using continuous rating scales in online survey research. Retrieved June 5, 2016 from www.statistik.tuwien.ac.at/forschung/ SM/ SM-2009-4complete.pdf.

Vassiliadou, D. (2017). The idiom of love and sacrifice: Emotional vocabularies of motherhood in nineteenth-century Greece. *Cultural and Social History, 14*(3), 283-300. doi: 10.1080/14780038.2017.1312190

Viejo, C., Ortega-Ruiz, R., Sánchez, V. (2015). Adolescent love and well-being: The role of dating relationships for psychological adjustment. *Journal of*

Youth Studies, 18, 1219-1236. doi: 10.1080/13676261.2015.1039967

Voorpostel, M., van der Lippe, T., & Gershuny, J. (2010). Spending time together – changes over four decades in leisure time spent with a spouse. *Journal of Leisure Research, 42*(2), 243-265. Retrieved from https://www.nrpa.org/globalassets/journals/jlr/2010/volume-42/jlr-volume-42-number-2-pp-243-265.pdf

Ward, P. J., Lundberg, N. R., Zabriskie, R. B. & Berrett, K. (2009). Measuring marital satisfaction: A comparison of the Revised Dyadic Adjustment Scale and the Satisfaction with Married Life Scale. *Marriage & Family Review, 45*, 412-429. doi: 10.1080/01494920902828219

Young, V. J., & Curran, M. A. (2016). Intimacy behaviors and relationship satisfaction for cohabitors: Intimate sacrifices are not always beneficial. *The Journal of Psychology: Interdisciplinary and Applied, 150*(6), 779-792. doi: 10.1080/00223980.2016.1187110

Appendix

Appendix 1. FLL Scale Items in Bahasa Indonesia

No.	Pernyataan
1	Pasangan saya memuji saya.
2	Pasangan saya mendengarkan saya dengan sungguh-sungguh.
3	Pasangan saya mengerjakan tugas milik saya
4	Pasangan saya memberikan saya hadiah ulang tahun yang istimewa.
5	Pasangan saya memeluk saya.
6	Pasangan saya memberitahu saya bahwa ia menyayangi saya.
7	Pasangan saya menghabiskan waktu dengan melakukan kegiatan yang kami sukai bersama-sama.
8	Pasangan saya menyelesaikan tugas milik saya ketika saya tidak memiliki waktu untuk mengerjakannya.
9	Pasangan saya memberi kartu ucapan selamat untuk saya.
10	Pasangan saya mencium saya.
11	Pasangan saya memberikan pujian kepada saya untuk hal baik yang saya lakukan
12	Pasangan saya menyempatkan diri untuk bertemu dengan saya di tengah kesibukannya.
13	Pasangan saya membantu meringankan tugas saya ketika saya membutuhkan bantuan.
14	Pasangan saya memberi saya hadiah ketika tidak ada acara khusus.
15	Pasangan saya menggenggam tangan saya.
16	Pasangan saya sering mengucapkan kalimat romantis seperti “I Love You.”
17	Pasangan saya menghabiskan waktu luang bersama saya.
18	Pasangan saya membantu membersihkan barang-barang milik saya
19	Pasangan saya memberi saya hadiah sederhana ketika pasangan saya kembali dari bepergian
20	Pasangan saya menyentuh tangan saya.
21	Pasangan saya memberikan komentar positif tentang saya.

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