

Popular Psychology versus Scientific Evidence: Love Languages' Factor Structure and Connection to Marital Satisfaction

Edwin Adrianta Surijah^{1,2}, Ni Made Mitha Prasetyaningsih², Supriyadi³

¹Faculty of Health, School of Psychology and Counselling, Queensland University of Technology (QUT), Brisbane, Qld, Australia

²Fakultas Ilmu Kesehatan, Sains, dan Teknologi, Program Studi Psikologi, Universitas Dhyana pura, Jalan Raya Padang Luwih, 80361, Badung, Bali, Indonesia

³Fakultas Kedokteran, Program Studi Psikologi, Universitas Udayana, Gedung FK Unud, Lantai I Jl. PB Sudirman, Denpasar 80232, Bali, Indonesia
e-mail: edwin@adrianta.com

Abstract

Love is an essential part of human experience and love languages have been studied to validate its factors' structures to explain what makes people feel loved. The current study addresses the gap that love research shall not rely on student samples and it needs to measure the actual outcome of love languages. This study aims to gather empirical evidence for love languages' factor structure and its relation to the outcome variable. The method for this study is a quantitative survey with 250 couples reported their love languages using a rating-scale and forced-choice scale. The data analysis examined the factor structure of the love languages model and estimated the association between love languages compatibility and marital satisfaction. The factorial analysis showed that the five factors solution was not supported and love languages compatibility did not affect couples' marital satisfaction. This result brought discussions on how popular psychology concepts need to be under the scrutiny of scientific investigation and that different contexts may have different factors on what makes people feel loved.

Keywords: *love, love languages, marital satisfaction*

Abstrak

Cinta merupakan bagian penting dari pengalaman manusia. Bahasa cinta telah melalui riset yang menguji struktur faktor penyusun konsep tersebut untuk memahami hal yang membuat individu merasa dicintai. Studi kali ini menutup celah dari penelitian sebelumnya yang bergantung pada sampel mahasiswa serta mengukur luaran dari bahasa cinta. Penelitian ini bertujuan mengumpulkan bukti empirik faktor penyusun bahasa cinta dan hubungannya dengan variabel luaran. Penelitian menggunakan metode survei kuantitatif dengan 250 pasangan melaporkan bahasa cinta menggunakan skala *rating-scale* dan *forced-choice*. Analisis data menguji faktor penyusun model bahasa cinta serta menguji hubungan antara kesesuaian bahasa cinta dan kepuasan pernikahan. Hasil analisis faktor menunjukkan bahwa struktur lima faktor penyusun bahasa cinta tidak terdukung dan kesesuaian bahasa cinta pada pasangan tidak menentukan kepuasan pernikahan. Hasil studi ini membawa diskusi bahwa konsep psikologi populer membutuhkan kajian ilmiah yang lebih mendalam dan bahwa konteks yang berbeda dapat menghasilkan faktor penentu seseorang merasa dicintai yang berbeda pula.

Kata Kunci: cinta, bahasa cinta, kepuasan pernikahan

Introduction

There were critics questioning psychology as a science. Berezow (2012) justified that psychology is not based on rigorous scientific approaches such as utilizing clearly defined terminology, well-controlled experimental condition, or

reproducibility. Currently, there are popular psychology resources that offer self-help motivation, positive thinking, or creating happiness. The emergence of popular psychology resources tainted psychology as a science due to these resources do not have the empirical back-up to their statements.

Popular psychology or ‘pop-psych’ refers to pseudopsychological concepts, interventions, or terminology; popularized by certain figures (“pop-psych,” n.d.). The term pseudopsychological induced scientists to conduct empirical investigations to validate the popular psychological concepts. For example, there were studies to validate enneagram, a personality typology, as a counseling tool (Daniels et al., 2018; Lee, 2015). There were also reviews or critics on the highly popular ‘Seven Habits’ series (Haimes & Schneiter, 1996; Spohn, 2018). As the examples have shown, there are several key critics for the pop-psych or psychological concepts in general.

One of the critics of the scientific status of psychology is its tendency to break down the “world” into units (Mazur & Watzlawik, 2016). Personality is divided into types (Soldz & Vaillant, 1999) for example, an enneagram divides personality into nine different types (Sutton et al., 2013). Meanwhile, these personality types might not have a universal application (Gurven et al., 2013). Temperaments (Hirvonen et al., 2018) and attachment styles (Trairatvorakul, 2016) were also other psychological concepts that applied a similar approach to types or classifications. There were also classifications on sexual and gender identities (Diamond, 2002).

The Five Love Languages (FLL) falls into the two points mentioned before. It is a popular psychology concept initially coined by Chapman (2010). It also breaks down people’s experience of feeling loved into five different categories: 1) *Words of affirmation* – feeling loved due to positive appraisals, 2) *Quality time* – feeling loved when spending time together with a partner, 3) *Acts of service* – feeling loved when getting help from a partner, 4) *Receiving gift* – feeling loved through getting gifts, and 5) *Physical touch* – feeling loved because of physical contact.

The Five Love Languages gained popularity around the world. The book

written by the author were sold by the millions and being translated into 50 languages (Chapman, 2010). The Five Love Languages also became a foundation for a government-based program in Australia to enhance the relationship functioning (Bunt & Hazelwood, 2017). These examples give evidence that Five Love Languages is extremely popular despite the original author has not conducted empirical research to support the love languages model.

There were attempts to find scientific evidence for love languages. Most previous studies on love languages were divided into two groups. The first group investigated the factor structure and construct validity, while the second group examined the relationship between preferred love languages and relationship satisfaction (Bland & McQueen, 2018). For example, previous studies attempted to support and validate the five factors structure of Five Love Languages (Cook et al., 2013; Egbert & Polk, 2006; Polk & Egbert, 2013). Another example explored the relationship between love languages and self-regulatory behavior toward relationship satisfaction (Bunt & Hazelwood, 2017). Specifically, this current study is a part of a continuous endeavor to validate love languages especially in Indonesia (Surijah et al., 2017; Surijah & Septiarly, 2016), as Chapman (2010) said love languages could be applied in a multitude of contexts. Thus, the current study fills the gap from previous studies on love languages.

Love is one significant and essential domain of human life’s experience. Love is an evolutionary mechanism that shapes intelligence, interpersonal relationship, and culture (Pedersen, 2004). For example, love plays a role in suppressing mate-searching behavior and encouraging commitment which beneficial to rear children (Fletcher et al., 2015). In addition to that, failure in engaging in a love-based relationship might lead to bereavement and even precipitate death (Carter & Porges, 2013). Love is

essential and integral to our lives which makes it an interesting subject to study.

Previous studies described love as an emotional experience that involved three related components. Those three components are lust, attraction, and attachment (Seshadri, 2016). The three components evolved as initially labeled as intimacy, passion, and commitment (Sternberg, 1997). The inter-relation between the three components could create sub-types called “*six basic love styles: eros (passionate love); ludus (game-playing love); storge (friendship love); pragma (logical, "shopping list" love); mania (possessive, dependent love); and agape (all-giving, selfless love)*” (Hendrick & Hendrick, 1986). As an underline, love covers a broad range of sexual arousal, physical attraction, and deep emotional feeling.

Love languages offered a different angle on its approach toward understanding love. Previous theories give a snapshot of the current experience of love (e.g. Yela, 2006). For example, people reported they experience a fully committed relationship with their partner. Love languages, on the contrary, explain why people would feel loved and it believes that there are five factors to make people feel loved. Compared to other theories, love languages may offer the possibility to understand how to make people feel loved rather than merely knowing the present state of love.

Chapman (2010) asserted that when someone's love languages are fulfilled, people will be in equilibrium. He illustrated that each individual has ‘*love tanks*’ that need to be filled to keep people in a homeostatic state. For example, someone with a high need for *physical touch* requires to receive physical affection from their partner. Thus, a compatible/ matched couple and knowing how to fill a partner's *tank* is essential to a positive relationship.

Empirical studies on love languages had been done; however, there were limitations. One of the prominent

shortcomings was reliance on using student samples from various higher-degree institutions in Bali, Indonesia (e.g., Surijah et al., 2019). Student samples have a drawback as it may not reflect the general population and may cause replication problems (Hanel & Vione, 2016). Validation studies on love languages were also limited to the internal consistency or testing of the scale's structure (e.g. Surijah & Septiarly, 2016). Thus, the current study needs to improve the participants' representativeness and the methodological approach.

The present study improved the research process by getting engaged with married couples as participants to report their love languages. The married participants were from Bali, Indonesia to allow comparability with the previous study (Surijah & Kirana, 2020). In addition to testing the love languages' factors, the present study also investigated the outcome of love languages toward marital relationships. One of the most distinguished outcomes of the marital relationship is marital satisfaction (Abe & Oshio, 2018; Jackson et al., 2017) hence this study will focus on marital satisfaction as an outcome variable. This approach allows the present study to examine love language compatibility's influence on relationship quality.

The compatibility measurement used a forced-choice rating scale. Previous studies used a Likert scale (Surijah & Septiarly, 2016) or a rating scale (Egbert & Polk, 2006) to measure the FLL. Likert and rating scales could not determine one's dominant love language as the scales only measured the degree of agreement or level of love languages for each aspect. An ipsative scale would be beneficial as it allowed participants to choose one dominant aspect among the other aspects of the FLL (Polk & Egbert, 2013). This current study observed couples' love language compatibility and how it would correlate with marital satisfaction.

This study aims to provide empirical evidence for love languages. It hypothesizes that: (1) love languages have five factors solution as proposed by Chapman (2010) and (2) couples who have matched love languages will have higher marital satisfaction compared to those who do not match. This study aims to bring empirical support for the love languages model and to bring a potential clinical implication to help couples enhance their marital satisfaction through communicating their love languages.

Methods

This study is a quantitative survey with which the participants would report their love languages and the outcome variable. The outcome variable in this study is marital satisfaction. This study then investigated the impact of love languages on the outcome.

Procedures and Participants

This study addresses the critics on engaging student samples as participants (Hanel & Vione, 2016). This study was getting married couples as participants to better reflect intimate relationships. Due to large numbers of the population, the average sample size for the population with confidence interval = 5 and 95% confidence level is between 300-400 participants. These numbers were estimated by a sample size calculator (<https://www.statisticssolutions.com/sample-size-for-populations.html>). The authors chose to use 250 couples as a quoted number of participants. Power analysis for five groups one-way ANOVA with 250 sample participants equal to 1.000 (> .80) which is above the common standard.

The previous study suggested that there was a steep incline in marital satisfaction during the first years of marriage and an effect of cohort experience toward marriage (VanLaningham et al., 2001). We then decided to narrow down participants' marital duration between 1 to

10 years of marriage. We looked for married couples and visited the married couples' houses, which had been married for one to ten years. We briefed the married couples and asked for their verbal consent if they agreed to be the participants. Married couples were given the freedom to voluntarily joined the research as participants or to decline the offer. Filling in the questionnaires was also considered as consent to participate in the study. We decided not to use separate informed consent to enhance the privacy of the participants as well. In the end, 250 couples from Bali, Indonesia joined to be participants of this study. Table 1 outlines the breakdown of participants' marital duration.

Instruments

The Adapted Five Love Languages (FLL) scale was used to measure the Five Love Languages (Suriyah & Kirana, 2020). The scale has 21-items with ten points rating scale (1=*Not Feeling Loved* to 10=*Feeling Loved*). Each aspect of FLL has a good reliability coefficient with Cronbach's α ranging from .813 (receiving gift) to .903 (physical touch). The questionnaire has one cue on the top of the page: "*I tend to feel loved when...*" (*Saya cenderung merasa dicintai ketika...*) and followed by short sentences such as: "*my partner hug me.*" (*pasangan saya memeluk saya*). The scale was in Bahasa Indonesia.

Table 1
Participants Marital Duration

Years	Couple	Percentage
1	43	17.2%
2	51	20.4%
3	39	15.6%
4	19	7.6%
5	23	9.2%
6	12	4.8%
7	15	6.0%
8	12	4.8%
9	13	5.2%
10	23	9.2%
Total	250	100%

Moreover, this study added a forced-choice scale of FLL (Polk & Egbert, 2013). Participants were 'forced' to pick one out of five available statements. Each statement represents different love languages and it has two different instructions. Participants gave responses on how they tend to feel loved by their partner for the first instruction. In the second round, participants rated how they express their love. This scale will be used to assess consistency between the rating scale and the forced-choice scale.

Results from the forced-choice scales were also categorized into three clusters: *matched*, *partially-matched*, and *mismatched*. The *matched* category was for couples who received and expressed similar love languages. For example, the husband and wife had chosen *physical touch* on both the forced-choice scale version. The *partially-matched* was for couples whom one of the partners received and expressed similar love languages. For example, a husband felt loved through *physical touch* and his wife expressed love through *physical touch*. Meanwhile, the wife felt loved through *words of affirmation* but her husband showed love through *acts of service*. The *mismatched* is given to couples who both did not receive and express similar love languages.

The third scale in this study is Satisfaction with Married Life (SWML) to measure marital satisfaction (Ward et al., 2009). This scale is an adapted version of the Satisfaction with Life Scale (Diener et al., 1985) which has five items. Participants rated their degree of agreeableness on a seven points rating scale. Item example is: "*in most ways, my married life is close to my ideal.*" The scale was proven to be reliable with Cronbach's $\alpha = .958$. Factor analysis showed that SWML had a single factor with each item had a factor loading ranging from .887 to .957 (Ward et al., 2009). We translated the scale into Bahasa Indonesia and asked two researchers from the field of psychology

and English literature to annotate the translated scale. The revised scale was combined with the other scales and got ready for a pilot study. Thus, SWML was suitable to measure the outcome of love languages.

Before the actual data gathering, we conducted a pilot study on forty-five pairs of married couples to fill in the FLL rating scale and SWML. Pilot study result showed a good overall reliability for each aspect of the FLL rating scale (Cronbach's α for each FLL aspect: words of affirmation = .848; quality time = .846; acts of service = .881; receiving gift = .868; and physical touch = .898). SWML scale also obtained Cronbach's $\alpha = .883$. In general, the pilot study showed that all scales were reliable to be used in this study.

We used Confirmatory (CFA) and Exploratory Factor Analysis (EFA) to examine the internal consistency of the FLL. CFA tested five-factor structures of FLL by using IBM SPSS Amos 25.0.0 statistical program. If the five-factor structures were not supported, EFA took part to explore how the FLL factors are composed. To investigate the consistency between the FLL rating scale and the forced-choice scale, we utilized one way ANOVA. This test would allow authors to observe if someone chose *physical touch* on the forced-choice scale, whether the rating scale would also show significant mean differences among the five aspects of rating scales. One way ANOVA was also used to estimate mean differences of marital satisfaction among the matched, partially-matched and mismatched categories explained before.

Results and Discussions

Table 2 exhibits the descriptive statistics of each scale measurements. The descriptive data shows the mean, standard deviation, minimum score, and maximum score for each aspect of love languages and marital satisfaction. Table 2 also outlines each value grouped by husbands' and

Table 2
Descriptive Data of FLL Aspects and Marital Satisfaction

Aspect		Number of Participants	Lowest Score	Highest Score	Average (Mean)	Standard Deviation
<i>Words of Affirmation</i> (WoA)	Total	500	10	50	42.39	6.818
	Husband	250	10	50	42.73	6.474
	Wife	250	10	50	42.06	7.143
<i>Quality Time</i> (QT)	Total	500	9	40	34.12	5.401
	Husband	250	9	40	34.41	5.175
	Wife	250	9	40	33.83	5.613
<i>Acts of Service</i> (AoS)	Total	500	4	40	32.69	6.093
	Husband	250	4	40	33.09	5.745
	Wife	250	5	40	32.29	6.408
<i>Receiving Gifts</i> (RG)	Total	500	4	40	31.34	7.246
	Husband	250	4	40	31.48	7.083
	Wife	250	4	40	31.20	7.417
<i>Physical Touch</i> (PT)	Total	500	5	40	34.61	5.293
	Husband	250	5	40	34.68	5.128
	Wife	250	6	40	34.54	5.462
SWML	Total	500	5	35	28.77	4.484
	Husband	250	6	35	29.044	4.193
	Wife	250	5	35	28.496	4.742

wives' scores. The average total scores for each aspect of love languages were ranged from 31.20 to 34.61 except *words of affirmation* which had the average total score equal to 42.39 (SD = 6.81). The average total score for marital satisfaction was 28.77 (SD= 4.48).

CFA result showed that the hypothesized model was not fit. Chi-squared test result was $\chi^2 = 1284.237$; $df = 179$; and $p < .05$. Furthermore, other indicators were supporting the notion with RMSEA = .111; GFI = .792; AGFI = .731; and CFI = .868. Even when the authors tried to look at the modification indices and re-arrange the covariances of the unobserved variables, the CFA result did not show significant changes. It means the confirmatory factor analysis showed that the five-factor structures of the five love languages were not supported.

The next step was exploring the factor structures of the love languages by using exploratory factor analysis. *Bartlett's Test of Sphericity* and *Kaiser Meyer Olkin Measure of Sampling Adequacy* (KMO MSA) were done before the EFA. Bartlett's

Test result was .000, which means all the correlation matrices were significant. KMO result was .947 with each item was greater than .05 which means all items can be included in EFA. The result of EFA is displayed in table 3. Three factors solution was shown to be fit with the love languages scale. Its Eigenvalues were greater than 1.000 and those three factors explained 68.307% of the total data variance. Each item also has a good factor loading greater than .500 (except WoA1 = .493). This result showed further support to CFA analysis that the five factors of love languages did not apply to this study.

The next step of the analysis was to provide additional evidence for love languages. A one-way ANOVA was conducted to compare the effect of matched/ mismatched love languages and how they will influence the variance of marital satisfaction. To decide matched or mismatched, we used the forced-choice scale of love languages. Before data analysis, the forced-choice scale had to show variance differences between the love languages aspects. For example,

Table 3
Exploratory Factor Analysis of Love Languages Scale

Factor	Eigen Value	Percent of Variance	Items	Factor Loading
Factor 1	11.720	55.808	WoA6	.747
			WoA11	.566
			WoA16	.578
			QT2	.520
			PT5	.796
			PT10	.817
			PT15	.670
			PT20	.649
Factor 2	1.332	6.341	WoA21	.600
			QT7	.660
			QT12	.606
			QT17	.493
			AoS3	.595
			AoS8	.762
			AoS13	.818
			AoS18	.688
Factor 3	1.293	6.158	WoA1	.483
			RG4	.752
			RG9	.793
			RG14	.802
			RG19	.644

participants who chose *words of affirmation* must score higher on the *words of affirmation* rating scale as well. To test this assumption, we analyzed the variance between the forced-choice scale and the rating scale. Table 4 displays the analysis' result.

Table 4 showed that the effect of the forced-choice scales on the scores of the love languages rating scale was significant but one aspect. On *receiving gifts*, participants who chose their love languages is *receiving gifts* did not explain the variance in the love languages rating scale with $F(4, 495) = 2.389$; $p = .50$. This result suggested that the forced-choice scale on this particular aspect did not reflect their rating scale response. Post-hoc comparison using Tukey HSD test did not show a unanimous result. Mean score of the WoA rating scale for the WoA group were significantly different compared to the QT ($p = .003$) and PT group ($p = .002$) but were not significantly different to AoS ($p = .401$) and RG group ($p = 1.000$). The mean score of the QT rating scale for the QT group was only significantly different compared to the

WoA group ($p = .025$). The mean score of the AoS rating scale for the AoS group was only significantly different compared to the PT group ($p = .022$). Finally, mean score of PT rating scale for PT group were significantly different compared to WoA ($p = .001$) and RG group ($p = .036$) meanwhile it was not significantly different to QT ($p = .459$) and AoS group ($p = .303$). These results show that participants who chose one particular type of love language tended to respond distinctively on the rating scale when they are compared to participants from other groups.

The next part of the analysis was observing how the love languages matched/unmatched status would affect marital satisfaction. One-way ANOVA was conducted with husbands' or wives' marital satisfaction as the explained variable and the three categories as the factor. The matching status of love languages did not explain the variance of wives' marital satisfaction with $F(2, 249) = .823$; $p = .441$. Similar result also occurred for husbands' marital satisfaction with $F(2, 249) = .084$; $p = .920$. These showed that love language

Table 4
Forced Choice Scale Effects on the Rating Scale Variance

Rating Scale		df	F	Sig.
Words of Affirmation	Between Groups	4	6.419	.000
	Within Groups	495		
Quality Time	Between Groups	4	3.887	.004
	Within Groups	495		
Acts of Service	Between Groups	4	4.687	.001
	Within Groups	495		
Receiving Gifts	Between Groups	4	2.389	.050
	Within Groups	495		
Physical Touch	Between Groups	4	6.971	.000
	Within Groups	495		

compatibility between partners/ couples did not affect the couples’ marital satisfaction.

The purpose of this study is to look for empirical evidence of five love languages and factor analysis showed that the concept was not consistently supported. First, CFA dismissed the five factors solution of the love languages. EFA revealed further that the three factors model was a better fit for love languages. This result did not support the first hypothesis of this study. This finding is a contrast stark to previous researches, which supported the five factors solution (Cook et al., 2013; Egbert & Polk, 2006). However, previous studies in Indonesia demonstrated a similar pattern of rejecting the five factors model of love languages (Suriyah & Kirana, 2020; Suriyah & Septiarly, 2016).

This disagreement can be attributed to the cross-cultural variation of love expression or in this case of feeling loved. Chapman (2010) initially justified that love language is a universal construct and well-received in various countries. However, studies regarding love expression showed that each cultural background or country had a different emphasis on emotional expression (Gareis & Wilkins, 2011; Kline et al., 2008; Wilkins & Gareis, 2006). This cultural differentiation implied that love languages might have different shapes in a different context. In the context of the original author, there may be five different factors that make people feel loved. This

study, however, suggested that there may be three factors of love languages in its context.

One of the distinct factors that made people feel loved in this study’s context is ‘intimacy.’ Factor 1 in table 3 consisted of items from *physical touch* (e.g. *Pasangan saya memeluk saya/ My partner hug me*) and *words of affirmation* (e.g. *Pasangan saya memberitahu saya bahwa ia menyayangi saya/ My partner tells me that they love me*). Those items display a great deal of intimacy using verbal or physical expression. Intimacy is one of the components of love defined as “feelings of closeness, connectedness, and bondedness in a close relationship” (Sternberg, 1986) and it is closely associated with the passionate romantic relationship which involves physical connection (Aykutoğlu & Uysal, 2017). Those items in factor 1 when combined illustrated the feeling of closeness through an intimate verbal and physical exchange. Intimacy is a far-reaching component of human life. Intimacy or affectionate behaviors were desired within committed relationships and even on casual sex encounters (Garcia et al., 2018). Intimacy also might increase sexual desire and there was no difference between male or female partners (van Lankveld et al., 2018). Not only restricted to a romantic relationship, but intimacy also took part in friendship (Wood et al., 2017). Looking at the role that intimacy

had for human relationships, it is expected that intimacy makes people feel loved.

The second factor in what makes people feel loved is 'sacrifice.' Factor 2 in table 3 consisted of items from *quality time* (e.g. *Menghabiskan waktu dengan melakukan kegiatan yang kami sukai bersama-sama/ Spending time doing something we both like*) and *acts of service* (e.g. *Pasangan saya membantu membersihkan barang-barang milik saya/ My partner helps me to keep things clean up*). Those items showed different kinds of sacrifices such as time sacrifice (*spending time*) and energy sacrifice (*cleaning up*). Sacrifice is an integral part of a close relationship and had been investigated as a predictor of relationship satisfaction (Curran et al., 2016; Ruppel & Curran, 2012). Thus, in this study, feeling loved can be achieved when an individual perceives the acts of relational sacrifice were made.

The third factor was similar to the initial aspect that is 'receiving a gift.' It is because factor 3 in table 3 was primarily composed of *receiving gifts* items. Gift-giving is a way to express love (Beichen & Murshed, 2015; Cheal, 1987). It shows the long-standing value of gifts as the way someone exhibits affection and in turn, makes people feel loved while receiving the gift.

The second significant finding was that there was no relationship between love languages' compatibility and marital satisfaction. This relationship was initially intended to show empirical evidence on whether the concept matched other specific measurements. Results suggested marital satisfaction was not influenced by the compatibility of the love languages. As Bunt and Hazelwood (2017) found in their study, love languages' effectiveness was dependent on self-regulatory behavior. Marital satisfaction for couples with matched love languages did not differ with partially matched or mismatched couples in this current study. This finding proves that love language compatibility alone were not

attributed to a higher level of marital satisfaction.

On the other hand, one of the alternative explanations was because many different factors could determine marital satisfaction. Health problems can impair marital satisfaction (Badr et al., 2018; Hershkowitz et al., 2017). The role of workload and psychological detachment also contributed to marital satisfaction (Germeys & De Gieter, 2017). In addition to that, coping styles and conflict resolution (Stinson et al., 2017) played a significant role in determining marital satisfaction. These factors show that love (languages) was not the only factor in predicting marital satisfaction. In another study on love styles and marital satisfaction, love styles did not entirely predict marital satisfaction. Among six different love styles, only Eros (*passionate love*) was associated with marital satisfaction (Gana et al., 2013). The finding supports the idea that marital satisfaction is not only built on love but also other aspects such as health status and workload. This previous study also supported the current study's findings. The previous study emphasized the role of Eros or passionate love. Factor 1 items in table 3 had the highest number of Eigenvalues and explained variance the most compared to other factors. Factor 1 involve passionate acts of love, such as hugging or saying romantic words. It shall open the possibility for future study to examine intimacy and passionate aspect of love as love languages' components and to observe how the new components influence marital satisfaction.

The result of this study can also be a critic of psychological science in general. Popular psychological studies were said to have poor reproducibility (Open Science Collaboration, 2015), which jeopardized psychology's position as a science. Critics also panned that we relied heavily on anecdotes or subjective experiences (Kraus, 2013). This research, as part of the bigger project, aims to seek empirical evidence for love languages. Future studies on this

project need to improve its methodological approach to attain higher reproducibility. For the general audience in psychology, we need to be more cautious to implement popular psychological concepts, specifically in this study is love languages.

The strength of this study compared to previous studies in validating love languages is a large pool of married couples as research participants. Previous studies relied on undergraduate students as a data source (Cook et al., 2013; Suriyah & Septiarly, 2016). Student participants mostly would rate their dating relationship. Those who at that time did not have current romantic relationships were told to imagine how they would feel loved. The differences in relationship status (dating/ married) can alter psychological attribution as it was demonstrated that relationship status affected psychological wellbeing (Dush & Amato, 2005). This study also reduces the possibility of overestimating bias when single students rated their relationship.

To fully validate or reject love languages as a construct, future studies need to improve their methodological approach. This research relied on using two types of love languages scale. A rating scale version of love languages was subjected to several validation processes; however, the forced-choice scale had limited psychometric properties. The data analysis also applied one way ANOVA. Future studies are better to stick with the rating scale version of love languages. The rating scale will provide numerical data and can be analyzed with the *actor-partner interdependence model* (APIM) as a common analysis in studying marital relationships (Conradi et al., 2017; Maroufizadeh et al., 2018). The analysis can describe the interrelation between love languages and other external variables while also illustrating the dynamics between husbands and wives.

This study also has a limitation regarding the scope of the participants. The couples joining this study came from Bali,

Indonesia. The results of this study can be influenced by the lived experience of the participants. Future studies need to address the generalization aspect of love languages research. This study involved a large number of samples; however, it was restricted to couples in Bali. The result suggested there were different components of love languages compared to the original five aspects. A careful deduction is needed by enhancing future studies to validate the love languages scale by starting to create context-specific items generation (Boateng et al., 2018). A national representative survey will also potentially give a comprehensive overview of love languages in the Indonesian context. Demographic information, such as ethnic identity and religion, is an important covariate that needs to be included to explain the participants' love languages (Bayle et al., 2017).

Conclusion

This study concluded that love languages as a construct needs further empirical evidence. Factor analysis showed five factors component of love languages were not supported. Analysis of love language compatibility between husbands and wives also did not predict marital satisfaction. These findings exhibited a weak internal consistency and relationship to the external variable. Different approaches, such as using grounded perspective for items generation or APIM as data analysis tools, are viable options for future investigation.

There is also an inference that love languages have different components as opposed to what Chapman asserted. This study identified other components of love languages such as '*intimacy*' and '*sacrificial love*.' It proposed the idea that the generalization of love language components needed further investigation and there might be a cultural-specific expression of feeling loved.

References

- Abe, S., & Oshio, A. (2018). Does marital duration moderate (dis)similarity effects of personality on marital satisfaction?. *SAGE Open – Research Paper*, 8(2). <https://doi.org/10.1177/2158244018784985>
- Aykutoğlu, B., & Uysal, A. (2017). The relationship between intimacy change and passion: A dyadic diary study. *Frontiers in psychology*, 8(2257). <https://doi.org/10.3389/fpsyg.2017.02257>
- Badr, H., Herbert, K., Bonnen, M. D., Asper, J. A., & Wagner, T. (2018). Dyadic coping in patients undergoing radiotherapy for head and neck cancer and their spouses. *Frontiers in psychology*, 9(1780). <https://doi.org/10.3389/fpsyg.2018.01780>
- Bayle, A. T., Ayalew, D. W., & Yimer, A. M. (2017). Socio-demographic determinants of marital satisfaction in Jimma Zone, Southwest Ethiopia. *International Journal of Sociology and Anthropology*, 9(10), 131-142. <https://doi.org/10.5897/IJSA2016.0689>
- Beichen, L., & Murshed, F. (2015). Culture, expressions of romantic love, and gift-giving. *Journal of International Business Research*, 14(1), 68-84.
- Berezow, A. B. (2012, July 13). *Why psychology isn't science*. Los Angeles Times. <https://www.latimes.com/opinion/la-xpm-2012-jul-13-la-ol-blowback-psycho-logy-science-20120713-story.html>
- Bland, A. M., & McQueen, K. S. (2018). The distribution of Chapman's love languages in couples: An exploratory cluster analysis. *Couple and Family Psychology: Research and Practice*, 7(2), 103-126. <https://doi.org/10.1037/cfp0000102>
- Boateng, G. O., Neilands, T. B., Frongillo, E. A., Melgar-Quinonez, H. R., & Young, S. L. (2018). Best practices for developing and validating scales for health, social, and behavioral research: A primer. *Frontiers in public health*, 6, 149-149. <https://doi.org/10.3389/fpubh.2018.00149>
- Bunt, S., & Hazelwood, Z. J. (2017). Walking the walk, talking the talk: Love languages, self-regulation, and relationship satisfaction. *Personal Relationships*, 24, 280-290. <https://doi.org/10.1111/per.12182>
- Carter, C. S., & Porges, S. W. (2013). The biochemistry of love: An oxytocin hypothesis. *EMBO reports*, 14(1), 12-16. <https://doi.org/10.1038/embor.2012.191>
- Chapman, G. (2010). *The five love languages: The secret to love that lasts*. Northfield Publishing.
- Cheal, D. (1987). 'Showing them you love them': Gift giving and the dialectic of intimacy. *The Sociological Review*, 35(1), 150-169. <https://doi.org/10.1111/j.1467-954X.1987.tb00007.x>
- Collaboration, O. S. (2015). Estimating the reproducibility of psychological science. *Science*, 349(6251), aac4716. <https://doi.org/10.1126/science.aac4716>
- Conradi, H. J., Noordhof, A., Dingemanse, P., Barelds, D. P. H., & Kamphuis, J. H. (2017). Actor and partner effects of attachment on relationship satisfaction and sexual satisfaction across the genders: An APIM approach. *Journal of Marital and Family Therapy*, 43(4), 700-716. <https://doi.org/10.1111/jmft.12222>
- Cook, M., Pasley, J., Pellarin, E., Medow, K., Baltz, M., & Buhman-Wiggs, A. (2013). Construct validation of the five love languages. *Journal of Psychological Inquiry*, 18(2), 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 cohabitators. *Marriage & Family Review*, 52(5), 442-460. <https://doi.org/10.1080/01494929.2015.1113225>
- Daniels, D., Saracino, T., Fraley, M., Christian, J., & Pardo, S. J. J. o. A. D. (2018). Advancing ego development in adulthood through study of the Enneagram System of Personality. *Journal of Adult Development*, 25(4), 229-241. <https://doi.org/10.1007/s10804-018-9289-x>
- Diamond, M. (2002). Sex and gender are different: Sexual identity and gender

- identity are different. *Clinical Child Psychology and Psychiatry*, 7(3), 320-334. <https://doi.org/10.1177/1359104502007003002>
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, 49(1), 71-75.
- Dush, C. M. K., & Amato, P. R. (2005). Consequences of relationship status and quality for subjective well-being. *Journal of Social and Personal Relationships*, 22(5), 607-627. <https://doi.org/10.1177/0265407505056438>
- 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(1), 19-26. <https://doi.org/10.1080/17464090500535822>
- Fletcher, G. J. O., Simpson, J. A., Campbell, L., & Overall, N. C. (2015). Pair-bonding, romantic love, and evolution: The curious case of Homo sapiens. *Perspectives on Psychological Science*, 10(1), 20-36. <https://doi.org/10.1177/1745691614561683>
- Gana, K., Saada, Y., & Untas, A. (2013). Effects of love styles on marital satisfaction in heterosexual couples: A dyadic approach. *Marriage & Family Review*, 49(8), 754-772. <https://doi.org/10.1080/01494929.2013.834025>
- Garcia, J., Gesselman, A., Massey, S., Seibold-Simpson, S., & Merriwether, A. (2018). Intimacy through casual sex: Relational context of sexual activity and affectionate behaviours. *Journal of Relationships Research*, 9, E12. <https://doi.org/10.1017/jrr.2018.10>
- Gareis, E., & Wilkins, R. (2011). Love expression in the United States and Germany. *International Journal of Intercultural Relations*, 35, 307-319. <https://doi.org/10.1016/j.ijintrel.2010.06.006>
- Germeys, L., & De Gieter, S. (2017). Psychological detachment mediating the daily relationship between workload and marital satisfaction. *Frontiers in psychology*, 7(2036). <https://doi.org/10.3389/fpsyg.2016.02036>
- Gurven, M., von Rueden, C., Massenkoff, M., Kaplan, H., & Lero, V. M. (2013). How universal is the big five? Testing the five-factor model of personality variation among forager-farmers in the Bolivian Amazon. *Journal of Personality and Social Psychology*, 104(2), 354-370. <https://doi.org/10.1037/a0030841>
- Haimes, Y. Y., & Schneiter, C. (1996). Covey's seven habits and the systems approach: A comparative analysis. *IEEE Transactions on Systems, Man, and Cybernetics - Part A: Systems and Humans*, 26(4), 483-487. <https://doi.org/10.1109/3468.508826>
- Hanel, P. H. P., & Vione, K. C. (2016). Do student samples provide an accurate estimate of the general public? *PloS one*, 11(12), e0168354-e0168354. <https://doi.org/10.1371/journal.pone.0168354>
- Hendrick, C., & Hendrick, S. (1986). A theory and method of love. *Journal of Personality and Social Psychology*, 50(2), 392-402. <https://doi.org/10.1037/0022-3514.50.2.392>
- Hershkowitz, M., Dekel, R., Fridkin, S., & Freedman, S. (2017). Posttraumatic stress disorder, parenting, and marital adjustment among a civilian population. *Frontiers in psychology*, 8(1655). <https://doi.org/10.3389/fpsyg.2017.01655>
- Hirvonen, R., Väänänen, J., Aunola, K., Ahonen, T., & Kiuru, N. (2018). Adolescents' and mothers' temperament types and their roles in early adolescents' socioemotional functioning. *International Journal of Behavioral Development*, 42(5), 453-463. <https://doi.org/10.1177/0165025417729223>
- Jackson, G. L., Krull, J. L., Bradbury, T. N., & Karney, B. R. (2017). Household income and trajectories of marital satisfaction in early marriage. *Journal of marriage and the family*, 79(3), 690-704. <https://doi.org/10.1111/jomf.12394>

- Kline, S., Horton, B., & Zhang, S. (2008). Communicating love: Comparisons between American and East Asian university students. *International Journal of Intercultural Relations*, 32(3), 200-214. <https://doi.org/10.1016/j.ijintrel.2008.01.006>
- Kraus, M. W. (2013, August 14). *The psychology of the "Psychology Isn't a Science" argument*. Psychology Today. <https://www.psychologytoday.com/intl/blog/under-the-influence/201308/the-psychology-the-psychology-isnt-science-argument>
- Lee, M. (2015). A study on the effects of enneagram group counseling on nursing students. *International Journal of Bio-Science and Bio-Technology*, 7(5), 235-246. <https://doi.org/10.14257/ijbsbt.2015.7.5.22>
- Maroufizadeh, S., Hosseini, M., Foroushani, A. R., Omani-Samani, R., & Amini, P. (2018). The relationship between marital satisfaction and depression in infertile couples: An actor-partner interdependence model approach. *BMC Psychiatry*, 18.
- Mazur, L. B., & Watzlawik, M. (2016). Debates about the scientific status of psychology: Looking at the bright side. *Integrative Psychological and Behavioral Science*, 50(4), 555-567. <https://doi.org/10.1007/s12124-016-9352-8>
- Pedersen, C. A. (2004). How love evolved from sex and gave birth to intelligence and human nature. *Journal of Bioeconomics*, 6(1), 39-63. <https://doi.org/10.1023/B:JBIO.0000017278.56163.6b>
- Polk, D., & Egbert, N. (2013). Speaking the language of love: On the whether Chapman's (1992) claim's stand up to empirical testing. *The Open Communication Journal*, 7(1), 1-11.
- Pop psych. (n.d.). <https://www.dictionary.com/browse/pop-psychology>
- Ruppel, E. K., & Curran, M. A. (2012). Relational sacrifices in romantic relationships: Satisfaction and the moderating role of attachment. *Journal of Social and Personal Relationships*, 29(4), 508-529. <https://doi.org/10.1177/0265407511431190>
- Seshadri, K. G. (2016). The neuroendocrinology of love. *Indian Journal of Endocrinology and Metabolism*, 20(4), 558-563. <https://doi.org/10.4103/2230-8210.183479>
- Soldz, S., & Vaillant, G. E. (1999). The big five personality traits and the life course: A 45-year longitudinal study. *Journal of Research in Personality*, 33(2), 208-232. <https://doi.org/10.1006/jrpe.1999.2243>
- Spohn, D. (2018). An operational definition of effective leadership: Was Covey right? *Review of Public Administration and Management*, 6(2), 251. <https://doi.org/10.4172/2315-7844.1000251>
- Sternberg, R. J. (1986). A triangular theory of love. *Psychological Review*, 93, 119-135. <https://doi.org/10.1037/0033-295X.93.2.119>
- Sternberg, R. J. (1997). Construct validation of a triangular love scale. *European Journal of Social Psychology*, 27(3), 313-335.
- Stinson, M. A., Bermúdez, J. M., Gale, J., Lewis, D., Meyer, A. S., & Templeton, G. B. (2017). Marital satisfaction, conflict resolution styles, and religious attendance among Latino couples: Using the actor-partner interdependence model. *The Family Journal*, 25(3), 215-223. <https://doi.org/10.1177/1066480717710645>
- Surijah, E. A., & Kirana, C. T. (2020). Five love languages scale factor analysis. *Makara Human Behavior Studies In Asia*, 24(1), 56-72. <https://doi.org/10.7454/hubs.asia.2201118>
- Surijah, E. A., Ratih, S. K. A., & Anggara, I. M. F. (2017). Merasa dicintai saat dibantu: Penelitian survey deskriptif "five love languages". *Psikodimensia*, 16(1), 49-61. <https://doi.org/10.24167/psiko.v16i1.946>
- Surijah, E. A., Sabharyanti, N. K. P. D., & Supriyadi. (2019). Apakah ekspresi cinta memprediksi perasaan dicintai? Kajian bahasa cinta pasif dan aktif. *Psymphathic:*

- Jurnal Ilmiah Psikologi*, 6(1), 1-14.
<https://doi.org/10.15575/psy.v6i1.4513>
- Surijah, E. A., & Septiary, Y. L. (2016). Construct validation of five love languages. *Anima Indonesian Psychological Journal*, 31(2), 65-76.
<https://doi.org/10.24123/aipj.v31i2.565>
- Sutton, A., Allinson, C., & Williams, H. (2013). Personality type and work-related outcomes: An exploratory application of the Enneagram model. *European Management Journal*, 31(3), 234-249.
<https://doi.org/10.1016/j.emj.2012.12.004>
- Trairatvorakul, P. (2016). Patterns of attachment. *Journal of Developmental & Behavioral Pediatrics*, 37(6), 519.
<https://doi.org/10.1097/DBP.0000000000000286>
- van Lankveld, J., Jacobs, N., Thewissen, V., Dewitte, M., & Verboon, P. (2018). The associations of intimacy and sexuality in daily life: Temporal dynamics and gender effects within romantic relationships. *Journal of Social and Personal Relationships*, 35(4), 557-576.
<https://doi.org/10.1177/0265407517743076>
- VanLaningham, J., Johnson, D. R., & Amato, P. (2001). Marital happiness, marital duration, and the U-shaped curve: Evidence from a five-wave panel study*. *Social Forces*, 79(4), 1313-1341.
<https://doi.org/10.1353/sof.2001.0055> %J Social Forces
- 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(4), 412-429.
<https://doi.org/10.1080/01494920902828219>
- Wilkins, R., & Gareis, E. (2006). Emotion expression and the locution "I love you": A cross-cultural study. *International Journal of Intercultural Relations*, 30(1), 51-75.
<https://doi.org/10.1016/j.ijintrel.2005.07.003>
- Wood, M. A., Bukowski, W. M., & Santo, J. B. (2017). Friendship security, but not friendship intimacy, moderates the stability of anxiety during preadolescence. *Journal of Clinical Child & Adolescent Psychology*, 46(6), 798-809.
<https://doi.org/10.1080/15374416.2015.1094742>
- Yela, C. (2006). The evaluation of love: Simplified version of the scales for yela's tetragonal model based on sternberg's model. *European Journal of Psychological Assessment*, 22(1), 21-27.
<https://doi.org/10.1027/1015-5759.22.1.21>
- Sarwono, S. W. (2009). *Pengantar umum psikologi*. PT. Bulan Bintang.
- Soemanto, W. (2012). *Psikologi Pendidikan*. Rineka Cipta.
- Sugiyono. (2013). *Metode penelitian kuantitatif kualitatif dan R&D*. Alfabeta.
- Watkins, M. W., Crosby, E. G., & Pearson, J. L. (2001). Role of the school psychologist (Perceptions of school staff). *School Psychology International SAGE Publications (London, Thousand Oaks, CA and New Delhi)*, 22(1), 64-73.
- Waluyo, M. (2013). *Psikologi industri*. Akademia Permata.
- Woods, M. C., & Burns, J. R. (2018). School camp refusal and reluctance: The role of the school psychologist. *Journal of Psychologists and Counsellors in Schools*, 28(2), 235-247.
- Winurini, S. (2017). Perilaku korupsi di Indonesia dalam perspektif teori motivasi. *Majalah Info Singkat Kesejahteraan Sosial*, IX(03).