

Investigating the Factor Structure of the Love Attitude Scale (LAS) with Malaysian Samples

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Abstract

Love is an emotion often experienced by individuals involved in romantic relationships. As a result, love has become an important determining factor in entering marriage among couples. This experience of love may vary across individuals and cultures. Hence, love style measurement serves as an indicator in choosing appropriate partner. We investigate the reliability and validity of the Love Attitude Scale (LAS) in this study. This scale has 24 items which measures six love styles namely Eros, Ludus, Storge, Pragma, Mania and Agape. Respondents were 200 individuals ranging from 20-25 years old (100 male and 100 females). Respondents involved in this study were individuals with a partner and have experiences in love. Data were analyzed using alpha Cronbach analysis and factor analysis. Results from factorial analysis showed that the Love Attitude Scale succeeded in extracting six factors as suggested with 67.56% variance. The eigen values ranged from 1.04 to 4.44. Results showed medium high alpha Cronbach value for five dimensions, specifically, $\alpha=0.79$ for Eros, $\alpha=0.87$ for Storge, $\alpha=0.82$ for Pragma, $\alpha=0.72$ for Mania, and $\alpha=0.83$ for Agape. However, Ludus showed the lowest alpha Cronbach value which was $\alpha=0.39$. Findings indicated that this scale is appropriate for use in the Malaysian context and the love styles dimension as suggested by LAS is appropriate for cross cultural context.

Keywords: love styles, psychometric, reliability, factor analysis

1. Introduction

The construct of love is a study which has received considerable attention and discussion. Love was defined by Plato as an emotion that exists in a hierarchical form, whereas Socrates argued that love is a combination of many elements (Levy and Davis, 1988). Those individuals who are in love have mutual appreciation and mutual honour towards the existing relationship. Love style on the other hand, refers to how individuals define the approach they have towards love. Attitudes that people have on love direct their behavior and experiences towards the individual they love (Hendrick and Hendrick, 1986).

Since the 19th century, there is a close relationship between romantic love, marriage and sexuality. In the west, close relationship between two individuals encourages love feelings to develop and love is perceived as an important factor for a marriage. Moreover, falling in love towards an individual is the most basic reason for an individual to be involved in a relationship (Perez et al., 2009). As a result, this concept has become more popular and has been a norm among the society where marriage emerges as a personal choice and romantic love and sexual satisfaction needs to be achieved within a marriage.

On the other hand, several studies have shown that divorce rates among Malays are increasing gradually albeit not significantly (Asmah, 1979; Jones, 1980, 1981, 1997; Kling, 1995). This revelation is worrying since it results in the question of how relationships based on love can help develop a successful marriage.

Therefore, the measurement of love style is crucial as it can be used as an instrument to find a suitable partner. Several instruments have been developed to measure love for instance, Rubin's (1970) Love Scale, the Love Scale developed by Munro and Adams (1978), the 'Erotometer' developed by Bardis (1978), and Sternberg's Triangular Love Scale (1986, 1987, 1997). One psychological measurement which has been used widely was developed from the Typology Love Theory namely the Love Attitude Scale (LAS; Hendrick et al., 1998).

According to the Typology Love Theory, there are six love styles which are primary love which includes Eros, Ludus and Storge and secondary love which consists of Mania, Pragma and Agape.

Eros refers to the strong physical and emotional attraction followed by commitment to the loved one (Lee, 1973). Ludus love refers to playful love or game-playing love. In this love style, there is no commitment towards love and the partner (Lee, 1973). Storge refers to love relationship developed slowly from friendship (Lee, 1973). Those who practice this love have a strong commitment towards the relationship.

Pragma love is a combination between Ludus and Storge whereby love is perceived as realistic and practical (Lee, 1988). In this particular love style, it is not based on intense physical attraction but emphasizes the conscious search for a compatible partner. Manic love or possessive love is characterized as a combination of erotic and Ludic love styles which results in an obsessive, intense, full feeling and possessive kind of love (Lee, 1988). Those people who belong to this love style have a strong need to be loved. Agape love or altruistic love is a combination of erotic and Storgic love (Lee, 1988). This type of love needs attention from the loved ones without having personal interest. This love is seen as intense and full of friendship and increases the quality of love with the need for mutual helping (altruisme).

Originally, Hendrick et al. (1984) constructed a love scale for an extensive study of love and sex attitudes among undergraduate students. The scale was developed based on Lasswell and Lasswell's (1976) previous work, which was the sample profile. They converted the categorical nature of the sample profile to a Likert scale. Later, Hendrick and Hendrick (1986) improved the sample profile which produces the Love Attitude Scale (LAS). Similar to the sample profile, the scale consists of six dimensions - Storge, Agape, Mania, Pragma, Ludus and Eros. The scale consists of 42 items with an equal number of seven items for each scale. Each item has a 5-point Likert Scale as "1" - "strongly disagree" to "5" - "strongly agree". The total number of responses for each subscale gives the proneness of an individual towards a certain love style.

Hendrick et al. (1998) also built a short version of the Love Attitude Scale to provide researchers with an instrument to measure love styles. They produced two sets of short form of LAS which were the 4-item short form LAS and the 3-item short form of LAS. To illustrate, each short form of LAS has six dimensions of love, - Storge, Agape, Mania, Pragma, Ludus and Eros. In the 3-item short form LAS there was 18 items where all three items were used for every love dimension. Conversely, the LAS 4-item short form LAS with 24 items were applied using four items for each dimension of love. It was proven that the 4-item and or 3-items versions have stronger psychometric properties compared to the earlier version of LAS (1986) (Hendrick et al., 1998). This version was shown to be psychometrically sound compared to the first version (Tzeng, 1993)

Previous research found the LAS to be psychometrically sound (Hendrick and Hendrick, 1989; Tzeng, 1993). This is probably because LAS has the ability to measure love at different stages in a relationship including for people who are in the falling in love stage (Hendrick and Hendrick, 1990). In addition, the acknowledgement of a specific sexual item in the Eros dimension of love also allows researchers to study the existence of sexuality within the love context. LAS also allow researchers to understand how love actually functions rather than depending on just "liking" and "loving" factors of love proposed earlier by Rubin (1970).

However, results indicated that some of the items in the love dimensions of LAS have low reliability (Levy and Davis, 1988). For example, the love dimensions of Storge and Pragma failed to correlate with the love subscales from the Relationships Rating Form (Davis and Latty-Mann, 1987) and Sternberg's Triangular Love Scale (1986). Moreover more studies have also shown similar results (Feeney and Noller, 1990; Rotzien et al., 1993).

Studies on the cross cultural suitability of the theory of love across different cultures need to be done especially in distinguishing whether the construct is relatively universal or culture specific. Several cross-cultural comparative research have been done with the LAS such as White et al. (2004), Neto et al. (2000), Neto (1994), Kanemasa et al. (2004) and Yang and Liu (2007). Findings of these studies generally support the six dimensions of love as proposed by Lee (1973). Neto et al. (2000) who conducted the study among students from Africa, Asia, South America, and Europe, found that the six dimensions could be regarded as comparable across the examined countries.

A handful of research found that there are consistent differences between male and female in their love styles. A study carried out by Hendrick dan Hendrick (1986) involved six love styles which were related to intimacy. Love styles which were used were based on the typology love as suggested by Lee (1988). Findings indicated that women were prone to practise Storgic love (friendship love), Pragma love (pragmatic love) and Manic love (possessive love) whenever in relationship compared to men who were inclined to Ludic love or playful love. The difference between genders was not consistent when Eros (romantic love) and Agape (altruistic love) love

takes place. This study also supported the fact that individuals with similar personalities and love styles were prone to be together.

This was also supported by a study conducted by Bailey et al. (1987) which showed that Ludic love styles were practised by males whereas females were more likely to practise Pragma and Manic love styles. Hendrick et al. (1988) have carried out a study to investigate the relationship between love styles and relationship satisfaction among 57 couples who were in love. The Love Attitude Scale (LAS) was employed by the researchers in the study. Findings indicated that Eros love style (romantic love) and Agape love style (altruistic love) were significantly and positively related with relationship satisfaction. In addition, Ludus love or playful love was found to be negatively related with relationship satisfaction.

A study conducted by Bernardes et al. (1999) in Lisbon University were aimed to replicate the study which were once carried out by Hendrick dan Hendrick (1995) to explore the role of gender towards love and sexuality. A number of 245 Portuguese within the age range of 18 to 30 years old were chosen as subjects to answer the questionnaires containing The Sexual Attitude Scale and The Love Attitude Scale. Results obtained found that males were more likely to adopt permissive sexual attitude and Ludus and Agape love style. According to the sociobiological approach, males were prone to adapt to Ludus love style and permissiveness sexual attitude to maximize the reproduction potential and thus, they accept promiscuous relationship more easily. Social learning theory suggests that social stereotyping causes males to be more active in sexual roles which help to explain sexual permissiveness or sexual promiscuity among them. Women on the other hand, were prone to adopt Pragma love style. The Pragma love style adopted by women was also explained by the sociobiological approach as women having more concern about investing on their offspring.

A study by Morrow et al. (1995) reported that relationship satisfaction was correlated positively with Eros love style (romantic love) whereas, negatively with Ludus love style (playful love) which applied to both genders. Consequently, the researchers also discovered that Eros (romantic love) and Agape (altruistic love) love styles were correlated with high commitment. However, Ludic love style (playful love) showed the reverse finding. This study also found that couples showed similar attitudes towards love and specific relationship quality such as commitment.

A study carried out by Butler et al. (1995) also used the Love Attitude Scale (LAS) to analyze the relationship between love styles and other variables such as gender, age, various social factors and culture. Findings indicated that women were prone to adopt Storge (friendship love) and Pragma (pragmatic love) love styles whereas, males were prone to adopt Ludus (playful love) and Agape (altruistic love) love styles. If age factor was analyzed with love, it was found that the younger respondents were prone to adopt Eros love style (romantic love). Conversely, when age of respondents increases, they were more prone to adopt Storge (friendship love) and Pragma (pragmatic love) love styles.

A study by Perez et al. (2009) studied the love concepts among Spanish population and the difference of love concepts among different genders and age groups. Results showed that within Spanish context, accepted love styles were Eros (romantic love), Agape (altruistic love), Pragma (pragmatic love) and Storge (friendship love). Conversely, Ludus love style or playful love was rejected fully by both genders whereas Mania love style or possessive love was not considered by respondents from this study. However, male respondents (especially the older group) generally showed more acceptance towards Eros love style (romantic love) and Agape love style (altruistic love) for all ages. Female respondents from all ages were more prone to adopt Pragma love style and respondents who were female, young and early adult were prone to reject Ludus love style. Local studies carried out by Saodah (2007) were aimed to identify gender differences in the love styles among Universiti Kebangsaan Malaysia (UKM) students. The Love Attitude Scale was used to investigate the love styles which were adopted by respondents. Findings showed that there were no differences according to gender, race and residing place in love styles.

The cultural context of Malaysia is unique as it is a multiethnic country with Eastern values. One of the ethnicity in Malaysia, the Malay people is said to have a strong sense of community spirit, place great emphasis on manners, are helpful, polite, considerate and courteous (Mastor, 2000). Another basic concept of the Malay culture is the social emotion of *malu* (shame, propriety) (Mastor, 2000). Swift (1965) equated *malu* with "hypersensitiveness to what other people are thinking about oneself" (p.110). Although this characteristic is common among Malays, few studies have equated Malays to Malaysians as a whole (Mastor, 2000). As a result of these traits of manners, considerate, courteous and *malu*, expressions of love among Malaysians are usually conveyed indirectly.

Hence, this study is aimed to explore the suitability of the factor structure of the Love Attitude Scale (LAS) with the Malaysian samples. Specifically, the research objective is to investigate the reliability and validity of the Love Attitude Scale. Four main objectives in this study are: (1) to evaluate the construct validity of the Love Attitude Scale (LAS) whether the scale produces six dimensions or love styles as suggested by the Typology Love Theory (Lee, 1988); (2) to investigate the reliability of the Love Attitude Scale (LAS); (3) to investigate the criterion validity of the LAS by its correlation with sexual attitude; and (4) to investigate the gender differences in love styles.

2. Materials and Method

2.1 Respondents

The target population is university students in the age range of 20 to 25 years old. The sample was 200 respondents comprising of 100 males and 100 females with a partner and have experiences in love. Purposive sampling was used in which selection of respondents were based on the criteria of individuals who were in love and voluntarily participated in the study.

2.2 Research Instruments

The instrument used in this study was the Love Attitude Scale Short Form (Hendrick et al., 1998). The Love Attitudes Scale (LAS) short form consists of 24 items. Each component in the love style comprises four items chosen from the original version (Hendrick et al., 1998). The scale uses a 5-point Likert format which is 1=strongly agree to 5=strongly disagree. The lower the scores obtained through the items, the higher respondents' agreement with the love style. Another instrument used was the Brief Sexual Attitudes Scale (Hendrick et al., 2006) which measures four dimensions in sexual attitudes namely permissiveness, birth control, communion and instrumentality. This scale has 43 items and also uses the 5-point Likert scale which is 1=strongly agree to 5=strongly disagree. Both these instruments were translated into Bahasa Malaysia using the back translation method.

In three previous studies conducted, it was found that the mean alpha reliability was 0.80 (Hendrick et al., 1998). According to a study by White (2003), the reliability coefficients for the six love styles were Eros (0.71), Ludus (0.75), Storge (0.84), Pragma (0.82), Mania (0.71) and Agape (0.84). The short form scale has stronger psychometric properties compared to the original scale (Hendrick et al. 1998). For instance, the inter-item correlations increased from 0.37 (original version) to 0.50 (short form version). The test-retest reliability reported was also good ranging from 0.63 to 0.76. The reliability of the Brief Sexual Attitudes Scale also showed good internal consistency ranging from 0.71 to 0.93 with reliability coefficients of 0.93 for permissiveness, 0.84 for birth control, 0.71 for communion, and 0.77 for instrumentality (Hendrick et al., 2006).

3. Results and Discussion

The first objective was to evaluate the construct validity of the Love Attitude Scale. Construct validity was analyzed using factor analysis. Results of factor analysis using the principal component and varimax rotation method succeeded in producing a good result for construct validity. The analysis extracted seven factors while the scale claimed to measure six love styles. When analysis was forced to extract six factors, results were able to produce six distinct principal components with good eigen values from 1.04 to 4.44 with the percentage of variance explained (PVE) of 18.52%. Table 1 showed the six principal components of love styles. (see Table 1)

Table 1. Results of factor analysis for the Love Attitudes Scale: Short Form

Factor Structure	Loading
Factor 1: Eros love style=10.44% variance	
1 My partner and I have the right physical chemistry between us.	0.77
2 I feel that my partner and I were meant for each other.	0.78
3 My partner and I really understand each other.	0.75
4 My partner first my ideal standards for physical beauty/handsomeness.	0.67
Factor 2: Storge love style=12.79% variance	
9 Our love is the best kind because it grew out of a long friendship.	0.87
10 Our friendship merged gradually into love over time.	0.83
11 Our love is really a deep friendship, not a mysterious, mystical emotion.	0.76
12 Our love relationship is the most satisfying because it developed from a good friendship.	0.87

Factor 3:	Pragma love style= 11.23% variance	
13	A main consideration in choosing my partner was how he/she would reflect on my family.	0.72
14	An important factor in choosing my partner was whether or not he/she would be a good parent.	0.83
15	One consideration in my choosing my partner was how he/she would reflect on my career.	0.87
16	Before getting very involved with my partner, I tried to figure out how compatible his/her hereditary background would be with mine in case we ever had children.	0.76
Factor 4:	Mania love style= 9.68% variance	
17	When my partner does not pay attention to me, I feel sick all over.	0.72
18	Since I have been in love with my partner, I have had trouble concentrating on anything else.	0.67
19	I cannot relax if I suspect that my partner is with someone else.	0.63
20	If my partner ignores me for a while, I sometimes do stupid things to try to get his/her attention back.	0.58
5	I believe that what my partner does not know about me won't hurt him/her.	0.52
Factor 5:	Agape love style= 11.61% variance	
21	I would rather suffer myself than let my partner suffer.	0.68
22	I cannot be happy unless I place my partner's happiness before my own.	0.71
23	I am usually willing to sacrifice my own wishes to let my partner achieve his/hers.	0.81
Factor 6:	Ludus love style= 6.94% variance	
6	I have sometimes had to keep my partner from finding out about other partners.	0.81
8	I enjoy playing the game of love with my partner and a number of other partners.	0.78

This means that the six subscales measured by the inventory managed to be extracted as claimed by the typology love theory. When the results of Scree test were analyzed, the distinct six factors can be identified clearly. This shows that the inventory can measure accurately six love styles among the 200 respondents who participated in the study. However Item 5 for Ludus love style was loaded in mania love style. Item 7 on the other hand was eliminated as it loaded on its own in the seventh factor.

The second objective of this study was to examine the reliability of the Love Attitude Scale. Results as shown in Table 2 indicated the LAS has high internal consistency. Overall, the alpha coefficient was 0.75. The alpha reliability for the six subscales showed moderate to high values except for Ludus love style. Specifically, the alpha coefficients were Storge=0.87, Agape=0.83, and Pragma= 0.82, followed by Eros=0.79 and Mania= 0.72. Ludus love style has the lowest internal consistency of 0.39 and this subscale needs to be reevaluated. The reliabilities for each subscale (except for Ludus love style) in this study were higher as compared to previous studies by White (2003) and Hughes et al. (2005). (see Table 2)

Table 2. Results of Cronbach alpha for the Love Attitude Scale

Subscale	Alpha Cronbach
Eros	0.79
Ludus	0.39
Storge	0.87
Pragma	0.82
Mania	0.72
Agape	0.83

The third objective was to investigate the criterion validity of the LAS by its correlation with sexual attitude as measured by the Brief Sexual Attitudes Scale. Results in Table 3 showed that there were significant correlations between permissiveness with Pragma and Agape with $r=-0.25, p < 0.05$ and $0.19, p < 0.05$ respectively. There was significant correlation between birth control and Agape, $0.18, p < 0.05$. There were significant correlations

between communion with Eros, Mania and Agape with $r=0.27$, $p < 0.05$, $r=0.14$, $p < 0.05$ and $r=0.25$, $p < 0.05$ respectively. Finally, there was significant correlation between instrumentality with Ludus and Storge with $r=0.18$, $p < 0.05$ and $r=0.18$, $p < 0.05$. (see Table 3)

Table 3. Correlations between love styles and sexual attitudes

Dimensions	Permissiveness	Birth control	Communion	Instrumentality
Eros	0.03	0.02	0.27*	0.02
Ludus	0.13	-0.11	-0.06	0.18*
Storge	0.03	0.02	0.02	0.18*
Pragma	-0.25*	-0.10	-0.06	-0.07
Mania	0.11	-0.09	0.14*	0.07
Agape	0.19*	0.18*	0.25*	0.03

The results of the present study were consistent with findings by Bernardes et al. (1999) and Hendrick dan Hendrick (1995). For instance Bernardes et al. (1999) also found significant relationship between permissive sexual attitude and Agape love style. Findings indicated that the higher the permissive attitude, the lower the pragma love style among respondents in which love is perceived as realistic and practical (Lee, 1988). Thus, permissive sexual attitude should not be the main practice. The results of significant correlations showed that sexual attitude can be a significant criterion to love styles and thus, provided criterion validity.

The fourth objective was to investigate the gender differences in love styles. Results in Table 4 showed that there was no significant difference of love styles based on gender on almost all the dimensions of love styles. There was only gender difference in agape love style with $t(198)=-3.00$, $p < 0.05$. Female respondents showed a higher mean in agape love style with 13.13 compared with male respondents (mean=11.62). (see Table 4)

Table 4. Gender differences in love styles

Dimension		N	Mean	SD	df	t
Eros	Male	100	8.71	2.91	198	-1.04
	Female	100	9.13	2.78		
Ludus	Male	100	12.82	2.80	198	-1.62
	Female	100	13.46	2.78		
Storge	Male	100	9.27	3.49	198	-1.66
	Female	100	10.19	4.29		
Pragma	Male	100	9.85	3.88	198	-1.64
	Female	100	9.00	3.41		
Mania	Male	100	13.00	3.51	198	0.78
	Female	100	12.61	3.57		
Agape	Male	100	11.62	3.42	198	-3.00*
	Female	100	13.13	3.70		

* $p < 0.05$

The results supported findings from Saodah (2007) who also found no significant difference of love styles among men and women. The significant difference of Agape love style according to gender was contradictory with previous studies. For instance, Hendrick dan Hendrick (1986) found no significant difference of Agape based on gender while Bernardes et al. (1999) and Perez et al. (2009) found that Agape love style was adopted more by men. The differences of the findings may be attributed by the different cultural context of the respondents in which the Malaysian respondents in the present study may be influenced by traits of manners, considerate, courteous and propriety (Mastor et al., 2000)

4. Conclusion

This study has shown evidence that the Love Attitude Scale (LAS) is suitable to be used in the Malaysian context due to the good psychometric properties obtained. Apart from that, this instrument also has good construct validity because it replicated the six love styles as proposed by the love typology theory. The findings

implied that love styles are universal constructs based on the evidence that similar six love styles also emerged using the Malaysian samples. Findings of this study are also important in measuring reliably and validly individuals' love styles as it can be used as a tool to find the most suitable partner in a relationship.

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