

# Psychometric Properties Of Multidimensional Scale Of Perceived Social Support (MSPSS): Indian Adaptation

Kamalpreet Kaur, Nimisha Beri

**Abstract** - Social support is a process of social change that is significant in behavioural, social and value development of individual. Social support exists in various forms which include emotional support, instrumental support and professional support. The original construct of MSPSS is designed by Zimet et.al. (1988) and comprise of three dimensions namely support received by significant other, family and friends. Investigator in the present research assessed the psychometric properties of the scale in Indian conditions. The selected model of MSPSS was tested by employing confirmatory factor analysis (CFA) using AMOS 23.0 on a sample of 461 professional students from Punjab, Northern India. The results revealed that the 12 item, three factor model of MSPSS fits well on Indian sample. The estimated convergent and discriminant validity ensures the psychometric properties of the scale in Indian context and scale also reflects good internal consistency. Analyzing the psychometric properties of MSPSS on representative sample it is evident that scale is well adapted for future researches in Indian conditions.

**Index Terms:** Perceived Social Support, Adaptation, Psychometric properties, India, Multidimensional Scale, CFA, Professional students.

## 1 INTRODUCTION

The perception and actuality of an individual that he is being cared for and has support available from others whenever he requires is called as social support. So, the term social support is often used in terms of relationships and includes the perceived support as received from family, friends or any other person who plays a significant role in one's life. Social support originates from the people to whom we are tied socially. The network of social support includes individuals in one's environments who influence one's feelings and perceptions about his environment. Home plays a significant role in bringing positive changes in one's life specifically at the time of crisis. Social support is a process of social change that is significant in behavioural, social and value development of individual. Social support exists in various forms which include emotional support, instrumental support and professional support. (House 1981[1]; Nelson & Brice, 2008[2]; Schaefer, Coyne & Lazans, 1981[3]; Singh & Billingsley, 1998[4]). Tardy (1985) [5] defined social support along five dimensions i.e. direction-whether support is received or given; disposition-availability of support and its utilization; objectivity or subjectivity of support with respect to resources for support; content-form of support and network-structure of social system that are providing support. In social support theory and measurement Lakey & Cohen (2000) [6] suggested that different measures of social support specific to theoretical orientations are likely to be related to some mechanisms and outcomes and not others. So, while designing or selecting a measure for support investigators-should clearly articulate the theoretical aspect behind the social support that can guide their thinking and reveal the actual support in kind and form as received by the individuals. Investigator in the present research is validating the measure of Multidimensional Scale of Perceived social

support MSPSS designed by Zimet et.al. (1988) [7] on Indian students studying in professional courses. This is a 12-item, 7-point Likert scale originally designed to measure the emotional social support as perceived by Duke University undergraduates.

## 2 REVIEW OF LITERATURE

Zimet et.al. (1988) [7] designed a subjective assessment measure of adequacy of received emotional social support for university undergraduates measuring the support across three subscales i.e. support by family, friends and significant others. The test-retest reliability of the scale was very high with reliability coefficient 0.85. The reliability coefficient for three subscales i.e. family, friends and others were found out to be 0.85, 0.75 & 0.72. respectively. Author established the construct validity of the scale correlating the measure negatively with measures of depression and anxiety proving that social support would ameliorate psychological distress. Zimet et.al. (1990) [8] further extended the scale development across different subject groups i.e. pregnant women, European adolescents living with their families and paediatric residents. Results reported the confirmation of all three factors establishing the factors validity of the scale. Internal consistency of the scale along different subgroups was also found to be high. Dahlem et.al. (1991) [9] examined the psychometric properties of MSPSS on diverse group of students at urban college. Results reported good internal reliability and confirmed the original subscale structure of the measure of social support. Kazarian & McCabe (1991) [10] determined the factorial structure and psychometric properties of MSPSS on university students and adolescent inpatient psychiatric sample. Results of factor of analytic observation confirmed the original three subscale structures in both samples. The scale also reported excellent internal consistency in both samples and predicted good validity by correlating its scores with social support behavior scale. On the similar lines, Cauty-Mitcell & Zimet (2000) [11] examined the psychometric properties of MSPSS on African-American adolescents. CFA confirmed three factor structure of the scale with high internal consistency and factorial validity. Further, Chou (2000) [12] examined the factorial structure and psychometric properties of MSPSS on Chinese

- Author: Kamalpreet Kaur, Assistant Professor, Khalsa College of Education, Ranjit Avenue, Amritsar, India, PH-8283827794. E-mail: [kamal.parm14@gmail.com](mailto:kamal.parm14@gmail.com)
- Co-Author Dr. Nimisha Beri, Professor, Lovely Professional University, Phagwara, India, PH-9815276844. E-mail: [nimisha.16084@lpu.co.in](mailto:nimisha.16084@lpu.co.in)

adolescents and confirmed two factors namely family and friends out of the original three factor model. Construct validity of the scale was determined by using General Health Questionnaire and establishing negative correlation with depression and anxiety dimensions of this questionnaire. MSPSS-C reported high internal consistency even with its two subscales on Chinese sample. Zhang & Norviltis (2002) [13] also estimated the psychometric properties of MSPSS in Chinese and American cultures and found that scale was valid and reliable across cultures. On the other hand, Clara et.al. (2003) [14] confirmed factor model of MSPSS on samples of college students and psychometric out patients using conformity factor analysis. The results confirmed social support as a brief instrument to determine the hierarchical structure of social support. The reliability and validity of the scale on two samples was also found to be high. Edward (2004) [15] validated MSPSS on Mexican American adolescents and confirmed three factor substructures of original MSPSS on the selected sample using exploratory factor analysis. Internal reliability of the scale was estimated using Cronbach alpha which was high in case of family and friend's subscale and adequate in case of significant other by establishing its correlation with perceived social support from family subscale of familism measure and satisfaction with family scale of MSLSS. Convergent validity was established as correlation of MSPSS was high with both of the scales and discriminant validity was established as correlation of these scales with friends and significant other subscales of MSPSS was lower than correlation with family subscale. Duru (2007) [16] also reinvestigated the psychometric properties of MSPSS on Turkish university students and confirmed the three-subscale structure of the scale on the sample with high internal and test-retest reliability and good validity. Basol (2008) [17] examined the reliability and validity on Turkish school administrator and validated the three-factor structure of MSPSS on the selected sample using CFA. Results reflected good internal consistency of the total scale and its subscales. ( $\alpha=0.93$ ). In addition to this, Rizwan & Aftab (2009) [18] verified the psychometric properties of MSPSS on Pakistani college students and confirmed that the scale has good internal reliability ( $\alpha=0.899$ ) and test-retest reliability (0.764) on Pakistani young adults. The study established good factorial validity and adequate constant validity. Ng CG et.al. (2010) [19] estimated the validity and reliability of Malay version of perceived social support on medical students and confirmed the 3-factor structure on Malay students. The tool exhibited good internal consistency ( $\alpha=0.89$ ); test-retest reliability (0.77) and parallel form reliability (0.94). Construct validity of the scale was also established as it was found to be negatively correlated with Malay version of General Health Questionnaire and Depression inventory. Similarly, Wongpakaran & Wongpakaran (2012) [20] created a revised version of MSPSS and tested its reliability and validity on Thai Medical students. CFA applied on both old and revised versions reported better model fit, internal consistency ( $\alpha=0.92$ ) and construct validity by predicting significant correlation with related measures for revised version. Osman et.al. (2013) [21] estimated psychometric properties of MSPSS in undergraduate men and women. Composite scale reliability and omega methods confirmed adequate reliability of scale and subscales based on the total scores. Multi-group CFA supported configured and metric invariance but

partial measurement invariance was estimated for scalar and strict measurement invariance was estimated across genders. Study supported the bifactor model strongly across genders. On the similar lines, Guan et.al. (2013) [22] designed and validated the Tamil version of MSPSS on Indian participants in University of Malaya of Malaysia. Scale was found to be valid on selected sample as it was positively correlated with medical outcome survey and negatively correlated with Malaya version of General Health Questionnaire and Beck's depression inventory. MSPSS-TV reflected excellent internal consistency ( $\alpha=0.92$ ) and high test-retest and parallel form reliability. The study concluded that scale can be used on young educated Malaysians. Further, Adamczyk (2013) [23] developed and validated Polish language version of MSPSS on university students. Exploratory and confirmatory factor analyses evidenced the original three factor structure of the scale. Internal consistency of three subscales was comparable to internal consistency of original scales. The three subscales also exhibited high levels of anxiety, loneliness with which correlation was significant and negative and measure of life satisfaction and current involvement in romantic relationship with which the correlation was significant and positive. Gonzalez et. al. (2013) [24] on the similar lines presented a paper on validation of MSPSS on Mexican adolescent population. The English version of MSPSS was translated into Spanish and its reliability was determined using Cronbach alpha and intra class correlation coefficient for retest. Convergent and discriminant validity of the scale was established using social support Questionnaire and Depression scale respectively. CFA confirmed two major components of scale i.e. family and significant others as single component and friends as second component. The reliabilities determined using two methods i.e. Cronbach and Intraclass Correlation Coefficient (ICC) were sufficiently high with  $\alpha=0.95$  and ICC as 0.91. The convergent and discriminant validity of the scales were also good establishing the construct and validity of the Mexican version of the scale. Guan et. al. (2015) [24] on the other hand validated the simplified Chinese version of MSPSS among medical and dental student in university of Malay. Results yield excellent internal consistency ( $\alpha=0.92$ ); high test reliability (0.71) and excellent parallel form reliability (0.92) confirming the three-factor model in Chinese version. Results also predicted high validity of MSPSS-SCV by negatively correlating the scores with Beck depression inventory and General Health Questionnaire. Lee et. al. (2017) [26] adapted MSPSS in Malay language and studied its psychometric properties on public secondary school teachers. The 12-item three factor structure was revised into 8-item 2 factor structure. The revised version exhibited good fit in CFA and high internal consistency of full scale ( $\alpha=0.91$ ) and family ( $\alpha=0.93$ ) and friend scale ( $\alpha=0.92$ ). The results also predicted good test-retest reliability and convergent validity. Huey Ong et. al. (2017) [27] on the other hand compared one factor, three correlated factor, second order factor and their bifactor model of MSPSS (with one general and three specific factors) taking a sample of university undergraduates in Malaysia. The bifactor model outperforms the three-competing model. The two items of friend's factor were not loaded significantly in specific factor but three can be fully accounted for the general factor model. Omega hierarchical value representing the internal consistency of

the scale was higher for general factor than the three specific factors. In addition to this, Demirtas et. al. (2018) [28] established the psychometric properties of MSPSS among Hispanic college students and confirmed three subscale structures of MSPSS with high internal consistency and validity. Also, Trejos-Herrera et. al. (2018) [29] examined psychometric properties of MSPSS in Colombian adolescents and confirmed the original three factor structure of MSPSS thereby establishing its construct validity. Further reliability of the scale was reported as 0.84 which is sufficiently high to generalize its use on Colombian adolescents.

### 3 RESEARCH METHODOLOGY

#### 3.1 SAMPLE

The study was conducted on a sample of 461 UG students enrolled in two different professional courses; Engineering (N=240; 52%) and Business (N=221; 48%) in different institutes of Punjab. The sample includes male (N=237; 51%) and female (N=228; 49%) students studying in 3<sup>rd</sup> (N=205; 45%), 5<sup>th</sup> (N=187; 40%) and 7<sup>th</sup> semesters (N=70; 15%) of these courses and was drawn randomly from the population.

#### 3.2 MATERIALS

The multidimensional scale of perceived social support [Zimet et. al., 1988][7] is a 12-item scale that was originally designed to measure support received by undergraduate students from three sources namely family, friends and significant others was used with permission from the author of the scale. The participants were asked to indicate their agreement on a 7-point Likert Scale ranging from 1 to 7 (very strongly disagree to very strongly agree) on all the three subscales. The higher score on each subscale indicates the higher level of social support perceived by the respondents. The psychometric properties of the scale have been studied from time to time on different samples in different parts of the world out of which several studies have been conducted to estimate the psychometric properties of MSPSS on sample of college students (Dahlem, 1991[9]; Kazarian & Maclabe, 1991[10]; Clara et. al. 2003[14]; Duru 2007[16]; Rizman & Aftab 2009[18]; Ng CG et. al. 2010[19]; Wangpakaram & Wangapakaran, 2012[20]; Osman et. al., 2013[21]; Adamczyk, 2013[23]; Huey Ong et.al. 2017[27]; Demirtas, 2018[28]) and results confirmed three factor structure of the scale establishing the construct validity of scale in most of the studies. The studies further concluded good internal consistency on variety of samples.

#### 3.3 PROCEDURE

Investigator sought necessary permissions regarding data collection and collected data from third, fifth and seventh semester students of engineering and business disciplines in person. Students were taken into confidence and rapport was established with them initially before starting data collection. Necessary instructions for completing the scale were given and responses of whole sample were recorded for further analysis.

## 4 RESULTS & INTERPRETATION

#### 4.1 Descriptive Analysis

The means and standard deviation of the sample on subscales and total scores is presented below in graph. Figure 1: Graph Showing Mean & Standard Deviations From figure 1, it is clear that mean and standard dev. of sample on three subscales i.e. family, friends and significant others is 5.65, 1.48; 5.74, 1.46; 5.15, 1.42 respectively. The mean score of social support on the total scale is 5.28 with standard deviation of 1.20. These results are comparable to original version of MSPSS (Zimet et.al., 1988)[7] and its extended versions Zimet et. al., 1990[8] and Dahlem et. al, 1991) [9].

#### 4.2 RELIABILITY

Internal reliability of the scale along with it three subscales was estimated through Cronbach alpha and split half method of reliability using SPSS 23.0[30]. The value of  $\alpha$  for three subscales came out to be high with reliability coefficient for all the three subscales and total MSPSS scale. Further, the split half coefficient of internal consistency for total scale was calculated using odd even method of splitting items into two halves and results again yielded excellent reliability on the selected sample. The results indicating reliability coefficient of MSPSS in Indian conditions are mentioned in the table below:

**Table 1:** Table showing internal consistency of Social Support Scale

Type of Reliability	Reliability Coefficient			
	Family Subscale	Friends Subscale	Significant Other Subscale	Overall Social Support
Cronbach Alpha ( $\alpha$ )	0.84	0.85	0.87	0.92
Split Half	0.82	0.85	0.82	0.72

From the table 1 above it can be interpreted that Cronbach  $\alpha$  ranges from 0.84 to 0.87 for different dimensions of Indian version of MSPSS and for overall scale internal consistency is 0.92. Further, observing the table it can be clearly seen that split half method of reliability also estimated internal consistency of the scale within acceptable limits for full scale (0.72) indicating thereby that the scale possesses excellent reliability as measured using different methods of calculating reliability.

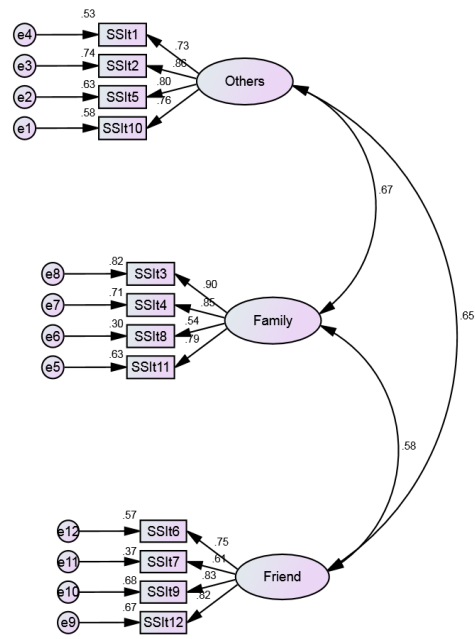
#### 4.3 CONSTRUCT VALIDITY OF MSPSS

CFA was performed using AMOS 23.0[31] to evaluate the model of social support (Zimet et. al. 1988) [7] proposed for adaption in Indian conditions. The construct validity of the model was assessed using fit indices and by establishing its construct validity. For model fit indices criteria for accepting a model given by Geuens and Pelsmaker (2002) [32] was adopted and the results are reported as below:

**Table 2: Model fit Indices**

Model Index	Fit	GFI	AGFI	RMSEA	$\chi^2/df$	TLI	CFI
Standard Value		>0.80	>0.90	<0.08	<5	>0.90	>0.90
Estimated Value		0.93	0.894	0.07	3.74	0.95	0.96

From the above values of goodness of fit indices, it is clear that the proposed Indian model of MSPSS fits the data well. The estimated index values are in accordance to the standard values and depicts that estimated three factor structure of MSPSS in Indian conditions is satisfactorily explained by the selected sample. Following the model fit the path diagram for confirmation of constructs and their indicators was constructed and regression weights were estimated as shown in the figure below:



**Figure 2: Path Diagram Showing Three Factor Model of MSPSS in Indian context**

Construct validity of the scale was established through its main components i.e. convergent and discriminant validity. Convergent validity was estimated through assessment factor loadings of indicator items and their statistical significance followed by Average Variance Extracted (AVE) and Composite Reliabilities (CR) of three sub constructs of MSPSS (Table 3).

**Table 3: Table showing item factor loadings, regression weights, AVE and CR for MSPSS (Indian adaptation)**

Latent Construct	Items	Standardized Regression Weights	p-value	AVE	CR
Support from Family	"My family really tries to help me".	0.90	0.000**	0.61	0.86
	"I get the emotional help & support I need from my family".	0.85	0.000**		
	"I can talk about my problems with my family".	0.54	0.000**		
	"My family is willing to help me make decisions".	0.79	0.000**		
Support from Friends	"My friends really try to help me".	0.75	0.000**	0.57	0.84
	"I can count on my friends when things go wrong".	0.61	0.000**		
	"I have friends with whom I can share my joys and sorrows".	0.83	0.000**		
	"I can talk about my problems with my friends".	0.82	0.000**		
Support from Significant Other	"There is a special person who is around when I am in need".	0.73	0.000**	0.62	0.86
	"There is a special person with whom I can share joys and sorrows".	0.86	0.000**		
	"I have a special person who is a real source of comfort to me".	0.80	0.000**		
	"There is a special person in my life who cares about my feelings".	0.76	0.000**		

\*\* Significant at 0.01 level of significance

Convergent validity is indicated by an item factor loading greater than or equal to 0.5 and  $p < 0.05$  (Hair et. al. 2009) [33], AVE greater than or equal to 0.5 and CR greater than or equal to 0.7 (Fornell & Lacker, 1981) [34]. It can be

interpreted from table 3 that the factor loadings for all the items of various constructs of MSPSS are greater than 0.5 with  $p = 0.000$  indicating the significance of these values. Further, AVE for support from family, friends and significant



other dimensions is greater than 0.5 and also the construct reliabilities for these constructs are 0.86, 0.84 & 0.86 respectively ( $>0.7$ ) so, the scale possesses the good convergent validity. Discriminant validity of scale is determined by calculating the square root of AVE of the sub construct and it should be greater than its correlation of any pair of sub constructs (Chin, 1998) [35] and should be greater than or equal to 0.50 (Fornell & Lacker, 198) [34].

**Table 4:** Table showing discriminant validity of MSPSS (Indian adaptation)

Latent Construct	Support from Family	Support from Friends	Support from Significant Other
Support from Family	0.79 <sup>a</sup>		
Support from Friends	0.67**	0.78 <sup>a</sup>	
Support from Significant Other	0.65**	0.58**	0.75 <sup>a</sup>

<sup>a</sup> Square root of AVE

\*\*Significant at 0.01 level of significance (2-tailed)

The table 4 above indicate the correlation coefficients of sub constructs of MSPSS in Indian context indicating that relation between support from family and friends is 0.67 significant at 0.01 level of significance and relation between sub construct of support from significant others with friends and family is 0.58 and 0.65 respectively significant at 0.01 level of significance. The bold-faced values are representing square root of AVE of each latent construct indicating that the construct is different from other constructs and further the higher value of square root of AVE in case of all three dimensions of MSPSS in comparison to the correlation between different pairs of latent constructs establishes the discriminant validity of the scale. So, from the above discussion on results of convergent and discriminant validity of the scale, it can be well interpreted that the construct of MSPSS is valid in Indian conditions.

## 5 CONCLUSIONS

The perception of students studying in professional courses was gathered on the emotional social support they receive from different sources to assess the psychometric properties of Multidimensional Scale of Perceived Social Support (MSPSS) in Indian conditions. The internal consistency of the scale along with its subscales was calculated using Cronbach  $\alpha$  which come out to be 0.92 for total scale and ranges from 0.84 to 0.87 for different subscales. The split half coefficient of reliability was also estimated using odd even method of split and results again yielded high internal consistency of the scale. Further, CFA was applied to validate the three-factor structure of the scale and all factors were significantly confirmed as in the original scale. The scale also possesses good construct validity indicating that it is measuring the social support perceived by the respondents well in Indian conditions. So, it can be concluded from the results that scale is fit to measure social support received by Indian students and can be used in future researches on the measure.

## 6 LIMITATIONS

The results of the present study cannot be generalized to whole India as the sample was restricted only to one state

of North India. Further the other professional courses or the academic courses which were not targeted in this research may show significantly different results. Therefore, further research involving all the regions of India and different populations of students should be considered to estimate the variations in the results.

## REFERENCE

- [1] House, JS. Work stress and social support. Reading, MA: Addison-Wesley.1981.
- [2] Nelson, M & Brice, J. Emotional and Informational Support: Exploring Contrasting Influences on Human Resource Management Innovation. Journal of Organizational Culture, Communications & Conflict, vol.12, No. 1, pp. 71-82, 2008.
- [3] Schaefer, C, Coyne, JC & Lazarus, RS. The Health-Related Functions of Social Support. Journal of Behavioral Medicine, vol. 4, pp. 381-406, 1981.
- [4] Singh, K & Billingsley, B. Professional Support and Its Effects on Teachers' Commitment. The Journal of Educational Research, vol. 91, no. 4, pp.229-239, 1998.
- [5] Tardy, CH. Social Support Measurement. American Journal of Community Psychology, vol. 13, pp.187-202, 1985.
- [6] Lakey, B & Cohen, S. Social Support Theory and Measurement', In Cohen, S. 2000.
- [7] Zimet GD, Dahlem NW, Zimet SG, Farley GK. The Multidimensional Scale of Perceived Social Support. Journal of Personality Assessment vol. 52, pp. 30-41, 1988.
- [8] Zimet GD, Powell SS, Farley GK, Werkman S, Berkoff KA. Psychometric characteristics of the Multidimensional Scale of Perceived Social Support. Journal of Personality Assessment, vol. 55, pp. 610-17, 1990.
- [9] Dahlem NW, Zimet GD, Walker RR. The Multidimensional Scale of Perceived Social Support: A confirmation study. Journal of Clinical Psychology, vol. 47, pp. 756-61, 1991.
- [10] Kazarian, SS, McCabe SB. Dimensions of social support in the MSPSS: Factorial structure, reliability, and theoretical implications. J Comm Psychol, vol. 19, pp. 150-160, 1991.
- [11] Canty-Mitchell J, Zimet GD. Psychometric properties of the Multidimensional Scale of Perceived Social Support in Urban Adolescents. American Journal of Community Psychology, vol. 28, pp. 391-400, 2000.
- [12] Chou K-L. Assessing Chinese adolescents' social support: The Multidimensional Scale of Perceived Social Support. Personality and Individual Differences vol. 28, pp. 299-307, 2000.
- [13] Zhang J, Norvilitis JM. Measuring Chinese psychological well-being with Western developed instruments. Journal of Personality Assessment, vol. 79, pp. 492-511, 2002.
- [14] Clara IP, Cox BJ, Enns MW, Murray LT, Torgudc LJ. Confirmatory factor analysis of the Multidimensional Scale of Perceived Social Support in clinically distressed and student samples. Journal of Personality Assessment, vol. 81, pp. 265-270, 2003.
- [15] Edwards LM. Measuring perceived social support in Mexican American youth: Psychometric properties of

- the Multidimensional Scale of Perceived Social Support. *Hispanic Journal of Behavioral Sciences*, vol. 26, pp. 187-194, 2004.
- [16] Duru E. Re-examination of the psychometric characteristics of the Multidimensional Scale of Perceived Social Support among Turkish university students. *Social Behavior and Personality* vol. 35, pp. 443-452, 2007.
- [17] Basol G. Validity and reliability of the Multidimensional Scale of Perceived Social Support-Revised, with a Turkish sample. *Social Behavior and Personality*, vol.36, pp.1303-1314, 2008.
- [18] Rizwan M, Aftab S. Psychometric properties of the Multidimensional Scale of Perceived Social Support in Pakistani young adults. *Pakistan Journal of Psychology*, vol. 40(1), pp. 51-65, 2008.
- [19] Ng CG, Amer Siddiq AN, Aida SA, Zainal NZ, Koh OH. Validation of the Malay version of the Multidimensional Scale of Perceived Social Support (MSPSS-M) among a group of medical students in faculty of medicine, University of Malaya. *Asian Journal of Psychiatry*, vol. 3, pp.3-6, 2010. Wongpakaran N, Wongpakaran T. A revised Thai Multi-Dimensional Scale of Perceived Social Support. *The Spanish J Psychoogyl* , vol.15, no. 3, 1503-1509, 2012.
- [20] Osman A, Lamis DA, Freedenthal S, Gutierrez PM, McNaughton-Cassill M. The Multidimensional Scale of Perceived Social Support: Analyses of internal reliability, measurement invariance, and correlates across gender. *J Person Assess*, DOI: 10.1080/00223891.2013.838170, 2013.
- [21] Guan NC, Sulaiman AR, Seng LH, Ann AYH, Wahab S, Pillai SK. Factorial validity and reliability of the Tamil version of the Multidimensional Scale of Perceived Social Support among a group of participants in University Malaya Medical Center, Malaysia. *Indian Journal of Psychological Medicine*, vol. 35, no.4, pp. 385-388, 2013.
- [22] Adamczyk K. Development and validation of the Polish-language version of the Multidimensional Scale of Perceived Social Support (MSPSS). *Int Rev Soc Psychol*, vol. 26, no. 4, pp. 25-48, 2013.
- [23] Gonzlez, KGR, Hernandez, JDLF, Vilchis, MDCV. Validation of MSPSS in adolescents. Conference paper: IADR/AADR/CADR General Session and Exhibition, 2013.
- [24] Guan NC, Huai Seng L, Hway Ann AY, Ong Hui K. Factorial validity and reliability of the Malaysian simplified Chinese version of Multidimensional Scale of Perceived Social Support (MSPSS-SCV) among a group of university students. *Asia-Pacific J Public Health*, vol. 27, no. 2, pp. 225-231, 2015.
- [25] Lee SC, Moy FM, Hairi NN. Validity and reliability of the Malay version multidimensional scale of perceived social support (MSPSS-M) among teachers. *Qual Life Res*, vol. 26, pp. 221-227, 2016.
- [26] Huey Ong, AW, Seng Tan, C, Shin Kong, K, Fung Lo, K, Lee-Ng, N. A Bifactor Analysis of Multidimensional Scale of Perceived Social Support. Proceedings of International Conference, The First SouthEast Asia regional Conference of Psychology. Human Well Being and Sustainable Development, 2017.
- [27] Demirtas, HE, Watson, JC, Karaman, MA, Streeter, AM. Psychometric Properties of the Multidimensional Scale of Perceived Social Support Within Hispanic College Students. *Hispanic Journal of Behavioral Sciences*, pp. 1-13, 2018.
- [28] Trejos-Herrera, AM, Bahamon MJ, Alarcon-Vaquez, Y,Velez, JI & Stefano, V. Validity and reliability of MSPSS in Colombian adolescents. *Psycho-Social Intervention*, vol. 27, no.1, pp. 56-63, 2018.
- [29] Armonk, NY. IBM SPSS Statistics for Windows, Version 23.0.Chicago: IBM Corp, 2015.
- [30] Arbuckle, JL. Amos (Version 23.0) [Computer Program]. Chicago: IBM SPSS, 2014
- [31] Geuens, M & Pelsmaker, PD. Validity and Reliability Scores on Emotional Intensity Scale. *Educational and Psychological Measurement*, vol. 62, no. 2, pp. 299-315, 2002.
- [32] Hair, JF, Black, WC, Babin, BJ, Anderson, RE. *Multivariate Data Analysis*. Pearson New International Edition. 7<sup>th</sup> Edition, 2014.
- [33] Fornell, C & Larcker, F. Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, vol.18, no.1, pp. 39-50, 1981.
- [34] Chin, WW 1998. Issues and opinion on structural equation modeling. *MIS Quarterly*, vol. 22, no. 1, pp. 7-16, Mar 1998.