Research Paper | Open Access

Adaption and validity of the "Students' Life Satisfaction Scale» (SLSS) in Greek educational context: Psychometric properties

[1]Karapanagiotou A, [2]Rokka St, [3]Filippou F, [4]Bebetsos E., [5]Filippou K.

[1,2,3,4,]Department of Physical Education & Sport Science, Democritus University of Thrace, Greece
[5]VRIJE Universiteit Brussel
Professor Filippou F: DPESS Campus, Komotini, 69132, Greece.

ABSTRACT

The aim of this research was to cross-validate the Greek version of the "Students' Life Satisfaction Scale" in a Greek educational context. The internal consistency of the SLSS has also been examined as well as the levels of satisfaction, gender, and class attendance as factors that differentiate life satisfaction. The participants were 213 male and female students from 22 high schools in Eastern Macedonia and Thrace. The 7th grade was attended by 63, the 8th grade by 79, and the 9th grade by 77 students. Students' Life Satisfaction Scale [1] was used to collect the research data. The following statistical analyses were carried out: a. Descriptive statistics b. Exploratory factor analysis (EFA) c. Reliability analysis (Cronbach's alpha, Composite Reliability, and Average Variance Extracted) d. Confirmatory factor analysis e. T-test for Independent sample f. One-way Anova analysis. The statistical analysis of the data shows that: a. the internal coherence of the factor in both the exploratory and confirmatory factorial analyses was at high levels b. the sample is relatively satisfied with its life. c. gender does not differentiate levels of satisfaction d. the attendance class differentiates the levels of satisfaction with the smaller classes being to a greater extent satisfied. Analysis of the data shows that the Students' Life Satisfaction Scale is a reliable instrument and can be used safely in the secondary school environment.

KEYWORDS – Adolescence, wellbeing, anxiety, stress.

1. INTRODUCTION

Adolescence is one of the most critical periods of a person's life since during it takes place changes both in his physical and mental, emotional, and psychological state. Changes that significantly affect his life as an adult make puberty a key point for his mental and physical health as an adult [2].

The time limits of adolescence, its beginning, and end, are difficult if not impossible to determine precisely since there are many factors involved in its appearance and termination. Biological, physical, mental, familial/social are some of them [3]. Finally, gender is a key factor in differentiating the onset of adolescence since in girls the onset of puberty, i.e. the appearance of hormonal changes, is placed at 10-11 years, while the corresponding changes in boys are observed at the age of 11-12 years. The duration of the changes is about the same in both sexes since their end for girls is set at 15-17 years and for boys at 16-17 years [4] [3] [5].

One of the factors that contribute to unhindered and trouble-free adolescence is also how satisfied teenagers are with their lives. A disturbed family environment that causes problems in relationships with parents [6], as well as disturbed personal relationships or social exclusion and social rejection and failure at school, are some factors that contribute to the fact that adolescents are not satisfied with their lives [7].

Assessing the degree of life satisfaction not only of adolescents but also of adults led scientists to manufacture tools that would allow them to carry out such research. The Satisfaction with Life Scale (SWLS) [8] is the first, chronologically, created. It is very simple and short since it is composed of only 5 statements using a 7-scale scoring system. The scale was also used by Galankis, Lakioti, Pezirkianidis, and Karakasidou [9] in a sample of 1797 adults as well as by Lampropoulou [6] demonstrating very good behavior.

Whitwirth, Kimsey-House, and Sandhal [10] created "The Wheel of Life Scale" which assesses the satisfaction of the individual in specific areas of his life. These areas are money and finance, career and work, health, and fitness, fun and recreation, environment and community, family and friends, partner and love, growth and learning, and spirituality.

The difference between Wheel of Life and SWLS is that it evaluates, through a 10th scale, specific areas that make up one's life to enable the individual to answer questions such as why should he pay particular attention to this area? Or what should he do to increase his score in areas where he scored low and therefore increase his satisfaction?

Huebner [1] is the creator of the unique scale, "Students Life Satisfaction Scale" (SLSS), which assesses childhood and adolescent (8-18 years old) life satisfaction. The scale is composed of 7 statements using a 6-scale scoring system (1 = strongly disagree and 6 = strongly agree). Its difference with SWLS is that it contains two statements with negative wording. Three years later, Huebner [11] introduced The Multidimensional Students Life Satisfaction Scale (MSLSS). This scale is again addressed to children and adolescents aged 8-18 years. It is composed of 40 statements and the answers are given on a 4-point scale where 1= never, 2= sometimes, 3= often and 4= almost always.

The scale investigates the adolescent's satisfaction with life by looking at 5 areas that make up his life. These areas are self, friends, school, family, and living environment. The sum of all individual scores gives the total life satisfaction of the individual. But the biggest advantage of the scale is that it allows satisfaction to be effectively measured over a wide range of ages, especially young people. Below are some characteristic phrasings for each factor: Self: I am fun to be around, Friends: My friends are nice to me, School: interesting, Family: I enjoy being at home with my family, Living Environment: I like my neighbors.

Margolis, Schwitzgebel, Ozer, and Lyubomirsky [12] created the last time scale of life satisfaction. The scale is "The Riverside Life Satisfaction Scale" (RLSS) and through 6 formulations it evaluates life satisfaction. The three formulations express life satisfaction and three the desire for change in some areas of their lives. The answers are given on a 7th scale where 1 = Strongly disagree and 7 = Strongly agree. According to Margolis, Schwitzgebel, Ozer, and Lyubomirsky (2018: 9) "Unlike the SWLS, our measure includes multiple indirect indicators of life satisfaction, which increase its bandwidth. Specifically, the content of the items reflects a potentially interesting and slightly broader conception of what life satisfaction consists of, including lack of envy and absence of desire to change".

The Students Life Satisfaction Scale [1] was used in a Survey of the Greek population by Chatzargyros [13]. In this research, although it is stated by the author that "The structural validity of the research tools was examined by exploratory and confirmatory methods" ([13: 53), at no point in the survey are there any results and indicators that prove the weighting of the scale in the Greek population.

So, the aim of this research was to cross-validate the Greek version of the "Students' Life Satisfaction Scale" (SLSS) in a Greek educational context. The internal consistency of the SLSS has also been examined as well as the levels of satisfaction, gender, and grade of studies as factors that differentiate life satisfaction.

2.   FIRST SUB-RESEARCH
2.1 Methodology
2.1.1 Sample
The participants were 89 boys and girls from 10 high schools in Eastern Macedonia and Thrace. Of them, 48 (60.00%) were male and 41 (40.00%) were female students. The 7th grade was attended by 25 (28.09%), the 8th grade by 34 (38.20%), and the 9th grade by 30 (33.71%) students.

2.1.2 The SLS Scale
The scale consists of 7 items that measure life's satisfaction for male and female high school students. From them, two items (3rd & 4th) are negatively worded. The score can range from 7, the lowest, to 42, the highest. According to Huebner [1], the higher the score, the greater the satisfaction of the person. The answers were given on a six-point Likert type scale, where once stood for "strongly disagree" and 6= "strongly agree".

For the transfer of the scale to the Greek language, the researchers followed the method of double translation - back-to-back translation- as suggested by Banville, Desroriers, and Genet-Volet [14].

Then, before it was given to the students for completion, the scale was given to teachers who teach the Greek language to see if the wording of the items corresponds to the student's language level.

The scale was used by much research with good behavior: in Greece (Cronbach's α .78) [13], Germany (Cronbach's α .85) [15], and Portugal (Cronbach's α .89) [16].

2.1.3 Measurement process
The research organizers asked for permission to carry out the research from the Ethics Committee of the Democritus University of Thrace/ Greece. Permission was then requested from the Minister of Education to conduct the research at schools. Parental written permission was asked to secure students' participation in the research.

2.1.4 Statistical analysis
The following statistical analyses were carried out
   a. Descriptive statistics (M, S.D., Kaiser- Myer – Olkin, Bartlett's Test of Sphericity, and Measure of Sampling Adequacy)
   b. Exploratory factor analysis (EFA)
   c. Reliability analysis (Cronbach's alpha)

2.2 Results
Initially, the validation and adequacy of the survey data were checked to see if they could be included in the continuation of the analysis. The test was carried out using indicators/ criteria such as the Kaiser - Myer - Olkin and Bartlett's Test of Sphericity [17]{18} and the Measure of Sampling Adequacy (MSA).

In the present research, the Kaiser-Myer-Olkin index was found to be .905 while Bartlett's test of Sphericity was found at 472,139 (df = 21 & p<,001). Therefore, the survey data were suitable for factorial analysis. As regards the sample suitability index, it was found that all variables fulfilled the MSA criterion ≥.6. More specifically, the index showed values from .888 to .948 (Table 1).

From the results, listed in Table 1, of the exploratory factorial analysis of the questionnaire of "Satisfaction with Life", it was found that a factor emerged, Satisfaction with Life Satisfaction", with an eigenvalue greater than the unit explaining 71.13% of the total variation. The internal coherence of the factor, and by extension a questionnaire, was particularly high.

Table 1. Exploratory factor analysis of the SLS Scale

Items	Loading	MSA
My life is going well	.903	.888
My life is just right	.887	.941
I would like to change many things in my life	.739	.849
I wish I had a different kind of life	.862	.898
I have a good life	.888	.886
I have what I want in life	.832	.948
My life is better than most kids	.779	.927
Total variance	71.13%	
Eigenvalue	4.98	
Cronbach's α	.929	

2.3 Discussion
The aim of this first sub-research was to investigate the structural validity and the internal consistency of the SLS Scale for the Greek educational context. The results of the exploratory factorial analysis show that the Greek version of the scale produced a factor, that of life satisfaction, just as the manufacturer of the Huebner scale [1] suggests. In addition, the value of Cronbach's alpha index shows that the scale is a suitable instrument for measuring male and female students' life satisfaction from 12-15 years old.

3. SECOND SUB-RESEARCH

The aim of the second sub-research was to cross-validate the Greek version of the LSL Scale as well as the levels of satisfaction, gender, and grade of studies as factors that differentiate life satisfaction.

3.1 Methodology
3.1.1 Sample
The survey involved 124 students from 12 high schools in Eastern Macedonia and Thrace. Of them, 66 (53.23%) were male and 58 (46.77%) were female students. The 7th grade was attended by 38 (30.65%), the 8th grade by 45 (36.29%), and the 9th grade by 41 (33.06%). Both schools and students were selected by lottery considering the student potential of each region.

3.1.2 Instrument
The Greek version of the SLS Scale [1] was used.

3.1.3 Statistical analysis
The following statistical analyses were carried out
      a. Descriptive statistics (M, S.D.)
      b. Confirmatory factor analysis (CFA)
      c. Reliability analysis (Composite Reliability and Average Variance Extracted)
      d. T-test for Independent sample
      e. One-way Anova analysis.

3.2 Results
3.2.1 Confirmatory Factor Analysis
The confirmatory factorial analysis of the scale "Satisfaction with Life" was carried out through the statistical package LISREL 8.80. For the formation of the theoretical model, the proposed model produced during the first sub-research was used. The method of estimating the parameters is that of the main components [19]. The theoretical model consists of a factor (a latent variable) called "Satisfaction with Life".

The model shows good adjustment when the indicators take the below prices: h2/d.f. are <5 [20], CFI and NFI are >.90 [21], the RMSEA is <.08 [22] and the SRMR is <.05 [21]. The results of this study showed that the theoretical model showed a remarkable $x2(14)=37.51$, $x2/d.f. = 2.68$, $p < .001$. The NFI and CFI indices were found to be .97 and .98 respectively. The values of the RMSEA and SRMR also confirmed the good adjustment of the model since the value of the RMSEA was found .059 and the SRMR .031. The internal coherence of the factor, and by extension a questionnaire, was particularly high (Table 2).

Table 2. Confirmatory factor analysis

Items	Loading		MSA	(CR)	AVE
My life is going well	.92		.886		
My life is just right	.87		.947		
I would like to change many things in my life	.76		.909		
I wish I had a different kind of life	.83		.918		
I have a good life	.91		.901	.946	.716
I have what I want in life	.82		.950		
My life is better than most kids	.80		.949		
Variance		75.54%			
Eigenvalue		5.29			

3.2.2 Differences according to gender
To check whether there is a statistically significant difference due to the gender of the sample, a t-test for the independent sample was performed. The results show that statistically significant differences are observed (Table 3). More specifically, boys are to a greater extent satisfied with their lives than girls.

Table 3. Differences according to gender

Factor	Total		Boys		Girl		Significance	
	M	SD	M	SD	M	SD		
Satisfaction with life	4.35	1.33	5.24	.63	3.34	1.20	$t_{(122)}$=11.22	p = < .001

3.2.3 Differences according to class attendance

To check whether there is a statistically significant difference due to age/class attendance, a one-way ANOVA analysis was performed. From the results is obvious that there are statistically significant differences (Table 4). More specifically, the Bonferroni test finds that the students of the 7th grade are to a greater extent satisfied with the students of the 8th and 9th grade as well as the students of the 8th are to a greater extent satisfied with the students of the 9th.

Table 4. Differences according to class attendance

Class attendance	M	SD	Significance
7th	5.07	.77	
8th	4.43	1.33	$F_{(2,123)}$ = 20.958 p < .001
9th	3.42	1.60	
Total	4.35	1.33	

3.3 Discussion

The purpose of the 2nd thesis was to confirm the structural validity of Satisfaction with Life was produced in the previous research so that it can be used safely in the Greek student population. The indicators cited confirm the structural validity of the scale Satisfaction with Life. The results of the survey are in line with the results of other surveys conducted in Greece (Cronbach's a.78 [13], Germany (Cronbach's a .85) [15], and Portugal (Cronbach's a .89) [16].

Regarding the differentiation of life satisfaction due to sex, the results of the survey found that gender differentiates the levels of satisfaction with boys feeling more satisfied with girls. The results of the survey are consistent with the results of other surveys such as Bisegger, Cloetta, von Bisegger, Abel, and Ravens-Sieberer [23], Goldbeck, Schmitz, Besier, Herschbach, & Henrich [24], Tsouvelas and Pavlopoulos [25] and Woynarowska, Tabak, and Mazur [26] according to which girls are less satisfied with their lives than boys. In addition, girls are to a lesser extent satisfied with boys when the degree of self-satisfaction is explored. According to the above researchers, this result is directly related both to the changes that take place in the physiology of the adolescent organism and to the beauty standards that apply in every era and every culture.

The results of the survey are also consistent with the results of other surveys exploring the classroom as a factor in differentiating satisfaction. According to the results of these surveys [23] [24] [27] [25] age is negatively correlated with life satisfaction. This means that the older the age increases so does the satisfaction with life. This is also observed in the present survey according to the results of which the smaller the attendance class, the greater the satisfaction of students with their lives. This result, according to Goldbeck et al. [24] is normal and expected since adolescence is the stage during which the transition to adulthood takes place through the challenges it offers.

Erikson [28] expressed a similar view several years ago, saying that adolescence is a stage of personal search and exploration that leads him to try different behaviors and roles. The ultimate and ideal goal of these behaviors is the formation of a healthy personality. The "identity crisis" observed during the stage of adolescence is the cause of the decrease in the adolescent's satisfaction with his life.

4. GENERAL DISCUSSION - CONCLUSIONS

The purpose of this work was to weigh and check the structural validity of the scale Satisfaction with Life so that it can be used in the Greek educational system of secondary education. The purpose of the research was realized through the realization of an Exploratory Factor Analysis, a Confirmatory Factor Analysis, and a Reliability Analysis. The statistical analysis of the data as well as the discussions that followed revealed the structural validity of the Greek version of the scale and its suitability for conducting surveys on the Greek student population.

In addition, the research aimed to explore gender and class of attendance as factors for differentiating life satisfaction. The statistical analysis of the data as well as the discussion that followed revealed the unanimity of the results of this survey with the results of other surveys from all over the world. According to the results, both gender and class of attendance vary the levels of life satisfaction with boys being more satisfied than girls. to a greater extent students of younger ages are satisfied with their colleagues of the larger classes.

REFERENCES

1. E.S. Huebner, Further validation of the students' life satisfaction scale: the independence of satisfaction and affect ratings, Journal of Psycho-Educational Assessment, 9, 1991, 363-368.
2. St. Kalfountzou, Life Satisfaction, and Adolescence, post-graduate these, Open University of Cyprus, 2019.
3. G.C. Patton, and R. Viner, Pubertal transitions in health. Lancet (London, England), 369(9567), 2007, 1130–1139. doi.org/10.1016/S0140-6736(07)60366-3
4. M.A. Herman-Stahl, O.S. Ashley, M.A. Penne, … M.S. Williams, and J.C. Gfroerer, Moderation and mediation in the relationship between mothers' or fathers' serious psychological distress and adolescent substance use: finding from a national sample, Journal of Adolescent Health: official publication of the Society for Adolescent Medicine, 43(2), 2008, 141–150. doi.org/10.1016/j.jadohealth.2008.01.010
5. D.E. Saxbe, and R.L. Repetti, Brief report: fathers' and mothers' marital relationship predicts daughters' pubertal development years later, Journal of Adolescence, 32(2), 2009, 415-423 doi.org/10.1016/j.adolescence.2008.06.009
A. Lampropoulou, The role of the family in adolescents' subjective well-being, Psychiatriki, 29(2), 2018,172-182.
6. D. Cicchetti, Development and psychopathology, in D. Cicchetti and D.J. Cohen (Eds), Developmental psychopathology: theory and method (vol 1), 2nd ed. Hoboken NJ: John Wiley & Sons, 2006 1-23.
7. E. Diener, R.A. Emmons, R.J. Larsen, and S. Griffin, The Satisfaction with Life Scale, Journal of Personality Assessment. 49, 1985, 71–75, doi:10.1037/1040-3590.5.2.164
8. M. Galankis, A. Lakioti, C. Pezirkianidis, and E. Karakasidou, Reliability and validity of the Satisfaction with Life Scale (SWLS) in a Greek sample, The International Journal of Humanities & Social Studies, 5(2), 2017, 120-127.
9. L. Whitworth, H. Kimsey-House, and P. Sandhal, Co-active coaching, (Palo Alto, CA, Davies-Black Publishing, 1998).
10. E.S. Huebner, Preliminary development and validation of a multidimensional life satisfaction scale for children, Psychological Assessment, 6(2), 1994, 149–158. doi.org/10.1037/1040-3590.6.2.149
11. S. Margolis, E. Schwitzgebel, D.J. Ozer, and S. Lyubomirsky, A New Measure of Life Satisfaction: The Riverside Life Satisfaction Scale, Journal of Personality Assessment, 2018, doi.org/10.1080/00223891.2018.1464457
12. G. Chatzargyros, Determining Factors of Well-being and Happiness in Adolescence Students, post-graduate these. Department of Physical Education & Sport Science, Aristotle University of Thessaloniki, Greece, 2018.
13. D. Banville, P. Desroriers, and Y. Genet-Volet, Translating questionnaires and Inventories using a cross-cultural translation technique, Journal of Teaching in Physical Education, 19, 2000, 374-387.
14. M. Weber, W. Ruch, and E.S. Huebner, Adaptation and initial validation of the German version of the Student's Life Satisfaction Scale (German SLSS), European Journal of Psychological Assessment, 29(2), 2013, 105–112. doi.org/10.1027/1015-5759/a000133
15. S.C. Marques, J.L. Pais-Ribeiro, and S.L. Lopez, Validation of a Portuguese Version of the Students' Life Satisfaction Scale, Applied Research in Quality of Life, 2(2), 2007, 83-94. DOI: 10.1007/s11482-007-9031-5
16. J.F. Hair, W.C. Black, B.J. Babin, R.E. Anderson, and R.L. Tatham, Análise Multivariada de Dados, (Porto Alegre, Bookman 2009).
17. K.C. Teixeira, A.F. Rosado, and C.S.S.H. Nunes, Psychometric Properties of the Three-Dimensional Anxiety Scale for Sport (Etape) through CFA and IRT Approaches, Revista De Psicología Del Deporte (Journal of Sport Psychology), 29(1), 2020, 95–104.
18. P.M. Bentler, EQS structural equations program manual, (Multivariate Software, 1995).
19. P.M. Bentler, Comparative fit indexes in structural models, Psychological Bulletin, 107(2), 1995, 238–246. doi.org/10.1037/0033-2909.107.2.238
20. L. Hu, and P.M. Bentler, Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives, Structural Equation Modeling, 6, 1999, 1-55.
21. M.W. Browne, R. Cudeck, Alternative ways of assessing model fit, in: K.A. Bollen, and J.S. Long (eds). Testing Structural Equation Models, Newbury Park, C.A.: Sage; 1993 136-162.

22. C. Bisegger, B. Cloetta, U. von Bisegger, T. Abel, and U. Ravens-Sieberer, Health- related quality of life: gender differences in childhood and adolescence, Sozial- Und Präventivmedizin SPM, 50(5), 2005, 281–291. doi:10.1007/s00038-005-4094-2

23. L. Goldbeck, T.G. Schmitz, T. Besier, P. Herschbach, and G. Henrich, Life satisfaction decreases during adolescence, Quality of Life Research, 16(6), 2007, 969–979. doi:10.1007/s11136-007-9205-5

24. G. Tsouvelas, and V. Pavlopoulos, Adolescence and life satisfaction. The contribution of developmental and demographic factors, Proc. 1st Conf. on Children's Welfare, Athens, 2019, 41-52 http://www.childrenwelfaresm.com/el

25. B. Woynarowska, I. Tabak, and J. Mazur, Self-reported health and life satisfaction in school-aged children in Poland and other countries, Medycyna wieku rozwojowego, 8(3), 2004, 535–550.

26. M. Graue, T. Wentzel-Larsen, B.R. Hanestad, B. Båtsvik, and O. Søvik, Measuring self-reported, health-related, quality of life in adolescents with type 1 diabetes using both generic and disease-specific instruments, Acta Paediatrica, 92(10), 2003, 1190–1196. doi:10.1080/08035250310005657

27. E.H. Erikson, Childhood and society, (W W Norton & Co, 1950).