

Life Satisfaction Index for the Third Age (LSITA): A Measurement of Successful Aging

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Abstract

The purpose of this research was to develop an updated scale based on the framework that Neugarten, Havighurst and Tobin (1961) used to design the Life Satisfaction Index- Form A (LSI-A). The new instrument, the Life Satisfaction Index for the Third Age (LSITA), was used to assess 654 third age adults in a measurement development process to establish the LSITA's psychometric properties. These individuals were Midwestern United States adults from selected third age learning events, retirement centers, church events, community centers and the general public. The participants were all over fifty years old consistent with the definition of the third age. The authors had been involved in a research study that used LSI-A that led to an appreciation of the importance of measuring successful aging as well as the need to apply current statistical techniques to a revised instrument. The LSITA was designed and its psychometric properties assessed using the eight-step design process from DeVellis (1991). The reliability of the 35-item scale was .93 with satisfactory content, construct and criterion validity. In addition, confirmatory factor analysis was performed using structural equation modeling and a very satisfactory goodness of fit was obtained. The new instrument has been made available to researchers by emailing ajbarret@purdue.edu. The expectation is that the researchers will provide the author with an electronic copy of their responses to add to the database.

Successful Aging and Life Satisfaction in the Third Age

More and more individuals are arriving at the threshold of the third age. The simplest way of considering the third age is the period of life that begins when the responsibilities for the care of others has ended and ends with decrepitude, debility and death (Laslett, 1996). Understanding the meaning of aging that is experienced in the third age of life, the influences that bring about a more positive internal sense of what is happening, and an acceptance of the inevitable aging process are areas of research that can benefit all adults. It was to this purpose that Bernice Neugarten, Robert Havighurst, and Sheldon Tobin developed the original forms of the Life Satisfaction Index (1961). The 20 item Life Satisfaction Index – Form A (LSI-A) has become the most used survey instrument for older adults (Lawton, 1977, p. 13 as cited in Helmes, Goffin & Chrisjohn, 1998). As Dychtwald explained in *Age Wave*, the impending entry of the post World War II baby boomers into the third age of life over the next decade will mean that over 70 million Americans will become third aged adults (1999; Dychtwald & Flowers, 1989).

The LSI-A was designed to assist a group of gerontologists and psychologists undertaking a major research project into adult life in Kansas City, Missouri in the early 1960's. While the name of the instrument involved the term life satisfaction, this expression was considered "an operational definition of 'successful aging'" (Neugarten et al., 1961). Successful aging as contemplated by Neugarten and her associates was defined in a more complex manner than the attainment of goals or the feeling good about oneself.

The new instrument, the Life Satisfaction Index for the Third Age (LSITA), was based on this work of Neugarten and her colleagues (1961). The LSITA was crafted as a research and

measurement tool that would be useful in the fields of Adult and Community Education, Gerontology, Psychology, Health and Medical Sciences, and other social science disciplines. The research applications can include the study of those factors that are contributors or barriers to achieving a sense of aging in a positive fashion in third age individuals (Settersten, 2002; Pavot, Diener, Colvin, & Sandik, 1991; Robinson, Shaver & Wrightsman, 1991).

It was the authors' involvement in just such a research project reported at an earlier Midwest Research-to-Practice Conference (Murk, Garofalo, Skinner, & Barrett, 2000), that generated their curiosity about the development of a revised instrument to measure successful aging. This study was designed to assess the contribution that engagement in third age learning events had on the participants' perceptions of successful aging. The LSI-A was one of the instruments used in the study. It was a powerful contributor to the understanding of the research questions in the Murk et al. study (2000). However the authors concluded and were supported by other researchers (Settersten, 2002; Robinson, Shaver & Wrightsman, 1991) that the psychometric properties of the LSI-A could be improved by the application of the latest statistical processes. Powerful computer based statistical analysis tools were not available to Neugarten and her colleagues in the early 1960's when the LSI-A was developed. The results of the instrument development and demonstration project for the new LSITA is the topic of the research study discussed in t *Life* his report.

Satisfaction and its Five Factors

Life Satisfaction is a theoretical construct that can not be observed directly, and is, therefore, a latent variable. Latent variables are defined as factors that must be measured indirectly based on operational definitions (Byrne, 2001). Neugarten, Havighurst, and Tobin's theoretical framework provided an operational definition of the latent variable of life satisfaction which consists of the five following variables.

The Five Factors of Life Satisfaction

Zest vs. apathy relates to an enthusiasm of response to life in general and was not related to any specific type of activity, such as social or intellectual engagements. A subject who was enthusiastic about sitting home reading was scored as high as an energetic person was on this scale. Physical energy as well as intellectual energy and other highly involved pursuits contributed to a high score (Neugarten et al., 1961).

Resolution and fortitude measures the respondents' active acceptance of personal responsibility for their lives rather than passively accepting or condoning what has happened to them. Erikson's integrity is similar in conceptualization and relates to the meaningfulness of life and the lack of fear of death (Neugarten et al., 1961).

Congruence between desired and achieved goals measures the relative difference between desired and achieved goals caused one to be satisfied or dissatisfied with life in this rating (Neugarten et al., 1961).

Self-concept is based on one's present emotional, physical, and intellectual dimensions. Persons who do not feel old but are concerned with their appearance and judge themselves to be wise and competent tend to rate themselves higher on this factor. Past successful living may contribute to this component but only indirectly.

Mood tone. The final factor, mood tone, relates to optimism and happiness and other positive affective responses. Depression, sadness loneliness, irritability, and pessimism are feelings that would result in very low scores. Assessing life satisfaction is more complex than just measuring happiness but happiness with the present life state is an important contributor (Neugarten et al., 1961).

LISTA Scale Development Process

The process used to develop the LSITA scale was guided by DeVellis (1991). According to DeVellis (1991) the outcome of the scale development process should be a measurement with known reliability and an understanding of the scale’s validity. His eight steps in developing measurement scales were as follows: Step 1: Determine clearly what it is you want to measure. Step 2: Generate an item pool. Step 3: Determine the format for measurement. (Construct Validity) Step 4: Have initial item pool reviewed by experts. (Content Validity) Step 5: Consider inclusion of validation items. (Criterion Validity) Step 6: Administer items to a development sample. Step 7: Evaluate the items. (Reliability) Step 8: Optimize scale length. (DeVellis, 1991, pp. 51-90)

Instrumentation

The data collected from the participants included selected demographic information as well as responses on the LSITA and two instruments that were used to establish criterion reliability, the Salamon-Conte Life Satisfaction in the Elderly Scale (SCLSES) and the Satisfaction With Life Scale (SWLS). The SCLSES and SWLS were used as criteria to establish measures of criterion validity. There was a total of 101 response items for each participant.

Demographic data

Information on age, gender, socioeconomic status, education and employment background, and marital status was collected and analyzed.

LSITA

The LSITA consists of five factors derived from 35 items to be assessed for their contribution to the reliability and validity of the revised scale. Twenty of the items were restated items from Neugarten’s original LSI-A. Fifteen additional items were developed to be consistent with the theoretical foundations of the original LSI-A. An expert panel reviewed all items for issues of construct validity.

SCLSES

The Salamon-Conte Life Satisfaction in the Elderly Scale (SCLSES) consists of 40 items contributing to eight sub-scales, five of which are similar to the LSI-A’s as noted in the table below (Salamon & Conte, 1984). The other three factors measured in the SCLSES are Health, Finances, and Social Contacts.

LSI-A and LSITA Factors	SCLSES Factors
Zest vs. Apathy	Daily Activities
Resolution and Fortitude	Meaning
Congruence of Goals	Goals
Self-concept	Self-concept
Mood Tone	Mood

Figure 1: Comparison of LSI-A/LISTA Factors and SCLSES Factors (Neugarten et al., 1961 and Salamon & Conte, 1984)

SWLS

The Satisfaction With Life Scale (SWLS) is a global measure of happiness, defined as the cognitive, judgmental component of satisfaction with life. In contrast, the LSITA is a measure of life satisfaction as represented in successful aging. Using the SWLS as one of the criterion measures would demonstrate whether the revised LSITA correlates with instruments that

measure a more general life satisfaction construct as well as the construct of successful aging.

Data Analysis

Responses from 654 subjects on the five instruments were analyzed using two statistical software applications: SPSS and AMOS. SPSS was used to establish the scale reliability and descriptive statistics from the sample data. AMOS was used to demonstrate the underlying structural equation model supported by the sample data and its goodness of fit with Neugarten's theoretical framework.

Coefficient Alpha Goal

For a standard of reliability, DeVellis (1991) stated "his personal comfort ranges for research are as follows: below .60, unacceptable; between .60 and .65, undesirable; between .65 and .70 minimally acceptable; between .70 and .80, respectable; between .80 and .90, very good; much above .90, one should consider shortening the scale" (p. 85). The reliability coefficient for evaluation uses would be at least .70 and preferably .80 for groups and at least .90 for individual decision making (Nunnally, 1978). The LSITA scale development process achieved an excellent reliability with a Cronbach $\alpha = .93$.

At this level of reliability, LSITA can be used in individual assessments as well as group research. The individual factors attained an adequate level of reliability ranging from a high of $\alpha = .84$ to a low of $\alpha = .56$ for the self-concept factor. The reliability of LSITA ($\alpha = .93$) compared favorably to the reliability of the criterion scales, namely, $\alpha = .93$ for the SCLSES and $\alpha = .85$ for the broader SWLS. In addition, the reliability of the five SCLSES factors that matched up with the five factors from LSITA had a reliability of $\alpha = .91$. In summary, all of the instruments had excellent reliability in this research study. This was important not only for the instrument under development, the LSITA, but it was an important factor for using the SWLS and SCLSES as criteria for the LSITA since high reliability is a requisite for such criteria.

Measurement Validity Goals Criterion

The criterion validity process compared the scores of LSITA with two external criteria known or believed to measure the attribute or similar attributes under study (Kerlinger, 1973). A significant correlation between the SCLSES and SWLS would demonstrate that the LISTA was consistent with the theoretical constructs that were represented in these two instruments. These two scales, the SCLSES and the SWLS were used to "provide support for claims of validity or, alternatively, provide clues if the set of items did not perform as anticipated" (DeVellis, 1991, p. 77).

Table 1

Correlations between associated LSITA and SCLSES Factors (See Figure 1)

LSITA Factors	SCLSES Factors	Correlation
Zest vs. Apathy	Daily Activities	.75
Resolution & Fortitude	Meaning	.65
Congruence of Goals	Goals	.56
Mood Tone	Tone	.66
Self-concept	Self-concept	.60

All correlations were significant at the .01 level.

The correlation coefficient between the LSITA and the SCLSES was .78. The correlation coefficient between the LSITA and the SWLS was .70. These Pearson correlations exceeded the expectation of at least .70 for the SCLSES and .50 for the SWLS and were good demonstrations of criterion validity. In addition, the correlation of the LSITA with the five

matching factors in the SCLSES was .78. The individual matching factors had correlations ranging from .56 to .74 (See Table 1).

Construct validity

In seeking evidence of construct validity related to a measuring instrument, the researcher tests hypotheses bearing on the underlying theoretical framework...One can test for the validity of (an instrument's) underlying factorial structure; either exploratory or confirmatory factor analytic procedures would be used, depending on the development status of the instrument. If an instrument is in the embryonic stage of development, then exploratory procedures would be most appropriate; if, on the other hand, its development has been completed and, thus, it purports to measure one or more constructs, then confirmatory factor analyses would be most appropriate (Byrne, 1996, p. 43).

The instrument development process in the present research project was based on the revision and enhancement of a well-established measurement scale, the LSI-A. Confirmatory factor analysis was deemed appropriate to the goals of the study.

Confirmatory factor analysis (CFA) and structural equation modeling (SEM)

CFA, in contrast to exploratory factor analysis, involves an *a priori* specification of “which items in a measurement should group together as indicators of shared latent variables. In this type of (factor) analysis, the investigator explicates the desired factor structure when submitting the data for factor analysis and the program provides an indication of how well the actual data conform to the specified factor pattern” (DeVellis, 1991, p. 108). “Structural equation modeling (SEM) is a statistical methodology that takes a confirmatory (i.e., hypothesis testing) approach to the analysis of a structural theory bearing on some phenomenon (Byrne, 2001, p. 3). One of the statistical processes in this research project, SEM, was used to assess the goodness of fit between the hypothetical model under study and the model derived from the collected data.



Figure 2: Hypothesized and data derived five factor LSITA Models Using AMOS.

The five factors represented as rectangles are observed variables and the LSITA represented as an ellipse is the theoretical construct. The single headed arrows represent the relationships of the impact of one variable on another. The measurement error terms are also displayed. The Goodness of Fit Index for these models was the Comparative Fit Index with a score close to .95 considered to be a good fit. The CFI score obtained in the Scale Development Process of .939 in demonstrated a more than adequate goodness of fit between the hypothesized model for LSITA and the model derived from the sample data. The Normed Fit Index of .937 and the Incremental Fit Index of .940 support this result. The structure equation modeling process supported the LSITA's construct validity.

The theoretical framework that was developed by Neugarten et al. in 1961 to appraise life satisfaction in adults over the age of fifty has withstood the many cultural and social changes that have occurred and continues to provide the structure for assessing this important construct. As the baby boom generation proceeds on its life's journey into their third age, the ability to measure successful aging will be very useful to researchers and practitioners in adult education, gerontology, medical sciences, and other fields. At least as important as the ability to assess life satisfaction in the third age is the knowledge of the theoretical components that form the construct. This understanding provides the ability to propose activities that will influence the component and thereby change subjective sense of well-being.

The research study participants provided several insights into their thought process as they were completing the surveys. One woman stated that she would have had a higher score if her husband had not recently passed away. And she assured me that it would continue to improve as time passed. Another respondent expressed her gratitude for having the opportunity to think about the items and her answers. These and other similar comments affirmed the interest in understanding aging and its effects and demonstrated a resonance of the concepts in the individuals. Additional qualitative and quantitative research into the theory is warranted.

Implications for Research and Practice

The LSITA can be used to assess the barriers and contributors to the attainment of life satisfaction in third age individuals. With the high degree of reliability achieved in the demonstration project, researchers and practitioners can use this scale in both large group projects and in individual cases.

Clinical research in elderly wellness program design, for example, could provide insight into strategies to prevent, intervene with, and evaluate alternatives to enhance the sense of successful aging in adults. The five components of LSITA; zest vs. apathy, resolution and fortitude, congruence between expected versus achieved goals, mood tone and self-concept; could be individually targeted as more narrow areas of investigation. For example, the effects of an exercise program on zest vs. apathy or an autobiography writing program on resolution and fortitude could be studied as well as the effects on the individual component scores on the entire scale. Program directors could also use the LSITA scores as program outcome measures for the services they render to the older adult. An increase in the average score on the scale as an achieved program goal would provide a concrete and measurable metric for Council on Aging and community center initiatives. The most interesting effect on practitioners in adult education, psychology, and gerontology is the increased reliability of LSITA and the ability to apply the revised instrument in individual as well as group decision making and evaluations. LSITA can be an important tool in diagnosing barriers to successful aging and determining if practice interventions are improving the attainment of intended goals. In fact, improvements in life satisfaction in individual cases can be established as treatment goals since progress toward such a goal can be reliably measured using LSITA. The achievement of successful aging can be simply, reliably and validly measured using LSITA, the Life Satisfaction Index for the Third Age.

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References available by contacting Andrew Barrett at ajbarret@purdue.edu