Living Standards for Elders

Summary Report

Measuring Living Standards of Older People: Development and Validation of the LSCAPE

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Measuring living standards of older people using Sen's Capability Approach: Development and Validation of the LSCAPE (Living Standards Capabilities for Elders) and LSCAPE-6.

Abstract

Disparities in socioeconomic status and how such disparities affect the health of older people is an important issue for policy makers in the context of population ageing. As older people live in different types of economic circumstances to those who are working, and because, as people age, their desires and needs are qualitatively different to those of younger generations, there is a need for measures of economic living standards which are appropriate for older people. This paper reports on the development and validation of a measure of living standards for older people based on Sen's Capability Approach. Using this approach, living standards are conceptualised as varying from constraint to freedom rather than from hardship to comfort. The measure was included in the NZLSA survey of 3,923 New Zealanders aged 50-87 years to test convergent and discriminant validity and to compare the measure with an existing measure of living standards. The pattern of associations with measures of economic position and wellbeing indicate that this measure is a valid indicator of material wellbeing. In addition, this measure discriminates better at the higher end of the living standards spectrum than the ELSI-SF which assesses living standards from hardship to comfort. From this, a short form of the measure has been developed which offers a conceptually based and valid measure useful for survey research with older people.

Introduction

As the population ages the effects of disparities in socioeconomic status and how they may affect the health of older people is an important issue for policy makers (Jatrana & Blakely, 2013). Because older people generally live in different types of economic circumstances to those who are working, and because, as people age, their desires and needs are qualitatively different to those of younger generations, there is a need for measures of economic living standards which are appropriate for older people. Income has been a popular indicator of economic circumstances, but has limitations. Income does not include other financial resources or advantages, does not account for changes across time, does not include varying demands on that income, and is not reported accurately or willingly by many respondents (Pfoertner, et al., 2011; Renahy, et al., 2012; Saunders, et al., 2008). These issues are particularly relevant to older people whose incomes change as they move into retirement, who may have varying levels of assets, who are less likely to have dependents although they have lower incomes, and who may be sensitive to reporting their income. To counteract these shortcomings, an alternative approach has been developed which focuses on what people consume, their ability to engage in recreation, and other forms of social participation (Halleröd, 2006; Jensen et al., 2003). Although measures based on this approach have utility, there are three main problems with the validity of measures using this approach. First, the focus on exclusion and deprivation is appropriate to establish levels of poverty, but does not add very much to explanations of inequalities at

levels of economic wellbeing beyond deprivation (Salmond & Crampton, 2012). Secondly, consensual measures of living standards depend upon widespread agreement regarding valued consumer goods, social activities, and luxuries that members of a society aspire to (McKay, 2004). Thirdly, consensual measures are based on an assumption that the access to economic resources is unrelated to personal or cultural preferences. However, evidence suggests that people adapt their preferences to match their economic conditions (Halleröd, 2006). The problems with the consensual assessment of relative deprivation are highlighted when evaluating the living standards of older people. Research using consensual measures shows that age has an important confounding effect on the assessment of living standards. The actual reduction in living standards that accompanies ageing, and changes in circumstances and needs, combine with a cohort effect reflecting the standards of a particular generation to produce a particular continuum of living standards. Sen's capability approach offers an opportunity to move beyond resources.

Rather than focus on the consumption of goods, Sen's (1982) economic analysis distinguishes between a physical, social, or environmental good, the utility or benefit of the good, and the functioning, or individual's use, of the good. For Sen, these 'functionings' include basic needs such as being healthy and socially respected, but his theoretical focus is on a person's 'capability' or the extent to which they have the ability to function in a particular valued way, whether or not they choose to do so (Sen, 1993). 'Capability' describes what individuals are *able* to do and be, and the level of their freedom to pursue the lives they have reason to value. From a capability perspective, living standards are about command over physical, social, and environmental goods and the possibilities made available by these goods. A capabilities approach takes into account differences in health, education, resourcefulness and social connections that may influence the process of transforming resources into living standards and additionally accounts for social and cultural diversity in preferences. People may prefer different ways of living, but those with higher standards of living have more freedom to choose what they prefer.

To assess living standards of older people in terms of capabilities, we began with a qualitative study of 143 interviews with people aged 63 to 93 years in New Zealand (see Breheny, et al., in press) for full details of the initial development of the measure). The aims of the present study were (a) to assess the reliability and validity of the LSCAPE and (b) to develop and test a short-form of the measure: LSCAPE-6.

Method

Study Sample

The LSCAPE was included in the 2012 postal survey of the New Zealand Longitudinal Study of Ageing (NZLSA) involving a population sample of 3,923 New Zealand adults aged 50-87 years (see http://nzlsa.massey.ac.nz/ for further information). Of the 3756 questionnaires received, 2968 were returned (79% response rate). Demographic information for the sample is displayed in Table 1.

Measures

LSCAPE Measure of Living standards. The LSCAPE comprises 25-items that assess the living standards of older people across six domains (Table 2): healthcare, social integration, contribution, enjoyment, security, restriction (Breheny et al., in press) using a 5-point response format anchored at 'not at all true for me' and 'definitely true for me' (M = 83.4, SD = 22.3, alpha = .96). The following were used to assess convergent and discriminant validity of the LSCAPE scale and subscales:

Living Standards The Economic Living Standards Index short form (ELSI-SF; Jensen et al., 2002) comprises 25 questions that assess restrictions in the ownership of household items, restrictions in social participation, the extent to which respondents economised to keep living costs down, and self-rated satisfaction with living standards. Scores are combined (Jensen, et al., 2002) to form a composite score (0-31), with higher scores reflecting greater economic living standards (*M*=24.2, *SD*=5.6).

Life satisfaction was assessed with a single item (All things considered, how satisfied are you with your life as a whole these days?; (Inglehart, Basañez, Diez-Medrano, Halman & Luijkx, 2004)) using a five-point response scale anchored at 'very dissatisfied' and 'very satisfied' (M = 4.1, SD = 0.8).

Happiness was assessed with a single item (In general, how happy or unhappy do you usually feel?; (Fordyce, 1988)) using an eleven-point response scale anchored from 'extremely unhappy' to 'extremely happy' (M = 7.8, SD = 1.8).

Health was assessed using the SF12 health measure, consisting of 12 questions which provide summary scores for physical health and mental health (Ware, Kosinski, & Keller, 1996). Scores ranged from 11-69 for physical health (M = 49.9, SD = 10.7) and 15-68 for mental health (M = 49.6, SD = 7.6)

Quality of life (QOL) was assessed with an 8-item measure (*The EUROHIS-QOL 8-item index;* Schmidt, Muhlan, & Power, 2006), with higher scores indicating better QOL (*M*=33.0, *SD*=5.0; alpha = .85).

Other demographic measures included age, gender, relationship status, highest qualification, retirement status, annual personal income, and total worth of assets.

Overview of Data Analysis

The dataset was split into two samples, one for psychometric testing of the LSCAPE; and one to develop the LSCAPE-6 short form. Reliability was evaluated by assessing internal consistency and item-total correlations of the scales and subscales. Correlation analyses were conducted to test discriminant validity for the sub-scales.

Table 1. Demographic profile of the sample

	N	Valid %	Mean (SD)
Age in 2012 (50-87)			66.1 (7.8)
50-59	318	11.1	
60-69	1067	37.2	
70-79	1124	39.2	
80-89	361	12.6	
Gender			
Male	1287	44.9	
Female	1581	55.1	
Descent			
Māori	1017	35.6	
Non- Māori	1843	64.4	
Relationship status			
Partner	2071	26.8	
No partner	760	73.2	
Highest Qualification			
High school or less	1457	51.2	
Post- high school	1389	48.8	
			$34,615
Personal income (after tax)			($25,601)

Note: Ns will vary due to missing data

Results

Mean item and subscale scores for the LSCAPE are shown in Table 2, along with standard deviations, Cronbach's alphas and factor loadings. The mean total LSCAPE score for this subsample was 84.7 (SD = 22.7). Corrected item-total correlations for the 25-item LSCAPE ranged from .46 to .82, whilst for the individual subscales these were as follows: healthcare (.65-.71), social integration (.62-.70), contribution (.68-.78), enjoyment (.62-.69), security (0.69-0.82), and restriction (0.57–0.63). The alpha scores (see Table 2) ranged from 0.81 to 0.90. The alpha reliability coefficient for the 25-item LSCAPE was .96, indicating excellent internal consistency.

Table 2. Mean scores, standard deviations, factor loadings and Cronbach's alpha coefficients for the LSCAPE subscales

	Mean	SD	Cronbach's alpha	Factor loading
Health Care	15.30	4.15	0.85	
1 I can afford anything I need to remain well	3.74	1.22		0.80
2 I can afford all that I need to be healthy	3.96	1.17		0.72
3 I can afford to go to a medical specialist if I need to*	3.57	1.41		0.77
4 I can get all the Health Care I need	4.00	1.15		0.78
Social Integration	14.17	4.11	0.83	
5 I am able to visit people whenever I wish*	3.81	1.19		0.70
6 I am able to travel as much as I would like	2.80	1.39		0.74
7 I am able to take part in any regular activities I want to	3.87	1.20		0.70
8 I am able to go on special outings	3.70	1.23		0.81
Contribution	12.36	4.40	0.87	
9 I am able to give to others as much as I want*	3.00	1.34		0.86
10 I can provide for others when I wish	3.21	1.29		0.76
11 I can help people whenever I want	3.35	1.24		0.84
12 I can give as much as I like to charity or the church	2.85	1.43		0.73
Enjoyment	14.70	3.96	0.83	
13 I am able to follow my interests	3.79	1.12		0.76
14 I am able to do all the things I love*	3.69	1.22		0.76
15 I can have everything I need to be happy	3.70	1.20		0.69
16 I can have regular treats	3.60	1.22		0.78
Security	12.81	4.61	0.90	
17 I expect to have enough money to last my lifetime	3.06	1.38		0.90
18 I expect a future without money problems*	3.04	1.34		0.83
19 I have enough money to feel secure about the future	3.18	1.33		0.90
20 I have enough money for unexpected costs	3.45	1.28		0.76
Restriction	15.96	5.07	0.81	
21 My choices are limited by money*	2.96	1.39		0.69
22 I have to be careful with spending	3.49	1.27		0.67
23 Lack of money stops me from doing things	2.63	1.37		0.68
24 More money would make my life easier	3.61	1.43		0.72
25 There are things I would like to buy but cannot afford	3.26	1.43		0.65

**** LS 6 items***

Confirmatory Factor Analysis

CFA was used to test the extent to which the data conform to the six-factor model previously identified (Breheny et al., in press), with Māori and Non-Māori subsets tested separately. The results indicated good model fit for all but the Security subscale. Modification indices indicated that significant model improvement would be achieved by removing one of the security items (item 19) and allowing some error terms to covary. Overall, the results support the same factor structure for both subsets (Māori and Non-Māori). The Cronbach's alpha reliability coefficient for the revised 3-item security subscale was .87 and the reliability coefficient for the revised 24-item LSCAPE remained at .96, indicating excellent internal consistency.

Table 3. *Pearson's Correlations between the Living Standards Subscales and Various Measures*

Subscale	Healthcare	Social Integration	Enjoyment	Contribution	Security	Restriction	LSCAPE-24
Subscale							
Health care	1						
Social Integration	.786**	1					
Enjoyment	.797**	.841**	1				
Contribution	.716**	.774**	.776**	1			
Security	.739**	.743**	.764**	.766**	1		
Restriction	-.487**	-.510**	-.527**	-.585**	-.598**	1	
LSCAPE-24	.864**	.892**	.899**	.892**	.883**	-.742**	1
ELSI-SF	.660**	.673**	.674**	.624**	.655**	-.596**	.751**
Total Worth of Assets (≤$500,000/>$500,000)	.341**	.310**	.316**	.307**	.356**	-.321**	.377**
Personal Income	.227**	.233**	.204**	.251**	.186**	-.266**	.270**
Quality of Life	.454**	.508**	.520**	.416**	.422**	-.322**	.506**
Life satisfaction	.316**	.370**	.410**	.308**	.345**	-.263**	.385**
Happiness	.215**	.251**	.268**	.203**	.227**	-.103**	.239**
Self-rated Health	.276**	.325**	.311**	.238**	.210**	-.190**	.299**
Age	.053*	.052*	.055*	.041	.176**	-.087**	.088**
Gender (male/female)	-.009	-.020	.007	.000	-.007	-.016	-.001
Relationship Status (no partner/partner)	.089**	.116**	.066*	.043	.056*	-.012	.071**
Retirement Status (not retired/retired)	.011	.007	.044	.024	.151**	-.055*	.053*
Descent (Non-Māori/Māori)	-.122**	-.084**	-.088**	-.058*	-.095**	.067*	-.098**
Highest Qualification (high school or less/post high school)	.092**	.051	.065*	.090**	.055*	-.117**	.094**
Location (urban/rural)	-.043	-.033	-.049	-.071**	-.060*	.044	-.059*

**. Correlation is significant at the 0.01 level (2-tailed) *. Correlation is significant at the 0.05 level

Correlational Analyses

Table 3 shows the association between the six LSCAPE subscales, the 24-item LSCAPE (LSCAPE-24) total score, and self-report measures to test convergent and discriminant validity. The different subscales were inter-correlated in the expected direction. The LSCAPE-24 total score and subscales showed moderate-strong relationships with the ELSI-SF and moderate relationships with income and the measures of well-being.

The LSCAPE-24 and ELSI-SF sum scores were standardized to facilitate comparisons between the two measures of living standards. Comparison of LSCAPE-24 and ELSI-SF plots (histograms, normal probability plots, detrended normal probability plots) and summary statistics (e.g., skewness, kurtosis) indicated the LSCAPE-24 was more normally distributed than the ELSI-SF (skewness values for the LSCAPE-24 and ELSI-SF were -.17 and -1.43, respectively, with kurtosis values of -.67 and 2.43, respectively). Comparison of binned scores indicated that the LSCAPE-24 discriminated better at the higher end of the scale than ELSI-SF. There was a small amount of loss of discrimination at the lower end of the scale. The LSCAPE-24 and ELSI-SF show levels of association with the measures of subjective wellbeing and health as shown in Table 4.

Short-form Measure

Selection of items for the short-form measure of living standards was based on the factor loadings, item response distributions, and wording and meaning of the items. One item was selected to represent each of the six living standards factors, resulting in a 6-item short form measure. The items selected for the living standards short-form (LSCAPE-6) measure are asterisked in the Table 2. The internal consistency of the the LSCAPE-6 (M = 20.6, SD = 5.7) was good with Cronbach's alpha = .84. Corrected item-total correlations for the LSCAPE-6 ranged from .49 to .69. In comparing the shortened LSCAPE-6 and the LSCAPE-24 measures, to address over-inflated correlations caused by items correlating with themselves, the six-item scale was compared with both the full 24-item scale and the remaining 18-item form. The correlation between scores from the the LSCAPE-24 and the the LSCAPE-6 was .96; and between the the LSCAPE-6 and 18-item form was .92. The comparability of prorated scores from the six-item scale with the use of the the LSCAPE-24 scale was used to determine the concurrent validity of the the LSCAPE-6. Again the 6-item scale was compared with both the 24-item and 18-item forms, with comparisons made using paired *t*-tests. There were no significant differences in the scores for the prorated six-item LSCAPE-6 (M=82.4, SD=23.0) and those obtained using either the LSCAPE-24 (M=82.1, SD=21.1) or the prorated 18-item form (M=82.0, SD=20.9); t(1440)=1.72,ns. Pearson r correlations showed significant positive associations between the LSCAPE-6, the LSCAPE-24 total score, and measures of living standards and well-being (see Table 4).

Table 4. *Pearson's R Correlations between the Living Standards Scales and Various Measures*

	ELSI-SF	Total Worth of Assets	Annual Income	Quality of life	Life satisfaction	Happiness	Self-rated health
LSCAPE-24	.728**	.353**	.251**	.545**	.429**	.270**	.332**
LSCAPE-6	.676**	.350**	.223**	.527**	.413**	.248**	.307**
ELSI-SF	1	.323**	.267**	.528**	.441**	.273**	.310**

**Correlation is significant at the 0.001 level

Discussion

The aims of this research were (a) to assess the reliability and validity of a measure of living standards for older adults and (b) from this measure, to develop and test a short-form measure of living standards. To assess this LSCAPE-24 measure of living standards we have examined the patterns of association with demographic variables, measures of economic position including an existing measure of living standards, measures of subjective wellbeing, and measures of health. The pattern of association demonstrates overlap with these related constructs without redundancy. Given this approach to measuring living standards is based on the assessing the extent to which older people are able to live a life they have reason to value, the strength of these associations demonstrates that the LSCAPE-24 has achieved a broader approach to living standards without losing the association with material living conditions.

LSCAPE-24 produced strong correlations with the well-validated measure of living standards, ELSI-SF, demonstrating that it assesses living standards. Direct comparisons between the LSCAPE-24 and the ELSI-SF show that it correlates similarly with other measures of economic position, wellbeing and health, and provides the additional benefit of being more normally distributed and providing more discrimination at the higher end of the living standards spectrum. It is a recognised weakness of consensual measures of living standards that they add little to explanations of inequalities at levels beyond deprivation (Salmond & Crampton, 2012).

The LSCAPE-24 was developed with those aged over 65 years and this validation study has extended the age range to 50-87 years. There was little association between most subscales of the measure and age in this range. The strongest relationship was between the security subscale and age, indicating that older people report more security about the future. Two possible explanations for this are, firstly, that older people have less future than the young-old. Consequently, more certainty could be related to less amount of time to account for in terms of sufficient economic resources to last the remainder of one's life. Secondly, mortality is consistently related to economic resources as the most materially deprived are less likely to survive to old age (Grundy & Sloggett, 2003). As those with considerable material resources are more likely to survive to advanced older age, this explains the association between security and age in this sample.

At present, the assessment of living standards tends to enquire about the ownership of particular consumer goods, the possibilities for engaging in specific social occasions, and subjective assessment of

satisfaction with living standards. The items in this newly developed LSCAPE 24 are more broadly applicable than specific questions on what people are able to have and do. Consequently, the LSCAPE-24 is not tied to inevitably changing expectations for particular consumer goods or aspirations for certain sorts of luxury items. Such expectations are also likely to differ between ethnic and cultural groups. In this study, the LSCAPE-24 was tested on Māori and Non-Māori samples and the factor structure was the same for both groups. There were associations between this measure of living standards and ethnicity, as would be expected. SES is related to ethnicity in New Zealand, with well-established differences between Māori and non-Māori that are reflected in health and mortality statistics (Howden-Chapman, et al., 2000).

Assessing relative access to a set of valued capabilities avoids the need for agreement regarding valued consumer goods, social activities, and luxuries that people should aspire to (McKay, 2004). It also allows for differences in expectations across social and cultural groups, and differences in conditioned preferences across time, to be accommodated. Piachaud (1981) argues that the rightful concern of living standards should be in assessing restricted choice rather than restricted consumption. Accordingly, this measure assesses the opportunities that people have to select a standard of living, rather than concern with the patterns of consumption that they have chosen.

Appendix: The Living Standards Short Form (LSCAPE-6**) measure.**

Please indicate how true these statements are for you:

(Please circle the most appropriate number to the right of each statement)

	Not true for me at all				Definitely true for me
I can afford to go to a medical specialist if I need to	1	2	3	4	5
I am able to visit people whenever I wish	1	2	3	4	5
I am able to give to others as much as I want	1	2	3	4	5
I am able to do all the things I love	1	2	3	4	5
I expect a future without money problems	1	2	3	4	5
My choices are limited by money	1	2	3	4	5

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