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Development and Psychometric Evaluation of the Experiences of Social Inclusion Scale

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ABSTRACT



In recent years, a growing body of literature on social inclusion on an individual level has emerged. Yet, there is no common understanding of the concept itself and how to measure it. The objective of this study was to document the development of the Experiences of Social Inclusion Scale (ESIS), including the theoretical framework used for this purpose, which draws strongly on the capability approach. The ESIS is a brief closed survey instrument to assess self-reported experiences of social inclusion, and the aim was to evaluate its psychometric properties. The sample used for this consisted of 847 adults aged 18–87 years from all over Finland, most of them affected by or at immediate risk of social exclusion. The results indicated good internal reliability and consistency (Cronbach's $\alpha = 0.89$). Furthermore, factor analyses suggested a one-dimensional factor structure for the ten items of the ESIS. The mean score on the ESIS was not statistically significantly different between male and female respondents, whereas a weak positive association with age and statistically significant differences for experiences of poverty were found. Analyses for convergent validity showed that the ESIS was statistically significantly associated with instruments measuring related concepts. All correlations were in the expected direction and rather substantial in magnitude but did not indicate that the same construct was being measured ($r = .409$ to $r = .678$). These promising results indicate a broad applicability of the ESIS in self-administered questionnaires, and its use in future research is encouraged.

KEYWORDS

Social inclusion; well-being; health inequalities; scale development; measurement; capability approach

Introduction

The concept of social inclusion has a long-standing history in social sciences, particularly within sociological theories, and has found its way to social policy (Allman 2013; Leemann and Hämäläinen 2016; Silver 1994). In recent years,

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social inclusion has gained attention as an outcome on an individual level associated with health and well-being (Coombs, Nicholas, and Pirkis 2013). As the promotion of social inclusion has increasingly been formulated not only as an aim of social policy but also as a targeted outcome of specific programmes and interventions aimed at improving health and well-being, the urge to develop measures of social inclusion on an individual level have emerged (Cordier et al. 2017).

Recent reviews have listed a variety of indicators for social inclusion (Baumgartner and Burns 2014; Coombs, Nicholas, and Pirkis 2013; Cordier et al. 2017). However, a major finding of these reviews has been that there is no commonly agreed definition of social inclusion on an individual level, and, thus, how it should be measured (Baumgartner and Burns 2014; Coombs, Nicholas, and Pirkis 2013; Cordier et al. 2017). Many of the reviewed instruments were not explicitly developed to measure social inclusion per se but rather concepts such as social capital, social integration, connectedness, empowerment, and social participation, which are seen to be conceptually closely related to social inclusion (Cordier et al. 2017). It has been criticised that the instruments often lack sufficient theoretical underpinnings (Baumgartner and Burns 2014) and have been developed as assessment tools for specific interventions and programmes (Coombs, Nicholas, and Pirkis 2013; Cordier et al. 2017), resulting in context- and target group-specific instruments, which are hard to apply outside their particular context or to a general population.

Despite the lack of a commonly agreed definition of social inclusion, Cordier et al. (2017) highlight three domains emerging from the literature: (a) participation, (b) social connectedness and sense of belonging, and (c) citizenship and rights, including notions of agency and responsibility. Furthermore, some authors have argued to include both objective and subjective aspects when measuring social inclusion (Coombs, Nicholas, and Pirkis 2013). Objective elements usually refer to quantifiable material resources and the degree of individual participation in various life domains, whereas subjective aspects refer to the perceived satisfaction of needs and feelings associated with being included. The distinction between the objective and subjective aspects of social inclusion can also be found throughout the conceptual work by Huxley et al. (2012) used for the development of the Social and Community Opportunities Profile (SCOPE). However, they found that objective and subjective domains of social inclusion were not highly correlated (Huxley et al. 2012). In particular, the role of participation has been critically discussed in the literature. E.g. Baumgartner and Burns (2014) argued that a simple distinction between participation and non-participation is insufficient and analyses should rather focus on an individual's sense of agency.

Aim of the Study

The objective of this study was to document the development of a survey instrument for assessing self-reported experiences of social inclusion and to evaluate

its psychometric properties. Regarding the distinction found in Coombs, Nicholas, and Pirkis (2013) and Huxley et al. (2012), the focus was exclusively on subjective aspects. Considering the domains listed in Cordier et al. (2017), our instrument was intended to capture subjective aspects of social connectedness and sense of belonging and notions of agency and responsibility. We acknowledge the importance of objective domains in measuring social inclusion, but besides weak correlations between objective and subjective domains (Huxley et al. 2012) and criticisms towards using participation (Baumgartner and Burns 2014), the focus on subjective aspects also had practical reasons. The objective was to develop a short scale which could be placed in self-administered questionnaires. In Finland, major population studies (e.g. the National FinSote or FinHealth surveys) usually include various aspects of socio-economic background and living conditions as well as quantifiable aspects of participation and social contact.

Theoretical Framework

Our approach is based on a synthesis of theories and incorporates findings from previous studies on the effects of poverty and social exclusion. We have published an extensive theoretical framework in Finnish, which covers both objective and subjective aspects of social inclusion (Isola et al. 2017; Leemann et al. 2018). Objective elements in this theoretical framework include education, knowledge, skills, income, housing, social and political participation, social networks, and access to services. However, the main focus of our approach is how people experience social inclusion.

The theoretical backbone for our understanding of social inclusion is the capability approach (CA). The fruitfulness of the CA as a theoretical framework in researching social inclusion has been pointed out in the literature, particularly because it builds on the interrelationship between individuals and their social environment and emphasises quality aspects of agency and social interaction (Ware et al. 2007; Baumgartner and Burns 2014). When formulating the CA, Amartya Sen aimed at moving the space of analysis from utilities and primary goods to capabilities. He argued in favour of “shifting attention from goods to what goods do to human beings” (Sen 1980, 218–219). Hence, the CA sets a strong focus on people and their well-being. Monetary and material resources are important means to achieve well-being, but analyses are encouraged to reach beyond material deprivation. Sen (1999; 2009; Robeyns 2006) defines that capability is what people are able to do and be, that is a person’s ability to function in different social contexts. Sen outlines capabilities and the ability to function as not restricted to individuals themselves and argues to include social interaction and equal engagement in the social life of the community, i.e. experiences of being part of and belonging to the community (Sen 1980, 1985). Capabilities are described as essential freedoms to achieve

functionings which are commonly valued in neighbourhoods, communities, and societies (Sen 1999). Thus, the CA underlines the importance of social interaction and embeddedness for experiencing social inclusion.

Agency is a prominent element within the CA and it is considered to be tightly connected to well-being (Sen 1985; Crocker and Robeyns 2009). The CA has shown to be fruitful in researching agency and it has been applied to concepts related to social inclusion, such as empowerment or health inequalities (Abel and Frohlich 2012; Ibrahim and Alkire 2007). A central notion of the CA is that an agent chooses valuable functionings to pursue. In our approach, we regard human beings as relational agents when it comes to choosing pursuable functionings amongst the available opportunities. In the CA, capabilities are conceptualised as sensed potentials, i.e. perceived abilities to achieve rather than achievements themselves (Hofmann, Schori, and Abel 2013; Sen 1985). Hence, we argue that experiences of social inclusion are largely determined by what we call agency beliefs, which are shaped by interpersonal and external factors. This comes close to the concept of self-efficacy (Bandura 1977), but in our approach agency beliefs are primarily determined by social forces, e.g. how the agent is positioned in a variety of situations and relations. Deneulin (2008) and Deneulin and McGregor (2010) draw attention to this kind of relational interpretation of the CA. A number of studies demonstrate that individuals who believe in their opportunities formulate more goals and plans for the future and also achieve them more often than peers with poor agency beliefs (e.g. Hankonen 2011; Kavanagh and Bower 1985).

Recent studies suggest that experiencing meaningfulness is a central human need and is highly social in nature. According to Martela and Steger (2016), meaning in life is composed of coherence, purpose, and significance. Coherence, which they describe as comprehensibility and descriptive in nature, relates to the construction of meaning, whereas purpose and significance are normative and constitutive of meaningfulness. Purpose and significance are shaped in social interaction. Martela, Ryan, and Steger (2018) found that meaningfulness is determined by the satisfaction of basic psychological needs according to the self-determination theory (Deci and Ryan 2000), namely autonomy, competence, and relatedness and by pro-social behaviour, namely beneficence. Autonomy and competence refer to volition and a sense of mastery, which are both related to agency beliefs. Relatedness is described as a sense of belonging which has previously been shown to be a source of meaningfulness (e.g. Hicks and King 2009; Lambert et al. 2013). Pro-social behaviour has been shown to be crucial to human well-being (Martela and Ryan 2016) and an independent predictor of meaningfulness (Martela, Ryan, and Steger 2018). Thus, meaningfulness is largely shaped by social factors. Taken together, we regard meaningfulness as crucial to experiencing social inclusion.

The importance of meaningfulness in experiencing social inclusion also gains support from qualitative research on the effects of poverty. A number

of studies (e.g. Isola, Turunen, and Hiilamo 2016; Isola, Siukola, and Kukkonen 2019) have found that people living in prolonged poverty experience a sense of worthlessness and a lack of meaningfulness. These studies also show that in such a situation people do not try to influence their environment. In this sense, the experienced lack of meaningfulness also appears as a reduction in agency beliefs.

Methods

Initial Development of the Questionnaire Instrument

The development of the ESIS was guided by the protocol for developing indicators issued by the National Expert Network on Measurement of Functioning (TOIMIA), which is administered by the Finnish Institute for Health and Welfare. The guidelines are based on the procedures outlined in De Vet et al. (2011) and McDowell (2006).

On a conceptual level, the roots of the development of the ESIS can be seen in extensive and long-standing qualitative research on the consequences of poverty in Finland, reaching back to 2006. Major findings indicated that people in prolonged poverty experienced exclusion as a lack of meaningfulness, a narrow conception of their ability to influence their own life and the living environment, and low levels of social support and contact (Isola, Virrankari, and Hiilamo, [Forthcoming](#)). This was the starting point for first developing our theoretical framework and then operationalising its key elements as items for the ESIS.

The formulation of initial statements was deductive in nature and driven by our theoretical framework on experiences of social inclusion. The items were formulated by experts from the Finnish Institute for Health and Welfare (Anna-Maria Isola, Mariitta Vaara, Raija Lääperi, and Lars Leemann) and the University of Jyväskylä (Tuija Kotiranta, Kaisa Haapakoski, and Sami Ylistö) as positive statements depicting feelings associated with social inclusion. In order to obtain realistic possibilities for the ESIS to get included in major Finnish population studies, we decided that the maximum length of the scale should not exceed 10 items. We formulated possible items, discussed and refined them, and carefully chose 10 items for the ESIS. We were ready to omit items if pre-testing and psychometric evaluation indicated reasons to do so.

Pre-testing and Scale Revisions

The initial scale was tested among people in vulnerable labour market positions ($n = 26$) to check for face validity. These were long-term unemployed with reduced working ability and functional capacity due to physical and

psychological reasons. After having answered the items of the scale the participants were interviewed in 5 groups. The focus group interviews included a cognitive debriefing and in-depth feedback aimed at evaluating single items as well as the whole instrument. Based on the results, the scale was revised. Statements which were perceived as too abstract, difficult, or which were understood inconsistently were reformulated using the received comments.

The revised scale was pre-tested in a second round among random participants at Terve-SOS (a national fair on health and well-being in Finland). Participants had the possibility to answer the instrument on their own and discuss their experience with the researcher or provide written comments. Based on the feedback some fine adjustments to the statements were made.

As a third step, the newly revised scale was tested in a pilot study for the questionnaire providing the data of the present study. Most of the participants ($n = 11$) were people for whom it was assumed to be particularly challenging to fill in the questionnaire form. The pilot study included in-depth feedback and personal interviews with each participant. Based on the positive feedback, no further revisions were made.

Final Version of the Scale

The final version of the Experiences of Social Inclusion Scale (ESIS) comprises 10 items, which are formulated as positively directed statements. The statements are assessed on a 5-level Likert scale. The final version of the ESIS is presented in the “Appendix”.

Data Collection and Survey Participants

The data for this study were gathered within a nation-wide survey on living conditions, well-being, and health conducted among projects funded by the European Structural Fund’s priority axis 5 (social inclusion and combating poverty, European Social Fund, ESF) in Finland. A total of 847 people participated in the research, of which 789 were participants in these projects, mostly people outside paid employment and affected or threatened by social exclusion, poverty, and marginalisation from a wide range of projects. Consequently, the participants were diverse and included, e.g. long-term unemployed and people not in education, employment, or training (NEET), homeless people, former substance abusers, and people with disabilities, long-term sicknesses, and mental health problems. Fifty-eight respondents were professionals and students working on the projects. The survey was conducted between September and December 2017.

There is a lack of empirical knowledge about the target group as it is a hard-to-survey population (Tourangeau 2014) and known to be underrepresented in population studies. In order to increase the number of respondents, researchers and assistants especially trained for this purpose were sent out to the project

sites all over the country, e.g. food distribution points, open meeting spaces, training and counselling sites, workshops, course rooms, etc. They met the potential respondents in person and informed them of the aims of the research, confidentiality, voluntary participation, and other rights of the participants concerning the research. The same information was handed out in written form along with a consent form. The participants could answer the questionnaire during their regular presence in the projects. The preconditions for participation were sufficient proficiency in Finnish, to be of full age, and not to be under guardianship because of an intellectual disability.

The age of the participants ranged from 18 to 87 years. However, the age distribution was rather skewed as the projects were predominantly aimed at people of working age, and only a small number of participants were aged 65 or more ($n = 37$). Additionally, projects aimed at younger adults in difficult life situations were a priority for the funding of the ESF, and therefore young people were overrepresented in the sample. In contrast, the gender distribution was fairly equal between female and male participants (53.5 and 46 percent, respectively), while 0.5 percent chose the third option “other”.

Instruments for Assessing Convergent Validity

In absence of a “gold standard” measure (Cordier et al. 2017), convergent validity was assessed using 5 scales and 2 single item variables. The scales were the 8 item Quality of Life Scale (EuroHIS-8), the Mental Health Inventory 5-item scale (MHI-5), an abbreviated version of the Social Provisions Scale consisting of 12 items (SPS-12), the 7-item Sense of Mastery Scale (SOMS-7), and the full Warwick Edinburgh Mental Well-Being Scale (WEMWBS) consisting of 14 items. In addition to these scales, we used single item questions for self-rated health (SRH) and experienced loneliness. The scales and variables were chosen because they were thought to measure different dimensions of experiences of social inclusion based on our theoretical framework. However, because the instruments were assumed to measure only certain aspects associated with experiences of social inclusion, we hypothesised rather moderate correlations and did not set a lower limit.

The 8 items of the EuroHIS-8 Quality of Life Scale were extracted from the 26-item scale (WHOQOL-BREF) developed by the WHO Regional Office for Europe (Power 2003; for psychometric properties see Schmidt, Mühlán, and Power 2006). The four domains of quality of life captured by the EuroHIS-8 are physical health, psychological well-being, social relations, and environment. These domains are associated with our theoretical understanding of the experiences of social inclusion, especially the items on social relations and satisfaction with the local environment. The positively phrased items are assessed on a 5-level Likert scale, from which the mean is calculated. Higher values refer to a higher quality of life.

The MHI-5 is a brief screening instrument for the self-assessment of general mental health (Berwick et al. 1991) derived from the Short-Form Health Survey (SF-36; see Ware and Sherbourne 1992). It has been found to perform particularly well at detecting anxiety and mood disorders (Rumpf et al. 2001). The sum score of the 5 items is calculated after recoding negatively phrased statements, resulting in a range from 5 to 30 points. This is then transformed into a final score ranging from 0 to 100 using a standard linear transformation. Higher scores indicate better mental health.

The SPS was developed by Cutrona and Russell (1987) based on the theoretical model of the provisions of social relationships (Weiss and Rubin 1974). The scale consists of six domains: attachment, social integration, reassurance of worth, reliable alliance, guidance, and opportunity of nurturance. This focus makes the SPS conceptually relevant for the ESIS. The full SPS consists of 24 items which are assessed on a 4-level Likert-style scale. However, in this study we used an abbreviated 12-item version containing the two positively phrased items per domain, resulting in a total score between 12 and 48. Higher scores stand for better social provisions.

Sense of mastery has been conceptualised as a coping mechanism for stress reduction, and the SOMS-7 was developed as an instrument to measure individuals' perceptions of control over their lives, i.e. their sense of mastery, as opposed to being fatalistically ruled (Pearlin and Schooler 1978; Pearlin et al. 1981). This is particularly related to agency beliefs in our theoretical framework and the ESIS. The seven items are assessed on a 4-level Likert-style scale, resulting in a score from 7 to 28. Higher scores indicate a higher sense of mastery.

The WEMWBS is an instrument developed for measuring positive aspects of mental well-being and has been validated with good results (Tennant et al. 2007; Steward-Brown et al. 2009). The scale measures key concepts of mental well-being, such as positive affect, various aspects of psychological functioning, and interpersonal relationships. Many domains covered by the WEMWBS are reflected in our theoretical framework, specifically: perceived competence, autonomy, and satisfying interpersonal relationships (Tennant et al. 2007). The 14 positively phrased statements are assessed on a 5-point Likert scale, leading to a sum score between 14 and 70 points. Higher scores indicate higher levels of mental well-being.

SRH is a commonly used question to assess a summary of various aspects of health and it has been shown to be predictive of mortality, functional capacity and associated with socio-economic position (e.g. Jylhä 2009). SRH provides a good overview of a respondent's health based on symptoms and possible diagnosed illnesses but also experiences and expectations originating from social comparisons (Manderbacka 1998). In this study SRH was assessed by the question "How would you describe your state of health at present?" and the presented answers were good, fairly good, average, fairly poor, and poor. For the analyses, the initial scoring was reversed so that higher scores referred to better SRH.

Loneliness is considered a central aspect of social exclusion and a key risk factor regarding social well-being. Studies have found mechanisms by which loneliness impairs health (Cacioppo et al. 2002) both physical, e.g. coronary heart disease and stroke (Valtorta et al. 2016) and mental health, e.g. depression (Heikkinen and Kauppinen 2004). Although correlating somewhat more strongly with the emotional dimension, the single question has been found to measure both social and emotional aspects of loneliness (Routasalo et al. 2006). In this study, loneliness was assessed by the question “Do you feel lonely?” to which the options never, very rarely, sometimes, fairly often, and all the time were presented. Higher scores indicate stronger experiences of loneliness.

Statistical Analysis

All analyses were conducted using SAS version 9.3 (SAS/STAT 9.3 User’s Guide 2011). The statistical analyses followed the steps presented in the next sections.

Results

Descriptive Statistics and Missing Data

Descriptive statistics for the items of the ESIS are presented in Table 1. The proportion of missing values varied between 1.3 percent (item 05) and 2.6 percent (items 06 and 07). 92.9 percent (787 participants) responded to all 10 items. Another 38 people (4.5 percent) answered 9 of the 10 items. We considered the number of missing values among the items to be acceptable and, because the sample size was large enough, we did not replace the missing values. Instead, we omitted participants with missing values in the ESIS from all further analyses.

The item scores and correspondingly the mean values for all ten items were generally closer to the positive end of the scale. The means ranged from 3.662 (“I can strive for things that are important for me”) to 3.942 (“I feel trusted”).

Table 1. Descriptive statistics for the ten items of the Experiences of Social Inclusion Scale (ESIS).

ESIS item	<i>n</i>	Missing (%)	<i>M</i>	<i>SD</i>	<i>Mdn</i>	<i>Min</i>	<i>Max</i>
01 I feel that what I do every day is significant	832	15 (1.77)	3.73698	0.96144	4	1	5
02 I get positive feedback on what I do	830	17 (2.01)	3.83482	0.88133	4	1	5
03 I belong to a group or community that is important for me	827	20 (2.34)	3.78907	1.00443	4	1	5
04 Other people need me	830	17 (2.01)	3.77128	0.96162	4	1	5
05 I can influence the course of my life	836	11 (1.30)	3.87675	0.96309	4	1	5
06 I feel that my life has purpose	825	22 (2.60)	3.74333	1.09134	4	1	5
07 I can strive for things that are important for me	825	22 (2.60)	3.66201	1.00514	4	1	5
08 I get help when I really need it	833	14 (1.65)	3.74968	1.03236	4	1	5
09 I feel trusted	831	16 (1.89)	3.94155	0.86294	4	1	5
10 I can influence some things in my living environment	829	18 (2.13)	3.69377	0.86727	4	1	5

Note: *M*, *SD*, *Mdn*, *Min*, and *Max* were calculated only for participants with no missing values in any of the items (*n* = 787).

The standard deviations were rather high, ranging from 0.863 (“I feel trusted”) to 1.091 (“I feel that my life has purpose”), indicating sufficient variance of the values. The median score for all of the items was 4. The participants used the full range of the 5-level Likert scale for all items.

Internal Consistency

In order to assess the internal consistency of the ESIS, we considered Cronbach’s alpha, item-total correlations, and changes of Cronbach’s alpha if single items were deleted. We expected Cronbach’s alpha (α) to reach at least 0.7 (Clark and Watson 1995). We set the minimum for item-total correlations to be 0.3 (Ferketich 1991) and the improvement of the standardised α to be less than 0.05 if an item was deleted (DeVellis 2003).

When computed, we found Cronbach’s alpha to be high ($\alpha = 0.89$). Since α tends to increase with a larger number of items (Clark and Watson 1995), this indicates good internal reliability considering that the ESIS consists of only 10 items. In Table 2 we present the item-total correlations and changes of α when items were deleted. All items had a standardised item-total correlation between 0.52 and 0.70, and 7 out of 10 showed values higher than 0.6. These values exceeded the expected minimum. The lowest item-total correlation was found for “I can influence some things in my living environment” (0.52), whereas “I can strive for things that are important for me” showed the highest correlation (0.70). Furthermore, we tested the criterion of increasing α by more than 0.05 if an item was deleted. Such cases were not detected. Instead, for all statements, a deletion resulted in a reduction of α . These satisfactory results gave no reason to delete any items from the scale, and we considered the internal consistency of the ESIS to be good.

Inter-item Correlations

In Table 3 we present the Spearman rank correlations for all inter-item correlations. We considered correlations higher than 0.2 and lower than 0.8 to be

Table 2. Item-total correlations and Cronbach’s alpha if items deleted for the Experiences of Social Inclusion Scale (ESIS).

ESIS item	Correlation with total	Alpha after deleting the item
01	0.661	0.875
02	0.598	0.879
03	0.625	0.878
04	0.683	0.873
05	0.616	0.878
06	0.692	0.873
07	0.701	0.872
08	0.539	0.884
09	0.609	0.879
10	0.521	0.885

Table 3. Spearman rank correlations between the items of the Experiences of Social Inclusion Scale (ESIS).

Item	01	02	03	04	05	06	07	08	09	10
01	–									
02	0.572***	–								
03	0.525***	0.482***	–							
04	0.579***	0.447***	0.579***	–						
05	0.446***	0.353***	0.339***	0.418***	–					
06	0.540***	0.375***	0.482***	0.588***	0.546***	–				
07	0.493***	0.420***	0.443***	0.496***	0.582***	0.644***	–			
08	0.358***	0.370***	0.369***	0.369***	0.429***	0.365***	0.492***	–		
09	0.438***	0.438***	0.401***	0.534***	0.406***	0.473***	0.458***	0.490***	–	
10	0.368***	0.335***	0.353***	0.396***	0.400***	0.407***	0.482***	0.376***	0.417***	–

* $p < .05$.

** $p < .01$.

*** $p < .001$.

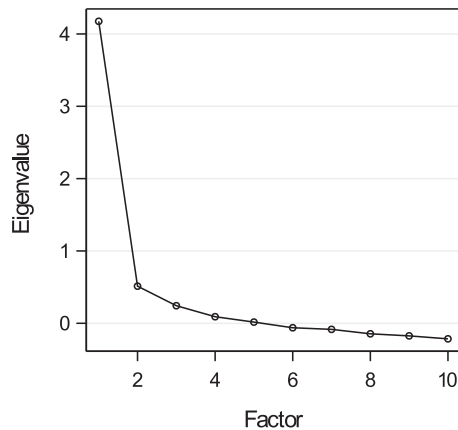


Figure 1. Scree plot of eigenvalues of the extracted factors in the EFA.

reasonable – correlations exceeding 0.8 would indicate that two items were associated too tightly and the deletion of one should be considered (Tennant et al. 2007). However, we found all the correlation coefficients to be in a range from 0.33–0.64. All associations were statistically highly significant ($p < 0.0001$). The lowest value was found between the statements “I get positive feedback on what I do” and “I can influence some things in my living environment”. The highest association was between “I feel that my life has purpose” and “I can strive for things that are important for me”. In general, the weakest associations were found for “I can influence some things in my living environment” (0.33–0.48) and the strongest associations for “I can strive for things that are important for me” (0.42–0.64). All in all, the inter-item correlations gave no reason to delete any of the 10 statements.

Factor Analysis

In order to assess the suitability of the data for factor analysis, we considered the results of the Kaiser–Meyer–Olkin Measure of Sampling Adequacy (KMO) and Bartlett’s Test of Sphericity. With a value of 0.905, the KMO was clearly higher than the recommended minimum of 0.6 (Kaiser 1974). Bartlett’s Test of Sphericity was highly significant with $\chi^2 = 3383.283$ and $p < 0.0001$. These results were supportive of conducting factor analyses. We randomly split the sample into two groups of equal size and conducted exploratory factor analysis (EFA) on the first subsample and confirmatory factor analysis (CFA) on the other.

In the EFA we used the principal factor method and applied Kaiser’s criterion to retain only factors with eigenvalues higher than 1 and factors that lay clearly above the “elbow” using graphical results of the scree plot (DeVellis 2003). When conducting the EFA on the first subsample ($n = 393$), we found a single common factor solution for the ESIS. Figure 1 shows the scree plot of eigenvalues of the

Table 4. Factor loadings of the ten items of the ESIS.

ESIS item	EFA, subsample 1 (<i>n</i> = 393)	CFA, subsample 2 (<i>n</i> = 394)
	Factor 1	Factor 1
01	0.683	0.726
02	0.591	0.670
03	0.677	0.647
04	0.677	0.773
05	0.618	0.690
06	0.785	0.712
07	0.739	0.757
08	0.526	0.599
09	0.601	0.669
10	0.510	0.575

Note: Factor loadings above .3 (EFA) and standardised factor loadings above .5 (CFA) are in bold.

extracted factors in the EFA. The scree plot unambiguously showed the elbow on factor 2. Only one factor had an eigenvalue greater than 1 (4.175). The extracted factor explained 95.8 percent of the common variance. Table 4 reports the factor loadings of the ten items of the ESIS on this single factor. All ten items loaded between 0.51 and 0.79 on the extracted single factor. This means that all the items exceeded the recommended minimum loading of 0.3, under which an item should not be assigned to a factor (Hair et al. 2014). The lowest factor loading was found for “I can influence some things in my living environment” and the highest for “I feel that my life has purpose”.

We then applied CFA on the second subsample (*n* = 394) to confirm the suggested single factor model. For the CFA we used diagonally weighted least squares estimation (DWLS), which has been shown to be the most reliable parameter estimation method for ordinal data, and generally when variables are not normally distributed (Flora and Curran 2004; Brown 2006; Li 2016). We assessed the goodness of fit index (GFI) as an absolute index, the adjusted goodness of fit index (AGFI), based on a correction for degrees of freedom as a parsimony index, and the normed fit index (NFI) as an incremental index. Additionally, we examined the Standardised Root Mean Square Residual (SRMR). We expected the GFI, AGFI, and NFI to be above 0.9 and the SRMR to be below 0.1, ideally below 0.05 (Hair et al. 2014).

The single factor model received support from the CFA. With standardised factor loadings between 0.58 and 0.77 on this single factor, the values for all items were above the recommended lower limit of 0.5 (Table 4). The GFI, AGFI, and NFI were all above their desired levels (GFI = 0.991, AGFI = 0.986, NFI = 0.985). The SRMR was 0.053, i.e. clearly below 0.1 and very close to the conservative limit of 0.05.

Sum Score

To measure a person’s overall experience of social inclusion with the ESIS, we constructed a sum index of the 10 items. Given the scoring of 1–5 points per

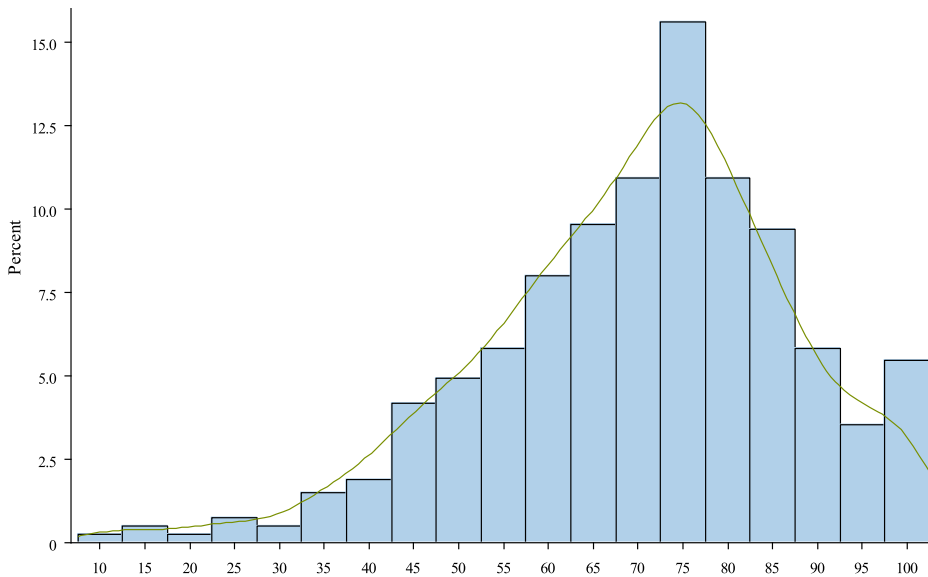


Figure 2. Histogram and kernel density plot of the sum score of the ESIS.

statement, the sum index of the raw points had a range of 40, with a minimum of 10 and a maximum of 50 points. We transformed the scale to a range of 0–100 points using a standard linear transformation. Higher scores on the scale express greater experiences of social inclusion. [Figure 2](#) shows the histogram of the distribution together with the kernel density plot of the scale. In general, the scores were towards the positive end of the scale. However, the ESIS score did not appear to suffer from floor or ceiling effects (i.e. >20 percent, see [Figure 2](#)). All scores were between 10 and 100 points. The mean score was 69.498 (*SD*: 17.056) while the median was 72.5 points.

Associations with Socio-demographic and Socio-economic Background of the Participants

[Table 5](#) shows the mean ESIS scores by gender, age group and experiences of poverty. We assessed measurement invariance between the groups by first running EFA on each group separately to replicate the single factor solution found in the factor analyses. Then we computed differences in the goodness of fit indices (Δ GFI, Δ AGFI, Δ NFI) between the groups conducting CFA using DWLS estimation. For gender and poverty measurement invariance could be established (single factor solution in EFA, Δ GFI < 0.01, Δ AGFI < 0.01, Δ NFI < 0.01). For the age groups, the differences in the goodness of fit indices were > 0.01 (max. 0.042) which was mainly due to small group sizes. When age was dichotomised (18–39 vs. 40+) measurement invariance could be established as well.

Table 5. Mean scores on the Experiences of Social Inclusion Scale (ESIS) by gender, age group and experiences of poverty.

	<i>n</i>	<i>M</i>	<i>SD</i>	LCL (95%)	UCL (95%)
Gender					
Male	356	68.79	16.47	67.07	70.50
Female	417	70.20	17.51	68.51	71.88
Difference: $p = 0.251^a$					
Age					
18–29	255	66.58	16.52	64.54	68.62
30–39	144	67.62	18.36	64.60	70.65
40–49	112	71.47	15.91	68.49	74.45
50–59	150	71.62	17.54	68.79	74.45
60–69	61	73.32	16.03	69.21	77.43
70+	15	73.00	12.68	65.98	80.02
Difference: $p = 0.005^b$					
Experiences of poverty					
No	380	72.58	16.12	70.95	74.20
Yes	373	65.97	17.36	64.20	67.73
Difference: $p < 0.001^a$					

^aStudent’s *t*-test.

^bOne-way ANOVA.

The analyses revealed no statistically significant differences between female and male respondents in the mean ESIS scores ($p = 0.251$). Participants who chose “other” when asked for gender were omitted due to the low number of answers ($n = 4$). For age, the mean ESIS score increased monotonically until the second highest age group. The results of the one-way ANOVA indicated that the differences were statistically significant ($F = 3.37$, $p = 0.005$). However, the increases from one age group to another were quite moderate and steps from one age group to the following were not statistically significant. Additionally, we checked the association between age and ESIS score, and the Pearson’s correlation coefficient was low but statistically significant ($r = 0.151$, $p < 0.0001$). In order to capture socio-economic differences, we used a poverty variable measuring difficulties in meeting basic needs. We grouped those who reported that in the previous 12 months they had either feared that they would run out of food before they had money to buy more, or had left necessary medication unpurchased due to a lack of money, or had not consulted a doctor due to lack of money or any combination of the above-mentioned items. The analyses showed statistically highly significant differences between these two groups ($p < 0.0001$).

Convergent Validity

We assessed the convergent validity of the ESIS using five scales and two single question variables. We computed Pearson’s correlation coefficients as measures of association. As shown in Table 6, the coefficients ranged between $r = 0.409$ (SRH) and $r = 0.678$ (WEMWBS) and all associations were statistically highly significant ($p < 0.0001$). The two scales measuring well-being in a broad

Table 6. Pearson correlation coefficients between the Experiences of Social Inclusion Scale (ESIS) and instruments used for assessing convergent validity.

	EuroHIS-8	MHI-5	SPS-12	SOMS-7	WEMWBS	SRH	Loneliness
WHO EuroHIS-8	–						
MHI-5	0.701***	–					
SPS-12	0.448***	0.355***	–				
SOMS-7	0.633***	0.602***	0.365***	–			
WEMWBS	0.761***	0.753***	0.506***	0.661***	–		
SRH	0.683***	0.492***	0.248***	0.471***	0.517***	–	
Loneliness	–0.551***	–0.580***	–0.342***	–0.471***	–0.515***	–0.426***	–
ESIS	0.605***	0.540***	0.553***	0.559***	0.678***	0.409***	–0.427***

* $p < .05$.** $p < .01$.*** $p < .001$

sense, i.e. the EuroHIS-8 Quality of Life Scale and the WEMWBS yielded associations above $r=0.6$, and the three scales measuring more specific domains of well-being (SOMS-7, SPS-12, MHI-5) showed associations above $r=0.54$ with the ESIS. Loneliness was associated with the ESIS with $r=-0.427$. The weakest association was found for SRH with $r=0.409$. However, it should be taken into consideration that both loneliness and SRH were assessed only by one single question.

Discussion

Our results show good psychometric properties, a unitary factor structure, and good convergent validity for the ESIS. We found the internal reliability of the ESIS to be high with a Cronbach's alpha coefficient of 0.89. Moreover, all other parameters used to assess the internal consistency of the ESIS (item-total correlations, the change of Cronbach's alpha if an item was deleted, and inter-item correlations) were very satisfactory, indicating good internal consistency. Results from the factor analysis indicated that all ten items could be grouped under a single common factor. The factor loadings of the items were high.

The analyses to assess the convergent validity yielded good results. The ESIS was statistically highly significantly associated with the instruments used for this purpose. All correlations were in the expected direction and substantial in magnitude. Still, none of the other instruments was associated with the ESIS so strongly that it could be concluded to approximate the ESIS too closely, i.e. assumed to measure the same construct. The strongest associations were found for two scales measuring well-being in a broad sense, i.e. including personal and social aspects of well-being. This is in line with our expectations, as we understand experiences of social inclusion to include both personal and social domains. The ESIS was also strongly associated with three scales measuring more specific domains of well-being (mental health, social provisions, sense of mastery), which cover central parts of the ESIS. The correlation coefficients

between the ESIS and the two single item questions on loneliness and self-rated health were somewhat lower but statistically highly significant. The main theoretical foundation of the ESIS was the CA, and these results can also be seen as corresponding to the central assumptions of the CA and its multidimensionality. As outlined in section Theoretical Framework, in the CA the consequences of poverty include strong impacts on both personal and social aspects of well-being. Capabilities, i.e. what people feel that they are able to do, are strongly linked to perceptions of agency and personal well-being. Still, this is seen as strongly determined by social interaction, and social exclusion should not refer primarily to low social participation but to low quality of social interaction and support, low appreciation, a weak sense of belonging and a lack of meaningfulness. In this sense, the findings that the ESIS was more tightly associated with instruments measuring well-being in a broad sense also reflect the multidimensional conception of well-being in the CA.

We found no statistically significant difference between female and male respondents in their mean ESIS scores. This result supports the applicability of the ESIS. However, we found a moderate monotonic rise in the mean ESIS scores with increasing age. It might be hypothesised that this is due to a true age effect, i.e. with increasing age, people could engage more often in activities they consider meaningful, maintain and interact with more stable social networks, etc. On the other hand, this might also be due to the nature of our data. Many projects from which the data were gathered focused on young people experiencing severe difficulties. This explanation gained support from preliminary analyses showing that the prevalence of severe mental strain ($MHI-5 \leq 52$) was substantially higher among participants below 40 years compared to the other age groups. To further assess a possible age effect, more research is needed.

Our theoretical assumptions were supported when examining the mean ESIS scores according to the socio-economic position. Participants who had experienced poverty during the previous year scored statistically significantly lower on the ESIS compared to those who had not experienced poverty. This is consistent with central assumptions of the CA and with the results of previous studies on the effects of poverty.

A growing body of literature shows the fruitfulness of applying the CA to measure health and well-being (Ruger and Mitra 2015). Various instruments have been developed in this field, e.g. the ICECAP capability measures (Coast et al. 2008; Al-Janabi et al. 2013), the original OCAP instrument (Anand et al. 2009), which has been reduced and refined for the OCAP-18 instrument (Lorgelly et al. 2008), and further developed to the OxCAP-MH instrument intended specifically for mental health contexts (Simon et al. 2013). The ESIS joins these instruments as the CA was specifically applied to assess experiences of social inclusion. Despite this specific focus, some results correspond to those reported for the capability instruments mentioned

above, e.g. strong associations with the quality of life, mental health, and socioeconomic position (Al-Janabi et al. 2013; Simon et al. 2013; Anand et al. 2009).

Strengths and Limitations

It is worth mentioning that the present study represents the first attempt to quantify experiences of social inclusion in a population study in Finland by using the ESIS. The present study addressed some points of criticism mentioned in recent reviews on measures of social inclusion. Many instruments attempting to measure social inclusion on an individual level were initially not explicitly developed to assess social inclusion per se but rather they addressed concepts which are close to social inclusion, e.g. social participation, social integration, or social capital (Cordier et al. 2017). This is also reflected in the lack of commonly agreed definitions and insufficient theoretical underpinnings for instruments measuring social inclusion on an individual level (Baumgartner and Burns 2014). In this study, we briefly presented a theoretical framework for measuring experiences of social inclusion which was used for the development of the ESIS. Consequently, the ESIS has a clear focus on subjective aspects of social inclusion (Coombs, Nicholas, and Pirkis 2013).

The focus on subjective experiences distinguishes the ESIS from other instruments in the field, which usually attempt to capture subjective and objective aspects. Examples of such instruments for which psychometric properties have been assessed with satisfactory results include the Social and Community Opportunities Profile (SCOPE) (Huxley et al. 2012) and the Social Inclusion Scale (SIS) (Secker et al. 2009; Wilson and Secker 2015). Both scales include a mix of items on subjective and objective aspects. However, Huxley et al. (2012) found that objective and subjective domains were not highly correlated. Furthermore, in their extensive theoretical background, Huxley et al. (2012) summarised positive feelings of social inclusion such as purpose, trust, belonging, achievement, or being valued. Still, the questions of the SCOPE do not address these aspects as such. The ESIS on the other hand aims to capture just these subjective aspects of social inclusion.

In most cases, the reviewed instruments were developed for the assessment of a specific intervention, resulting in context- and target group-specific instruments (Cordier et al. 2017; Baumgartner and Burns 2014; Coombs, Nicholas, and Pirkis 2013). The SIS can be seen as an example of such an instrument. It was developed to assess the impacts of arts participation for people with mental health problems (Secker et al. 2009). As a consequence, three items of the SIS address the mental health context directly (“My social life has been mainly related to mental health or people who use mental health services”, “I have been involved in a group not just for mental health”, “I have felt some people look down on me because of my mental health needs”). These items had to be rephrased or omitted for other target groups (Wilson and Secker

2015). Our theoretical framework with a focus on general social well-being and the subsequent formulation of the items not directed at any particular target group make the ESIS broadly applicable for evaluation and population studies. This broad applicability is further facilitated by the brief form of the ESIS, consisting of just 10 items.

Compared to previous studies, the sample of the present study was quite diverse and large (see Cordier et al. 2017). This allowed the systematic assessment of various psychometric properties of the ESIS, including factor analyses. In this sense, the present study attempts to respond to the reported lack of knowledge on psychometric data for previously published instruments measuring social inclusion, which would be needed for their validation (Cordier et al. 2017).

However, there are also some limitations. Despite being large and diverse, the sample for this study was skewed regarding the age of the participants. Most of the participants were people outside paid employment who participated in projects funded by the ESF. To improve the generalisability of the findings, the psychometric assessment should be repeated among other population groups and samples representative of the general population. Additionally, the use of longitudinal data would provide important additional information. Furthermore, we are aware that some psychometric properties could not be assessed in this study. Last but not least, the psychometric properties were evaluated for the Finnish language version of the ESIS, and the English translations presented in this study have not been tested so far. We recommend that all these points should be addressed in future research.

Conclusion

The present study contributes to the growing body of research on social inclusion on an individual level by introducing the Experiences of Social Inclusion Scale (ESIS). The psychometric properties of the ESIS are very promising. The analyses suggest that the ESIS is a valid instrument for measuring subjective aspects, i.e. experiences of social inclusion. The results encourage the use of the ESIS in future research. Such studies should examine the applicability of the ESIS in other populations and further elaborate the role of socio-economic and socio-demographic factors and the associations between experiences of social inclusion and health, well-being, and living conditions. As the ESIS focuses on the subjective aspects, it may be used to examine the associations between subjective and objective aspects of social inclusion, such as different forms of participation.

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Disclosure Statement

No potential conflict of interest was reported by the author(s).

Ethical Approval

All procedures performed in this study involving human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards and were approved by the Institutional Review Board (IRB) of the Finnish Institute for Health and Welfare (Ethical Review Board 4/2017 §765). This article does not contain any studies with animals performed by any of the authors. Informed Consent: Informed consent was obtained from all individual participants included in the study.

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Appendix

The Experiences of Social Inclusion Scale (ESIS)

To what extent do you agree or disagree with the following statements? For each statement, please select the alternative that best describes your personal experience.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Completely agree
I feel that what I do every day is significant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I get positive feedback on what I do	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I belong to a group or community that is important for me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other people need me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I can influence the course of my life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel that my life has purpose	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I can strive for things that are important for me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I get help when I really need it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel trusted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I can influence some things in my living environment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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