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ORIGINAL RESEARCH

Investigating the Capability Approach: How Long-Term Unemployed People in Finland Perceive Their Access to Commodities, Conversion Factors and Capabilities

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Abstract
Capability Approach (CA) extends our understanding of wellbeing by underlining the importance of freedoms. There is a need to operationalize CA components for empirical measurement in different settings and population groups. This study investigated the conversion process from perceived resources to perceived capabilities by investigating the role of perceived conversion factors (personal and contextual) among a particular population group of Finnish long-term unemployed persons ($N=511$, year 2016), aged 20–64 years, not receiving activation services, recruited through a service system and registers (random sampling). We used the label "perceived" to highlight that our approach was subjective, meaning that we measured respondents' own perceptions of their commodities, conversion factors and capabilities. Data were collected in the PROMEQ project using a structured, self-employed questionnaire. Perceived capabilities were measured on a 7+1 item scale of self-reported capabilities. The main statistical methods applied were cross-tabs with chi² tests, Confirmatory Factor Analysis (CFA) and Structural Equation Modelling (SEM). Long-term unemployed perceived poorer capabilities compared to the general Finnish population. Long-term unemployed men perceived poorer capabilities compared to long-term unemployed women. CFA indicated the data fit with the CA. The SEM model supported the theoretical assumptions of CA: perceived commodities associated with perceived capabilities strongly but indirectly through perceived social and environmental conversion factors. Group analysis (SEM) demonstrated, that between genders the CA-models were slightly differentiated. The results indicate the need for more effective capability promotion, and for targeted practices acknowledging variety of circumstances of the long-term unemployed. CA could offer a comprehensive tool for this task.

Keywords Capability approach · Operationalization · Capability measure · Long-term unemployed · SEM · PROMEQ

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1 Introduction

Despite decades of research and efforts to promote wellbeing, a socioeconomic gap in wellbeing continues to exist also in Finnish society (e.g. Kestilä & Karvonen, 2019). It has thus been questioned whether our point of departure to examine wellbeing and to develop its practices is the right one. Efforts to promote wellbeing have been criticized for failing to reach especially the most disadvantaged groups. *Wellbeing* can be broadly defined as a multidimensional concept reflecting ultimately the state of an individual in her/his specific context. Health is seen an essential part of wellbeing. Wellbeing has usually been measured through objective material resources, or through concepts reflecting life satisfaction. These traditional approaches have been criticized for a certain level of narrowness for (roughly put) equating resources or feelings with wellbeing. Recently, the Capability Approach (CA), initially developed by Nobel laureate Amartya Sen from 1980s (e.g. Sen, 1984; Sen, 1999), has offered a novel, more comprehensive standpoint to approach wellbeing by stretching the scope to what exists between means and ends, that is, capability freedom: whether the individual has freedom to lead the kind of life s/he desires. In CA, capabilities (opportunities to achieve) and functionings (achievements, doings and beings i.e. "being well") represent different metrics, either of which can be used to evaluate overall wellbeing. Research on the associations of capabilities -in terms of opportunities to achieve- and functionings -in terms of achieved wellbeing- has demonstrated that the two concepts are linked, but not equivalent with each other (Anand et al., 2005; Anand & Van Hees, 2006; Veenhoven, 2010; Van Ootegem & Verhofstadt, 2015), highlighting their conceptual distinction. Consequently, if public policies truly aim to promote individual wellbeing, then the life chances (capabilities) that people have, and the structures shaping these chances, may constitute a key area of focus (Anand et al., 2005).

The challenge in translating the ideas of CA into concrete actions has been in fitting theoretical components of CA empirically, although recently, significant efforts have been made to contribute the empirical development of CA. Operationalization of CA has been seen difficult, for example due to the openness (unspecified nature) of the theory and apparent confusion on how to capture empirically the various, potentially overlapping components of CA, as commodities and conversion factors that have been rather loosely identified in theoretical literature (Robeyns, 2005b; Schokkaert, 2009; Binder & Coad, 2011; Dang, 2014; Chiappero-Martinetti et al., 2015; Baumgardt et al., 2020; Till et al., 2021).

Traditionally, CA has been an objective approach (e.g. Sen, 1984), and also empirically, capabilities have dominantly been measured objectively, i.e. with impersonal, external indicators (Agee & Crocker, 2013). We instead approach CA from a subjective point of view, as we consider, that how people perceive their capabilities and related factors is an important determinant of their wellbeing.

The basic idea of this study is to test empirically Sen's CA model along with a specific self-reported capability tool developed by Anand and Van Hees (2006). Self-reported capability measure imply that we measure respondents' subjective evaluations of their perceived opportunities, that is, *perceived capabilities*. The capability measure consists of 7 + 1 dimensions as capabilities for: C1 happiness, C2 sense of achievement, C3 health, C4 intellectual stimulation, C5 social relations, C6 environment, C7 personal integrity and finally summarizing item C8 capabilities overall (see online appendix A "Capability measure of

self-reported capabilities"). We use subjective measures to operationalize also the other components of CA (commodities and conversion factors) when applicable.

We use data of a particular population sub-group of Finnish long-term unemployed persons, which is a specific group to investigate in the context of perceived capabilities as unemployment sets an ultimate risk for wellbeing, especially over time (e.g. McKee-Ryan et al., 2005). Previously, long-term unemployed persons have been found to have the poorest perceived capabilities relative to other socio-economic groups (Van Ootegem & Verhofstadt, 2015).

Our study proceeds as follows. We first examine the distribution of perceived capabilities and related factors among long-term unemployed Finns in total and by gender group. We also compare perceived capabilities of the sample of long-term unemployed Finns ($N=511$) with the sample of the general Finnish population ($N=2190$) by using secondary data (Pitkänen, Torkki, Martikainen, Nuutinen, Kauppi, Lavikainen & Mäki-Opas, 2024, English abstract). In addition, we test the psychometric properties (i.e. analyse the statistical quality) of the Finnish translation of the capability measure used in this study. Our main aim is to test if perceived commodities convert to perceived capabilities through perceived conversion factors. In addition to theory testing, we contribute to theory development and examine if the role of perceived social conversion factors, relative to perceived environmental conversion factors, for perceived capabilities is emphasized, and whether the effects vary by gender.

The innovation of this study is represented in its examination of the conversion process from resources to capabilities by investigating the role of personal- and contextual (social and environmental) conversion factors by using rarely applied subjective measures of perceived capabilities and related components of CA. The study aims to produce information on the perceived capabilities of the long-term unemployed to guide relevant policies and practices and to contribute to the empirical and theoretical development of CA.

2 Operationalizing Capability Approach

2.1 Main Concepts and Measurement

CA has its own terminology for its main theoretical concepts. In the CA, a clear distinction is made between resources (means to achieve), capabilities (opportunities to achieve) and functionings (achievements). Resources can be approached with the concept of *commodities*, that can be considered as means to achieve, referring primarily to goods and services available to an individual (Robeyns, 2005a). Income (which is more of a command over commodities, not a commodity itself) and commodities can be seen as distinct, yet tightly associated concepts and together they determine the material basis of wellbeing (Sen, 1999, p. 70). *Conversion factors*, in turn, are a set of personal- and contextual (social and environmental) factors, which contribute to the conversion of a set of resources into outcomes (Robeyns, 2005a). Traditional theories that focus on distribution of resources do not acknowledge peoples' differentiated abilities to convert resources to capabilities (Robeyns, 2003). Therefore, "*a set of commodities cannot be an indicator of the freedom that a person has at his hands without considering the quality of the conversion factors*" (Nambiar, 2011). Especially social and environmental conversion factors are of special interest when examin-

ing the impact on an individual's societal context to capabilities: "*The social and environmental conversion factors also allow us to take into account a number of societal features, such as social norms and discriminatory practices*" (Robeyns, 2003). While environmental conversion factors take place in the physical, natural and geographical surroundings of the person, social conversion factors stem from social norms, traditions, and behaviour of others in society (Robeyns, 2008). In addition to these contextual conversion factors, also personal conversion factors such as gender, skills related to educational competence, etc., influence capabilities (Robeyns, 2005a). *Capabilities* reflect the amount of freedoms (opportunities to achieve) an individual has in his/her life, that through agency (acts, choices) may, or may not turn into *functionings* (achievements) of an individual.

In short, (Fig. 1) "Theoretical simplification of the components of CA", displays the theoretical assumption of the formation of capabilities along with related components of CA. Commodities (means to achieve) along with the conversion factors (personal and contextual) shape the capabilities (opportunities to achieve), which ultimately shape the functionings (achievements) of the individual (e.g. Sen, 1999; Robeyns, 2005a). The scope of this study is reflected by the ellipse in Fig. 1 as capturing commodities, conversion factors and capabilities, leaving out functionings. The strength of the interdisciplinary CA is that the core ideas of the approach, such as importance of freedom and the heterogeneity in individual circumstances, are easy to understand across different cultures and settings. CA has thus been much developed on the theoretical level to frame diverse social phenomena.

The importance of freedoms for individual wellbeing may be a commonly recognized universal goal, but on the practical level, operationalization of CA components for the empirical measurement has been seen as challenging due to CA's rather theoretical, yet unspecified nature (Robeyns, 2005b; Chiappero-Martinetti et al., 2015; Till et al., 2021). "The openness" of the theory, and the latent, overlapping nature of the different components of CA, leave room for different interpretations, which can be considered both an opportunity and a challenge for the operationalization of CA (Binder & Coad, 2011). It has even been questioned whether capabilities can be measured in the first place, and if the focus should be on functionings or other factors, or how to operationalize commodities and conversion factors (Dang, 2014). Recently, empirical development of CA has been rapidly growing from various angles, e.g. by examining the various components of CA together (Muffels & Headey, 2013), by clarifying the empirical underpinnings of CA (Chiappero-Martinetti et

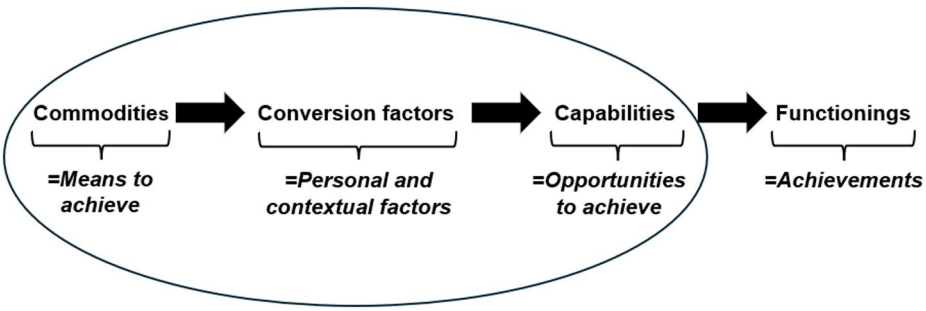

Fig. 1 Theoretical simplification of the components of CA: commodities contribute to conversion factors that contribute to capabilities that contribute to functionings (adapted and edited from Robeyns, 2005a; Frahsa et al., 2021)

al., 2020), or by investigating the role of perceived capabilities in mediating the effects of resources on functionings (Mäki-Opas et al., 2022), to list a few.

Traditionally CA has been an objective approach, conceiving wellbeing as consisting of a set of elements (capabilities and functionings) that are objective, intrinsically valuable and independent of individual evaluations (e.g. Sen, 1984). To date, capabilities have also been measured mostly objectively: "*the overwhelming majority of empirical applications of the capability approach adhere to concrete objective measures of functionings and opportunities*" (Agee & Crocker, 2013).

Our study complements the measurement of CA by applying subjective scope to examine capabilities and related factors in the context of long-term unemployed Finns. We suggest that how people perceive their access to capabilities and related factors is an important determinant of their wellbeing. Individuals' acts are not a response to "objectively" defined social world, but rather to their subjective interpretation of the(ir) world (Kroll & Delhey, 2013): "*If men define situations as real*, *they are real in their consequences*" (Thomas & Thomas, 1928, 572, as cited in Kroll & Delhey, 2013). Of course, Sen (e.g. 1984) has criticized subjective metrics and it is essential to consider many of his relevant points when interpreting the results, but to date, subjective approaches have been widely applied and considered relevant methods to enrich our understanding of individual wellbeing. Moreover, operationalization and testing of CA from various angles can ultimately foster a better understanding of the ambiguities of capability theory itself (Anand & Van Hees, 2006).

2.2 Research Objectives

The basic idea of this study is to test empirically Sen's CA model to determine if the main theoretical assumptions are supported, along with a specific capability tool (7 + 1 item self-reported capabilities measure) by using data of a particular population sub-group of Finnish long-term unemployed people (persons without employment for over 12 months, aged 20–64 years, not receiving any specific employment service by the time of filling the survey). Unemployment may be considered an ultimate risk for wellbeing (McKee-Ryan et al., 2005). The magnitude of unemployment's negative effects on wellbeing has been found to accumulate over time (Worach-Kardas & Kostrzewski, 2014), making the long-term unemployed a specific group to investigate in the context of perceived capabilities. Little empirical information exists on the perceived capabilities of the long-term unemployed, but the study by Van Ootegem and Verhofstadt (2015) demonstrated that, compared to different socio-economic groups, the long-term unemployed were the group with the poorest perceived capabilities.

In this study, we first describe perceived capabilities and related factors among long-term unemployed Finns in total and by gender groups. Given that perceived capabilities have been found to vary between men and women (Anand et al., 2005), and an essential body of literature has demonstrated that many of the outcomes related to unemployment have been gendered (e.g. Weckström, 2012; Álvaro et al., 2019), we expect to find variation in perceived capabilities between genders. By using secondary data (Pitkänen et al., 2024), we also compare perceived capabilities of the long-term unemployed with the general Finnish population and assume the long-term unemployed have relatively poor perceived capabilities, as noted by Van Ootegem and Verhofstadt (2015). In addition, we test the psychometric properties of the Finnish translation of the capability measure used in the study, as to our

knowledge Hofmann et al. (2013) are the only authors who have previously reported on the technical performance of this particular capability measure in three different language versions (German, French, Italian). Our main aim is to operationalize and test the data against the theoretical premises derived from the CA. By using CFA, we first build a measurement model to assure that the data fits with the theoretical constructs of CA in general. By using SEM (as previously, e.g. Krishnakumar & Ballon, 2008, and as many others have successfully applied when examining CA), we then build a more detailed structural model to test if perceived commodities convert to perceived capabilities through perceived conversion factors (e.g. Robeyns, 2005a). In addition, drawing from the importance of social aspects of wellbeing and unemployment's negative consequences on them (e.g. Jahoda, 1981; Lindsay, 2010; Gedikli et al., 2023), we evaluate whether, in relation to perceived environmental conversion factors, perceived social conversion factors contribute more strongly to perceived capabilities among our study group. We further investigate whether the effects of perceived social conversion factors vary between genders.

Our specific research aims:

A1: How are perceived capabilities distributed among long-term unemployed men and women?

A2: Does the empirical data of the long-term unemployed fit with the theoretical framework of the Capability Approach?

A3: Do perceived social conversion factors have a relatively stronger effect on perceived capabilities among long-term unemployed Finns, and does the effect vary between genders?

The main hypotheses of the study:

H1. There is gender variation in perceived capabilities among long-term unemployed men and women.

H2. Perceived commodities convert to perceived capabilities through perceived conversion factors.

H3. Perceived social conversion factors have a particularly strong effect on perceived capabilities among the long-term unemployed and the effect varies between genders.

3 Data and Methods

3.1 "Inclusive Promotion of Health and Wellbeing" (PROMEQ) Data

PROMEQ: Health and Well-being of the Long-term Unemployed 2016–2018 data ($N = 511$) (see FSD: Finnish Social Science Data Archive, 2022) were obtained in the PROMEQ study that was funded by the Academy of Finland/Strategic Research Council (#303615)

and was collected in several phases. We used in our analysis the baseline data that was collected in the beginning of the project in 2016. Baseline data were collected in two stages. Part of the respondents ($n=92$) were new clients of the multisectoral employment services[1] (the service model has been established by the act 1369/2014) recruited via the services' employees. Another part of the respondents comprised long-term unemployed in passive unemployment ($n=419$), who were not taking part in any specific employment services and were obtained by random sampling using registers of the Ministry of Economic Affairs and Employment of Finland. We operated from the assumption that the two samples combined were comparable, given that the survey was completed by the new clients of multisectoral employment services *before* the service had started. A total data consisted of 511 respondents. Respondents of the study can be characterized as long-term unemployed in passive unemployment from five, mainly middle-sized Finnish cities. Prior to data collection, power calculations were used to determine a sufficient sample size. The survey was a structured self-employed questionnaire. In addition to the capability measure, the survey contained questions related to social wellbeing, living habits and conditions, and use of services. Table 1 describes the variables used in the analyses.

3.2 Capability Measure

While objectively an individual may either have or not have a certain capability (e.g. to be happy, healthy, etc.), we focused on individuals' own perceptions of their capabilities. The capability measure applied in the study thus reflects the perceived (i.e. subjectively evaluated and self-reported) capabilities of the respondent. Mäki-Opas et al. (2022) have defined that in reflection to the core focus of CA, i.e. what people are able to do or be, including the capability to choose from alternatives, perceived capabilities can be considered to reflect the confidence or hope that the current state (of wellbeing) of an individual is open

Table 1 Description of variables used in analyses, PROMEQ data 2016, $N=511$

Variable	Obs.	Missing	Mean	Min	Max	SD	Skewness	Kurtosis
Sufficiency of income	$n=501$	$n=10$ (2%)	2.8	1	5	1.3	0.1	1.9
Education	$n=510$	$n=1$ (0.5%)	2.1	1	3	0.7	-0.1	2.0
Age-groups	$n=496$	$n=15$ (3%)	2.1	1	3	0.8	-0.2	1.7
Food	$n=500$	$n=11$ (2%)	1.6	1	2	0.5	-0.3	1.1
Activities	$n=497$	$n=14$ (3%)	1.4	1	2	0.5	0.4	1.2
Housing	$n=495$	$n=16$ (3%)	1.9	1	2	0.3	-2.2	5.9
Dignity	$n=505$	$n=6$ (1%)	3.4	1	6	1.3	0.1	2.5
Discrimination	$n=507$	$n=4$ (1%)	2.3	1	3	0.7	-0.5	2.2
Connectedness	$n=508$	$n=3$ (1%)	3.4	1	5	1.1	-0.2	2.4
Healthy environment	$n=506$	$n=5$ (1%)	3.5	1	5	0.8	-0.0	3.0
Living environment	$n=509$	$n=2$ (0.5%)	3.8	1	5	1.0	-0.9	3.4
Safety	$n=507$	$n=4$ (1%)	2.6	1	4	0.9	0.1	2.2
C1 happiness	$n=506$	$n=5$ (1%)	4.6	1	7	1.5	-0.3	2.6
C2 sense of achievement	$n=504$	$n=7$ (1.5%)	4.3	1	7	1.5	-0.2	2.5
C8 capabilities overall	$n=504$	$n=7$ (1.5%)	5.0	1	7	1.4	-0.5	2.9

[1] In Finland, the multi-sectoral service model aims to contribute to the employability of jobseekers in challenging positions through integrated cooperation of social-, health- and employment services. The service is directed toward jobseekers on the basis of a professional assessment.

to change by one's own agency. The capability measure we used was developed by Anand and Van Hees (2006) and has been previously developed and tested mostly among affluent population groups (e.g. Anand & Van Hees, 2006; Van Ootegem & Verhofstadt, 2012; Hofmann et al., 2013), and recently also among disadvantaged groups (Mäki-Opas et al., 2022). The capability measure starts with the statement "*I feel the scope…*" followed by seven item-specific questions about individuals' self-reported capabilities in seven central life dimensions: "happiness", "sense of achievement", "health", "intellectual stimulation", "social relations", "environment", and "personal integrity". Following the seven questions is the last, eighth item, "capabilities overall" that is assumed to summarize all the seven capability dimensions: "*Taking all the things together*, *I think my options are…*". The measure contains Likert-like response categories from 1 "*Very bad*" to 7 "*Very good*", and in between these low and high ends, there is an option 4 in the middle, labelled as "*Neutral*". Qualified translators, using the back-translation method, translated the capability scale from the original English version (Anand & Van Hees, 2006) into Finnish. For the first round of the translation process, translators were offered relevant background information about the capability measure and its purpose.

3.3 Other Measures

The variables and their item-specific measures have been listed below (see also Sect. 4.3 for more detailed information).

Income (observed).

Commodities (latent): food, activities and housing.

Environmental conversion factors (latent): living environment, healthy environment and safety.

Social conversion factors (latent): dignity, discrimination and connectedness.

Personal conversion factors (observed): education level, age-group, gender.

Variables were coded from negative to positive (higher values represented more positive outcomes). In addition to latent variables of commodities, social and environmental conversion factors, we used income (as a command over commodities), as well as education-level, age-group and gender (as personal conversion factors) as observed variables.

3.4 Statistical Analysis

Analyses were conducted using STATA (version 15.1, StataCorp, 2017). In the preliminary phase of the research, we used descriptive statistics to investigate variables and crosstabs with chi² tests to characterize the study population. When investigating the validity of the Finnish version of the capability measure, we used descriptive statistics, Cronbach's alpha coefficient, Spearman's rank correlations and regression analysis to analyse associations between capability items, and exploratory factor analysis to examine if a single factor struc-

ture could be found for the seven item-specific capability dimensions. In preliminary analyses, due to the minor amount of missing data (0.5-3%), we decided not to replace missing values (in the Stata program, missing values are omitted from the analyses by default). As the main methods of a study, CFA was used to investigate if the study data fit the theoretical constructs of CA in general, and SEM with latent and observed variables, and group analysis (gender), were conducted to further examine the paths between perceived resources, conversion factors and capabilities (Byrne, 2010; Kline, 2016). FIML-estimator (maximum likelihood with missing values) was used in analyses. Before the analyses, normality of data was checked. Skewness and kurtosis values (Table 1 "Description of variables used in analyses") were within an acceptable range (<3/skewness, <10 kurtosis) for conducting SEM (Kline, 2016, p. 76). Moreover, correlation analysis (online appendix B "Correlation matrix of the variables of the study") and variance inflation factor (VIF) multicollinearity test were conducted for variables. Correlations were between −0.3 and 0.8 (only the three capability variables were over 0.7). Mean VIF was 1.95 suggesting that too high multicollinearity did not exist (values < 5 usually considered acceptable). We considered SEM as a suitable method to analyse CA, as applications of SEM allowed us to operationalize and to test CA theory against empirical data (confirmatory mode), as well as to contribute to theory development of CA through testing potential relationships between variables (exploratory mode) (Raykov & Marcoulides, 2006). Fit indices of the models were interpreted based on recommendations from previous research (e.g. Hu & Bentler, 1999).

4 Results

4.1 Characteristics of the Study Respondents

Study respondents were Finnish long-term unemployed people, meaning that respondents had been without employment for at least one year, and by the time of completing the survey had not taken part in activation services. Their mean age was relatively high (53 years). Respondents were mainly from middle-sized Finnish cities (City of Helsinki was an exception) from Southern (Helsinki), Eastern (Kuopio, Joensuu, Lappeenranta) and Central Finland (Jyväskylä). Table 2 demonstrates the characteristics of the respondents and the statistical significance of differences between gender groups. Respondents were between 20 and 64 years old males (52%) and females (48%), and their educational background was mainly middle-level (49%). Income was reported at least to some extent insufficient by 67%. Finding money for activities seemed to be challenging (61% reported that during the last 12 months, they had skipped socializing with friends, hobbies or other leisure activities due to the lack of money). Damaged dignity was reported by 24% of the respondents. In total, over half of the respondents reported experiencing discrimination due their unemployment either a lot (13%) or to some extent (42%). Loose social connectedness (loneliness) was reported by 18% of the respondents. Environment was reported as not healthy by 20% of the respondents. Dissatisfaction with living environment was reported by 12% of the respondents. About half of the respondents reported at least to some extent challenges to feeling safe. Overall perceived capabilities were reported as very bad by 12% of the respondents.

To examine the variation in perceived capabilities and related factors, we used gender as a grouping variable (Table 2). Statistically significant differences were found in income (suf-

Table 2 Characteristics of the long-term unemployed Finnish study respondents and the statistical differences (p-values) between gender groups ($N = 511$, PROMEQ-data 2016)

	Total	Women (48%)	Men (52%)	*P*-value
Education level				0.683
Low	22%	21%	23%	
Middle	49%	49%	51%	
High	29%	30%	27%	
Age group				0.570
20–49 years	37%	26%	22%	
50–59 years	39%	39%	39%	
60–64 years	24%	35%	39%	
Sufficiency of income				0.016*
Insufficient	33%	36%	45%	
To some extent insufficient	26%	25%	27%	
Sufficient	41%	39%	27%	
Food				0.097
Insufficient	44%	40%	47%	
Sufficient	56%	60%	53%	
Activities				0.249
Insufficient	61%	58%	63%	
Sufficient	39%	42%	37%	
Housing				0.839
Insufficient	13%	13%	13%	
Sufficient	87%	87%	87%	
Dignity				0.077
Damaged dignity	24%	20%	26%	
Not damaged or undamaged dignity	57%	57%	58%	
Undamaged dignity	19%	23%	16%	
Discrimination (due the unemployment)				0.054
Discriminated against a lot	13%	12%	13%	
Discriminated against to some extent	42%	37%	46%	
No discrimination	45%	51%	41%	
Connectedness				0.119
Loose	18%	14%	21%	
To some extent loose	36%	38%	35%	
Good	46%	48%	44%	
Healthy environment				0.740
Not healthy	20%	6%	7%	
Somewhat healthy	23%	44%	47%	
Healthy	57%	50%	46%	
Living environment				0.874
Dissatisfied	12%	12%	13%	
Neither dissatisfied or satisfied	17%	16%	17%	
Satisfied	71%	72%	70%	
Safety				0.969
Not at all or little	10%	9%	9%	
A moderate amount	41%	42%	41%	
Very much	49%	49%	50%	
C8 capabilities overall				0.000***
Bad	12%	7%	17%	

Table 2 (continued)

	Total	Women (48%)	Men (52%)	*P*-value
Not bad or good	23%	21%	25%	
Good	65%	72%	58%	

ficiency) and perceived capabilities overall. Also perceived discrimination (due to unemployment) was nearly statistically significant. Men more often perceived their income as insufficient and reported poorer perceived capabilities and greater perceived discrimination due to unemployment compared to women. In addition, respondents' seven more detailed capability dimensions were compared between genders (see online appendix C "Distribution of perceived capabilities"). Men perceived their capabilities as poorer in each of the seven measured dimensions of perceived capabilities, especially for C1 happiness, C5 social relations and C2 sense of achievement. Differences in perceived capabilities between gender groups were statistically significant in all other dimensions, except for C4 intellectual stimulation. We also made a comparison of perceived capabilities between our sample of the long-term unemployed Finns and the sample of overall population with the secondary data from year 2022 (N=2190)[2] (Pitkänen et al., 2024). Comparison is available in online appendix C. Results demonstrated that long-term unemployed respondents reported poorer perceived capabilities in each of the measured capability dimensions, but especially for C1 happiness, C2 sense of achievement and C3 health, compared to the general Finnish population.

4.2 Psychometric Properties of the Finnish Translation of Capability Measure Among the Long-Term Unemployed

Measure validation is an important initial step in research when applying scales to novel population groups and contexts. We evaluated the psychometric properties (i.e. the statistical quality) of the Finnish translation of capability measure used in the study. We replicated the statistical procedures conducted in Hofmann et al. (2013) to allow the comparability of the psychometric properties of our Finnish version of the capability measure to German, French and Italian versions. The analyses indicated the psychometric properties of the Finnish translation of capability measure to be good and consistent, aligning in most part with the results of Hofmann et al. (2013). The results can be found in online appendix D: "Psychometric properties of Finnish version of capability measure".

[2] The secondary data were used to compare the level of perceived capabilities between our sample of long-term unemployed Finns (2016) and the sample representing the general Finnish population (2022). We acknowledged that higher-educated people (45%) were slightly more represented in the secondary data (as it represented the general population). We acknowledged also a temporal six-year gap between the datasets but assumed that the levels of perceived capabilities would be overall quite stable over time (as the levels of subjective wellbeing have earlier demonstrated). However, to our knowledge, perceived capabilities have not been measured among a sample representing the general Finnish population before 2022, meaning that the secondary data used was indeed our only option to set any reference point for levels of perceived capabilities of long-term unemployed Finns.

4.3 Confirmatory Factor Analysis for Latent Variables (Measurement Model)

The measurement model for four latent variables (perceived commodities, social and environmental conversion factors and capability) was built in phases. Our intention was to build a measurement model that would fit, especially for Finnish long-term unemployed persons. Although the theoretical assumptions of CA guided the process, our approach was partly explorative in nature, within the limits of the data and the relative deficiency of previous suggestions of the relevant variables for perceived commodities and conversion factors. Income (a single question of the sufficiency of total household income), and personal conversion factors (education level, age-group, gender) were left out of the confirmatory factor analysis, as we decided to add them to the SEM model as observed variables.

The latent variable *commodities* was constructed through the variables of *food*, *activities* and *housing.* Variables were considered to reflect relevant commodities (goods and services) in terms of basic necessities among the long-term unemployed. Variables were each measured via the following questions: "Have you ever, in the last 12 months, been in a situation where you ran out of food money? Have you ever, in the past 12 months, due to lack of money skipped meeting with friends, participating in hobbies or other leisure activities? Have you ever, in the past 12 months, been unable to pay housing costs?". Factor loadings of the three indicators for commodities were between 0.4 and 0.7.

Environmental conversion factors reflected the quality of the individual's surroundings, as in the Finnish context environmental risks, etc., may not be heavily present in people's lives. Indicators chosen were *healthy environment*, *living environment* and *safety*. *Healthy environment* was measured via the single question, "How healthy is your physical environment?" *Living environment* was measured via the single question, "How satisfied are you with the conditions of your living place?" *Safety* was measured via the question, "How safe do you feel in your daily life?" Standardized factor loadings of the three indicators of *environmental conversion factors* were between 0.6 and 0.8.

For the latent variable *social conversion factors* we chose indicators reflecting the special social circumstances of the long-term unemployed related to social exclusion and psychosocial challenges. *Social conversion factors* were constructed of *connectedness*, *dignity*, and *discrimination*. *Connectedness* was a single question of loneliness scaled to the reversed order, where the smallest value "all the time (lonely)" indicated *loose social connectedness*, and the highest value "never (lonely)" indicated *good social connectedness*. *Dignity* was measured via the two statements, that were computed to a sum variable: "I don't feel the value of what I do is recognized by others", and "Some people look down on me because of my job situation or income". *Discrimination* was a single question of "Have you experienced discrimination due the following factors: unemployment?" Standardized factor loadings of the three indicators to *social conversion factors* were between 0.5 and 0.7.

The latent variable of *capability* (reflecting perceived capabilities) was constructed from the three "most general" capability items: *C1 happiness*, *C2 sense of achievement*, and *C8 capabilities overall*. Standardized factor loadings of the chosen three indicators for *capability* were between 0.8 and 0.9.

After estimating the model, the modification indices were checked. Based on considerations regarding the modification indices, the content of the questions and the previous empirical research, a total of five covariance paths were added between the indicators' error terms: food-housing, dignity-discrimination, connectedness-C1 happiness, healthy envi-

ronment-living environment and C1 happiness-C2 sense of achievement. Addition of the covariances was evaluated as relevant and justified, given that although the lines between latent constructs do exist on a conceptual level, on the empirical level they are thin. For example, we know from decades of empirical research that social relations (here: connectedness) contribute strongly to happiness (here: C1 happiness), justifying the release of the covariance between them.

Fit indices of the model were the following: $\chi^2(43, N=511)=51.546$, $p=0.174$ (cut off >0.05), RMSEA 0.020 (cut off ≤ 0.06), pclose test $p=0.999$ (cut off >0.05), CFI 0.996 (cut off ≥ 0.95). All reported fit indices indicated a close fit of the model with the data (Hu & Bentler, 1999). The interpretation of the results of the CFA model thus was that theoretical constructs of CA fit empirically well in this study group. Figure 2 shows that the capability items can be considered the strongest items of the model (strongest factor loadings and squared multiple correlations, and the smallest error variances to their latent variable capability). In turn, housing-item may be interpreted as the weakest variable of the model (with factor loading of 0.29), but we considered keeping it in the model, as it fit well in terms of content (reflecting one crucial aspect of the core commodities).

4.4 SEM with Latent and Observed Variables

After constructing the measurement model to confirm that the data fit to theoretical constructs, we conducted the SEM analyses (i.e. structural model, where the paths between variables have been identified). Income and personal conversion factors (age-groups from older to younger, education from low to high) were added to the model as observed variables, along with the previously set covariances (see Fig. 2), and the assumed paths between variables. The main assumption of the model was that commodities were suggested to shape capability indirectly through conversion factors, as presented in CA literature and this was

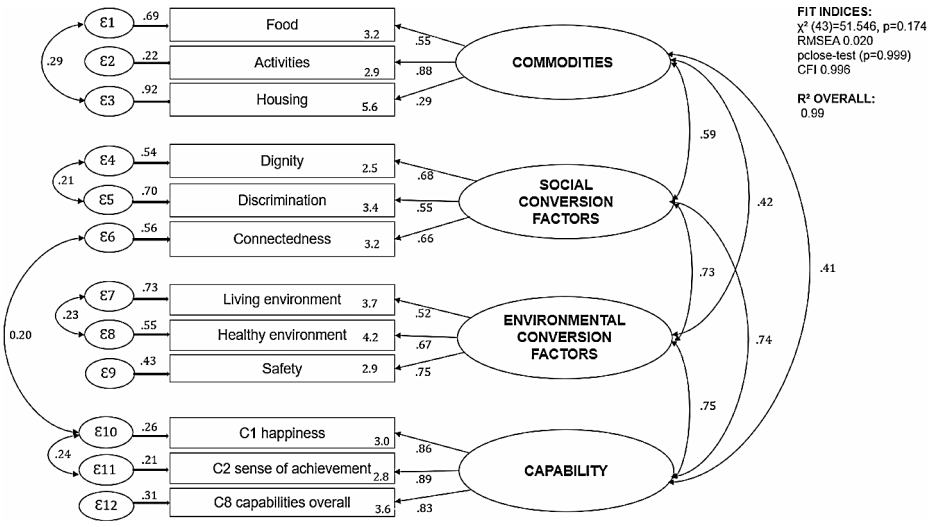

Fig. 2 Measurement model (CFA with FIML estimator) among long-term unemployed Finns ($N=511$) of the latent variables of commodities, social and environmental conversion factors and capability (Stata 15.1)

supported in initial models. To assure the validity of our results, we conducted several alternative SEM-models. For example, we tested if commodities had a direct effect on capabilities, but the path coefficient was not significant. We tested if social conversion factors contribute to environmental conversion factors, or the other way around. Data supported the path from environmental conversion factors to social conversion factors and the effect was strong (0.55). To assure that this finding would not be the result of having *activities* (that referred to sufficient money for meeting friends, hobbies, etc.) as one item of commodities (i.e. possible overlapping with social conversion factors), we conducted one model without commodities (only income was contributing to social and environmental conversion factors) and found that the data still supported the path from environmental conversion factors to social conversion factors. For the final model, non-significant paths from education to environmental conversion factors, and from education to commodities were removed. In addition, based on the modification indices, additional covariance between the error terms of activities and discrimination was released, as we considered it to be rational (inability to afford for social activities may well covariate with feelings of discrimination). Age-group was included to the model in the first phase of testing, but as we found its effects to be very modest, we decided to remove it from the final model.

The final SEM-model is represented in Fig. 3. The explanation rate (r-squared) of the model was 72%, which can be considered good given the complexity of the model. The chi-square goodness of fit test was significant: $\chi^2(64, N=511)=114.531$, $p=0.000$; RMSEA 0.039, pclose test ($p=0.936$) and CFI 0.982. All the fit indices, except the χ^2 test, indicated a close fit of the model with the data (Hu & Bentler, 1999).

Table 3 demonstrates the standardized and significant structural direct, indirect and total effects of the SEM model of the CA. The strongest path coefficients were from income to commodities (0.84), from environmental conversion factors to capability (0.67, partly indirect), and from commodities to social conversion factors (0.63, partly indirect). The path coefficient from environmental conversion factors to social conversion factors was also

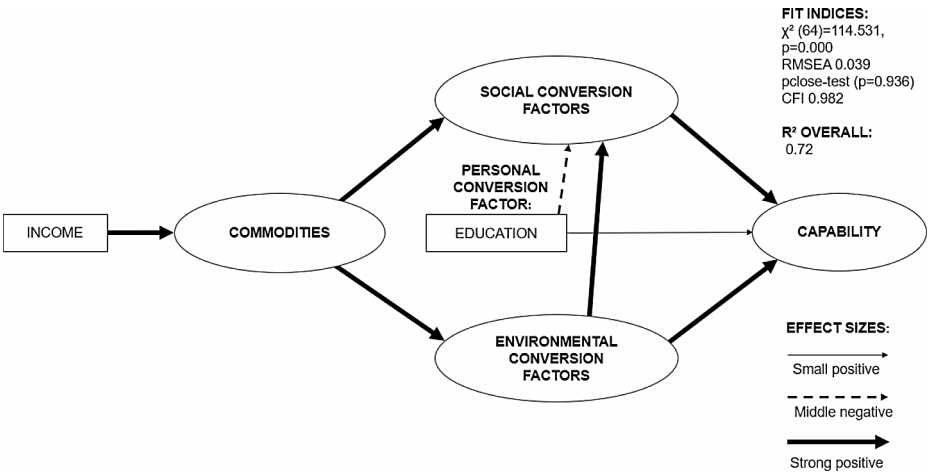

Fig. 3 Final SEM-model of the CA among long-term unemployed Finns ($N=511$) with observed variables of income and education (personal conversion factor), along with latent variables of commodities, social and environmental conversion factors' contributions to capability (Stata 15.1)

Table 3 Standardized, significant structural direct, indirect and total effects of the SEM model of the CA among long-term unemployed finns ($N=511$)

Path	Direct	Indirect	Total
Income ⟶ Commodities	0.84*** (0.000)		0.84*** (0.000)
Income ⟶ Social		0.53*** (0.000)	0.53*** (0.000)
Income ⟶ Capability		0.41*** (0.000)	0.41*** (0.000)
Income ⟶ Environmental		0.42*** (0.000)	0.42*** (0.000)
Commodities ⟶ Social	0.35*** (0.000)	0.28*** (0.000)	0.63*** (0.000)
Commodities ⟶ Capability		0.49*** (0.000)	0.49*** (0.000)
Education ⟶ Social	-0.15** (0.001)		-0.15** (0.001)
Commodities ⟶ Environmental	0.51*** (0.000)		0.51*** (0.000)
Environmental ⟶ Social	0.56*** (0.000)		0.56*** (0.000)
Social ⟶ Capability	0.43*** (0.000)		0.43*** (0.000)
Environmental ⟶ Capability	0.43*** (0.000)	0.24*** (0.000)	0.67*** (0.000)
Education ⟶ Capability	0.08* (0.027)	-0.06** (0.006)	

Only significant effects reported:
*<0.05
**<0.01
***<0.001

relatively strong (0.56). The path from education to capability was positive, but relatively low (0.08), while the path from education to social conversion factors was negative (-0.15).

4.5 SEM Group Analysis by Gender

The general model gave an overview of the formation of perceived capabilities among long-term unemployed Finns, but as such does not offer information about the differences of the CA process. We applied group analysis to investigate in more detail possibly differentiated processes, caused by a certain conversion factor: gender. Group analysis revealed that for men, the path from education to capability was not significant. The explanation rate for men was (r2 = 0.71). For women, the path from education to social conversion factors was not significant. The explanation rate for women was slightly better (r2 = 0.72). We found that for men, paths from commodities to social (0.68 total) and environmental conversion factors (0.53 total) were relatively stronger compared to women (0.57 and 0.44), while for women the path from social conversion factors to capability (0.44) was relatively stronger than for men (0.37). Total effect of environmental conversion factors to capability was stronger (0.68 for men, 0.69 for women) than the total effect of social conversion factors to capability, as the path (from environmental to capability) went directly and indirectly through social conversion factors. More information on the SEM group analysis can be found in online appendix E.

5 Discussion

This study aimed to examine the distribution of perceived capabilities, and particularly the conversion process from perceived resources to perceived capabilities, by investigating the role of perceived conversion factors (personal and contextual) among a particular population group of Finnish long-term unemployed. The secondary aim was also to test the psychometric properties of the Finnish translation of the capability measure applied to a specific group of long-term unemployed Finns.

The hypothesis of the study gained partial support from the analyses (H1 and H2 were supported, H3 was partially supported). Our main results were the following. Long-term unemployed Finns, and especially men, could be characterized as disadvantaged in terms of perceived capabilities, as expected. Perceived commodities contributed to perceived capabilities through perceived conversion factors, as expected. In regard to our third hypothesis, we cannot argue that social conversion factors' effect (in magnitude) was stronger in relation to environmental conversion factors, but we can argue that social conversion factors' role was emphasized as they mediated not only the effects from commodities to capabilities, but also the effects of other conversion factors. Social conversion factors contributed to capabilities more strongly among long-term unemployed women, whereas for men the role of commodities contributing to conversion factors was more strongly emphasized. Test of the Finnish translation of the self-reported capability measure applied to long-term unemployed Finns demonstrated good psychometric properties aligning with the results of Hofmann et al. (2013), although the C7 dimension (personal integrity) differed slightly from other capability dimensions, and thus need to be supervised when examining the properties of this particular capability measure applied in other study groups.

A comparison of perceived capabilities between the sample of long-term unemployed and the sample representing general Finnish population demonstrated that the long-term unemployed reported relatively poorer perceived capabilities in each of the measured capability dimensions (online appendix C). Especially perceived capabilities for C1 happiness, C2 sense of achievement and C3 health, were poorer in comparison to the overall population. There may be many reasons explaining why perceived capabilities were poorer among the long-term unemployed respondents. Unemployment benefit (income), for example, was considered insufficient by 67% of respondents, while of the overall population 37% considered their income to be insufficient (Murto et al., 2016). Every tenth person (10%) among long-term unemployed reported challenges for feeling safe, while for the overall population the corresponding proportion was 3% (FinSote, 2020). Poor perceived capabilities may also be related to the lack of relevant social support. Loose social connectedness was reported by 18% of the respondents, while the corresponding proportion among the overall population was 9% (Murto et al., 2016). In addition, over half (55%) of long-term unemployed Finns reported discrimination due to unemployment a lot or at least to some extent, while almost every fourth (24%) reported damaged dignity, which may implicate the psycho-social consequences of being unemployed in a context with a strong norm to work (McKee-Ryan et al., 2005; Pascoe & Smart Richman, 2009; Schmitt et al., 2014; Roex & Rözer, 2018).

Long-term unemployed men perceived poorer capabilities compared to women in each of the measured capability dimensions. Differences were relatively stark and statistically significant in all other capability dimensions, except C4 intellectual stimulation. For example, 32% of men reported poor capabilities for sense of achievement, 28% for social rela-

tions, and 27% for happiness, while among women the corresponding proportions were 19%, 15% and 13%. Of the observed commodities and conversion factors, greater insufficiency of income and perceived discrimination among men may be related to their poorer capabilities, as differences in these were statistically significant between the gender groups. Insufficiency of employment benefit could be explained through the gender gap in earnings (the relatively starker collapse of income among men). Stronger perceived discrimination may be related to normative expectations of cultural context emphasizing the importance of work, especially the concept of the "working man" in society in general, and the man as the primary provider in the household in particular, contributing to psychosocial challenges (Roex & Rözer, 2018; Álvaro et al., 2019).

The main confirmation derived from our SEM model was that perceived commodities had a strong effect on perceived capabilities, but the paths went indirectly through perceived social and environmental conversion factors. Environmental conversion factors played a crucial role in the model, although the role of social conversion factors was also significant in mediating the effects of commodities and of education (personal conversion factor) as well as of environmental conversion factors to capabilities. Social inclusion (which may be considered to refer to connectedness, discrimination and dignity) has been found to be a crucial determinant of capabilities also in other contexts (e.g. Baumgardt et al., 2020). Personal conversion factors' effects on capabilities and related factors in the model were rather weak, especially age, so that we ended up removing age from the final SEM model. Previous research (e.g. Van Ootegem & Verhofstadt, 2015) has demonstrated that the relationship between age and capabilities may be u-shaped, which is problematic in SEM. In our additional analyses, we did not find u-shape between age and perceived capabilities in our study sample of long-term unemployed Finns. The direct effect of education on perceived capabilities was rather weak (0.08) and the total effect of education on perceived capabilities was not significant. We interpret this result such that while being unemployed, higher education may not contribute strongly to perceived capabilities as one cannot take advantage of her/his education (that is to be employed; the main reason we ultimately obtain school degrees). More specifically, group analysis revealed that among men, education did not contribute to perceived capabilities in this study group, and education contributed negatively to social conversion factors, which may imply educated men are more vulnerable to negative social consequences of unemployment (such as perceiving discrimination, etc.) Good fit indices of our CFA and SEM models may reflect the relevancy of the empirical application of CA particularly among disadvantaged groups, such as the long-term unemployed. Capabilities have previously been found to matter the most for people in disadvantaged positions (Graham & Nikolova, 2015).

The following conclusions may be derived from our results. First, the long-term unemployed could be characterized as disadvantaged in terms of perceived capabilities, especially for happiness, sense of achievement and health. Second, the result of perceived conversion factors mediating the effects of perceived commodities on perceived capabilities may underline that the opportunities to benefit from resources are not the same for all (Robeyns, 2003, 2005a; Bonvin & Moachon, 2008).

From the policy perspective, we consider our results to ultimately imply the need to promote capabilities of the long-term unemployed persons. More sufficient employment benefit, along with targeted practices with a special emphasis on the specific social and environmental aspects of unemployment to respond differentiated needs, are needed in promoting perceived capabili-

ties among the long-term unemployed. Currently, the scope of Finnish employment policies and practices may be too narrow, disregarding the importance of capabilities. Many of the actions of "activation" may actually limit the perceived opportunities for agency among groups with fewer resources (Bonvin & Moachon, 2008). The most disadvantaged may not be able to utilize the resources like those in better social circumstances (Toikko et al., 2018). In this light, CA could offer a common framework and a practical measurement tool for policies in general, and for multi-sectoral employment services in particular, to integrate, develop and monitor whether their interventions succeed in promoting individuals´ perceived capabilities.

5.1 Strengths and Limitations of the Study

The study group of 511 survey respondents from five Finnish cities does not represent a comprehensive sample of the heterogeneous group of the Finnish long-term unemployed and the results cannot be generalized. Nevertheless, the data has the explanatory power to offer important insights into the perceived resources and capabilities of this special study group. Our point of departure was that for our primary data the two samples combined (long-term unemployed about to start receiving multi-sectoral employment services, and long-term unemployed contacted via registers) would be comparable, as those about to start multi-sectoral employment services completed the survey before receiving services. However, there is always a possibility that a respondent simply knowing they would be receiving employment services may influence their self-evaluations (although we know from intervention research that the outcome measures may not change easily even *after* the intervention). Also, issues related to comparability of our primary data (long-term unemployed) from year 2016 and the secondary data (general Finnish population) from year 2022 - that also contained more higher educated people due to the data representing the general population - need to be kept in mind when interpreting the results.

In the context of the operationalization of CA, we are aware that there are several issues to consider although only a few of them are highlighted here. First, the CA model built in the study may or may not work in other settings, as the factors determining the wellbeing and capabilities vary in their magnitude in different contexts and population groups (e.g. Robeyns, 2005b; Graham & Nikolova, 2015). Second, choosing "the right" variables for CA components is challenging given the inescapable overlapping between variables. The chosen and tested variables of our model could also be operationalized as components of other latent structures. Or, social conversion factors (dignity, connectedness, discrimination), for example, could also be operationalized as functionings ("the outcome", not "the precondition" of capabilities). Third, and related to the latter argument, the interaction between the capabilities and the other tested variables may likely be dynamic and mutual instead of being one-directional, which could not be captured with cross-sectional data. Social conversion factors, for example, may enhance perceived capabilities, but also, perceived capabilities may enhance social conversion factors (Binder & Coad, 2011; Gandjour, 2008).

We considered SEM as an applicable method for achieving our research objectives. Due to the openness of the theory of CA, our approach was concurrently confirmatory and exploratory. Consequently, specific hypotheses derived from the theory to be tested were thus quite generic. SEM has still been proposed as a valid method to develop "not well-defined hypothetical constructs" (Raykov & Marcoulides, 2006), and allowed us to develop our analysis during the research. The model developed in the study demonstrated an innovation to operationalize and test the theoretical model of CA empirically and subjectively. We are yet also aware that, in

a way, the model with latent variables also hides information which would be useful with more detailed research objectives, e.g. a path model with observed variables could be more efficient for examining more detailed questions of CA in the future.

Finally, one obvious limitation is that our study could not take extensively into consideration objective measures in examining CA. The study nonetheless succeeded to shed light on the perceived commodities, conversion factors and capabilities of long-term unemployed Finns, highlighting "the voices" that often are dispelled by the voices of the majority. However, the possible limitations of the self-reported capability measure still need to be considered. For example, especially among the long-term unemployed, there is a possibility that cumulative negative experiences hinder the ability to imagine alternative futures (Bazzani, 2023), and thus capabilities may be perceived narrower than they actually would be. Conversely, it is possible that someone may subjectively judge their environment positively (and report high perceived capabilities), whereas a more objective assessment might indicate problems that are not directly visible (e.g. pollution) and objectively this person would have low actual capabilities. Also, the issue of adaptive preferences (e.g. Sen, 1984) (i.e. adjustment to unfavourable conditions) is a valid concern, especially among in our study group whose unemployment has already lasted at least a year. These issues need to be kept in mind when interpreting the results. In the future, objective and subjective measures could be also applied together to examine more thoroughly the "real capabilities" that might be somewhere between objective and subjective levels. In addition, use of longitudinal study designs to estimate the effects and interactions between the variables of CA would allow a more thorough and detailed investigation of the CA.

5.2 Conclusion

The results of the study demonstrated that the long-term unemployed could be characterized as disadvantaged in terms of perceived capabilities, that perceived commodities contributed to perceived capabilities indirectly through perceived conversion factors, and social conversion factors - beside mediating the effects of commodities - mediated also partially the effects of other conversion factors on capabilities. The results underline the need for more effective capability promotion among the long-term unemployed and the need for targeted practices acknowledging variety of circumstances (personal and contextual) of the unemployed. CA may offer a common, comprehensive aim and theory-based tool to better integrate policies and practices to promote perceived capabilities of the long-term unemployed. In the future, the applicability of the CA-model tested in this study could be developed further and tested in longitudinal studies to evaluate the processes and outcomes of the multi-sectoral employment services, as well as causalities and mechanisms of CA theory.

Authors' Contribution All authors contributed to the study conception and design. The manuscript was written by Doctoral Researcher, Tiina Ahonen, and all authors commented on the versions of the manuscript. Professor in Social and Public Policy, Tomi Mäki-Opas (as Research Director of the PROMEQ research project in 2016–2019), had the strongest overall expertise regarding the study and data and he supervised the whole research process. Professor in Sociology, Antti Kouvo, contributed especially to the methodological part of the research. Professor in Social Work, Timo Toikko– as an expert especially in the issues of unemployment– contributed to the design and content of the research article. All authors read and approved the final manuscript.

Data Availability "PROMEQ: Health and Well-being of the Long-term Unemployed" (2016-2018) data of the study were obtained as part of the wider "PROMEQ Inclusive Promotion of Health and Wellbeing" project (2016-2019), that was funded by the Academy of Finland/Strategic Research Council (#303615). Study

data are available in Finnish (in English by request) in the Finnish Social Science Data Archive https://urn.fi/urn:nbn:fi:fsd:T-FSD3433.

Declarations

Ethics Approval The PROMEQ study received approval from the University of Eastern Finland Committee on Research Ethics in 2017 assuring that essential ethical aspects have been properly considered.

Consent Each study participant signed an informed consent form to be included in the study. In part of the consent process, participants were offered an outline of the PROMEQ study and the contact details of the responsible researchers to access additional information or for further questions. Participants were informed that involvement in the study was voluntary, and of their right to withdraw from the study at any point of time.

Conflict of Interest The authors declare they have no potential financial or non-financial conflicts of interest with respect to research, authorship or publication of this article.

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