

Studying precarious employment

Methodological challenges I

Johanna Jonsson

PhD, MPH

Postdoctoral Researcher

Unit of Occupational Medicine, Institute of Environmental Medicine

Karolinska Institutet

PREMIS 

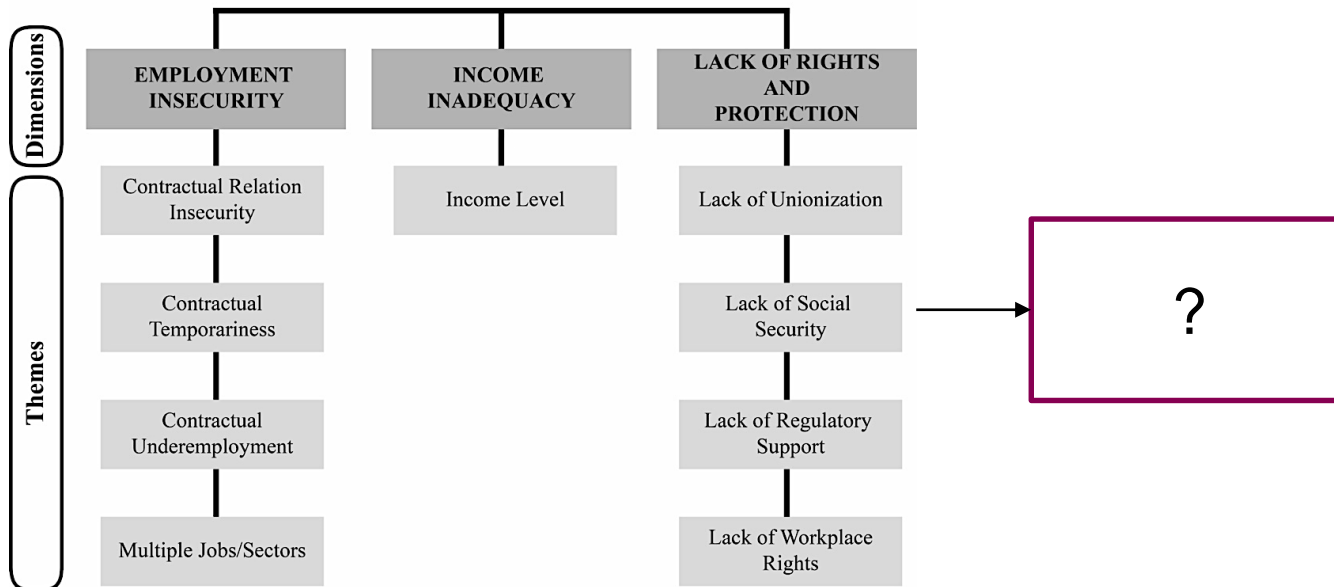
Precarious Employment in Stockholm

En studie om dagens arbetsmarknad och hälsa



What now?

Precarious Employment



A definition of precarious employment ...

- Provides us a starting-point for operationalizations – construction of measures - of PE →
- Enables studies of the prevalence, distribution, trends of precarious employment, and
- studies of health outcomes, e.g., mental health, musculoskeletal pain, cardiovascular disease, occupational accidents and injuries etc.

Challenges in precarious employment research

Not quite. What could be some challenges to studying precarious employment?

→ Defining and operationalizing (measuring) PE

- Several definitions/operationalizations, e.g., unidimensional vs. multidimensional approaches
- Are there various forms of precarious employment?
- Are measures comparable across studies, populations, contexts?
- Can we expect similar implications across individuals and populations?

→ Collecting the appropriate data

- Is relevant data available? If not, can we collect it?
- Can we ensure that we are collecting data from the appropriate population?
- Issues of response rates, proxy variables and bias...

→ Studying the appropriate population

- Which sub-groups should we strive to include?
- How to deal with the self-employed?
- Can unemployed individuals be precarious?
- Stratification by sex, age...?

→ The issues of study design

- Cross-sectional vs. longitudinal approaches
- How can we best account for precarious employment across time?
- Do we need particular or novel analytical approaches?

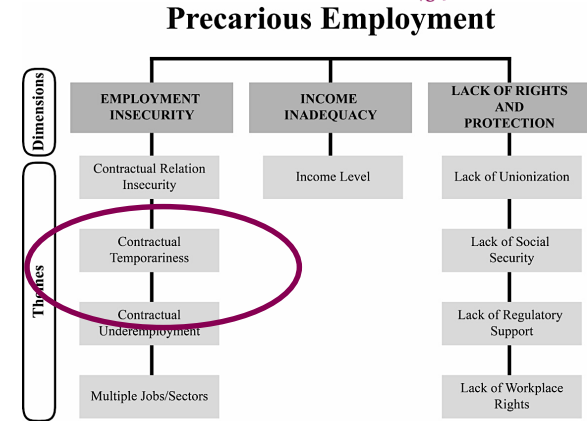
Outline

- Conducting studies on precarious employees – identifying and overcoming (?) some methodological challenges. Focus on:
 - Measuring precarious employment
 - Recruitment and data collection

 - Examples on these from research in Sweden

Measuring precarious employment in epidemiological research

- Unidimensional vs multidimensional measures
- Unidimensional: employment type, e.g., temporary employment
 - Often a readily available indicator of (non-standard) employment
 - Temporary employees more likely of being precarious, but also permanent employees can be precarious (Julia et al 2017)
 - Temporary employment → misclassification of precarious employment and underestimation of associations with health outcomes, e.g.,
 - 41% misclassified (Vives et al 2020a)
 - 2.06 (3.07 vs. 0.99) = point estimate difference for general health (Vives et al 2020b)



Examples of multidimensional measures of precarious employment

- The Employment Precariousness Scale (EPRES)
- The Employment Precarity Index (EPI)
- Various other composite measures, either summative or typological

Measures I

The EPRES – a validated scale developed to measure employment precariousness (Vives et al 2010, Vives et al 2015).

- 6 Dimensions, 22 items – scored and averaged, range 0-4
- When precarious? Various cut-offs in literature
- Expanding the EPRES:
 - Chilean, Swedish versions
 - + European version constructed from European Working Conditions Survey-data (Matilla-Santander, 2020; Padrosa et al 2021a, Padrosa et al 2021b)

Dimension	Item(s)
Temporariness	Duration of current contract Tenure
Disempowerment	How did you settle your workplace schedule? How did you settle your wages or salary?
Vulnerability	Able to demand better working conditions Defenceless towards unfair treatment Afraid of being fired for not doing. . . Treated in an authoritarian manner Made to feel easily replaceable
Wages	Monthly take home (net) wage or salary Cover basic needs? Allow for unexpected expenses?
Rights	Pension Severance pay Maternity/paternity leave Unemployment benefit/compensation
Exercise rights	Weekly holidays Sick leave Go to the doctor Take vacations Day off for personal reasons Day off for family reasons

Measures II

The EPI – a tool to measure employment security (Lewchuk 2017)

- 10 indicators, all given the same weight, score-range 0-100
- Precarious = lowest score quartile (other: Secure, Stable, Vulnerable)

The EPI

Do you usually get paid if you miss a day's work?

Do you have one employer, whom you expect to be working for a year from now, who provides at least 30 hours of work a week, and who pays benefits?

In the last 12 months, how much did your income vary from week to week?

How likely will your total hours of paid employment be reduced in the next 6 months?

In the last 3 months, how often did you work on an on-call basis?

Do you know your work schedule at least 1 week in advance?

In the last 3 months, what portion of your employment income was received in cash?

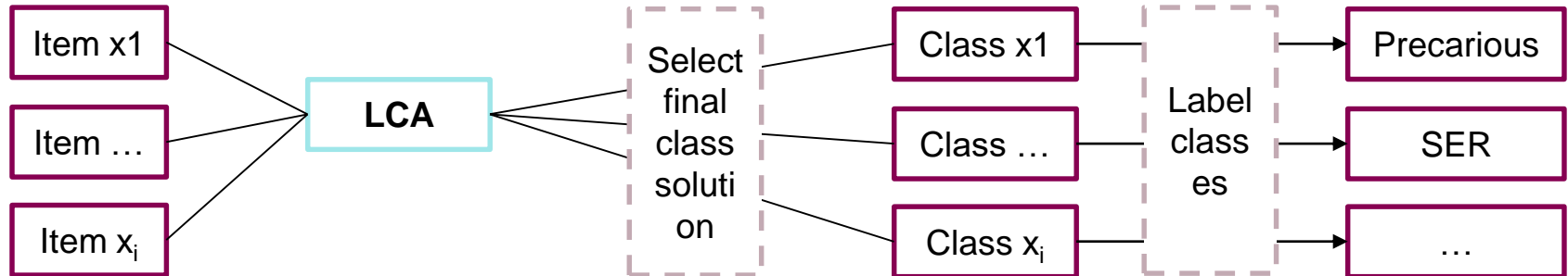
What is the form of your employment relationship (short-term, casual, fixed-term contract, self-employed, permanent part-time, or permanent full-time)?

Do you receive any other employment benefits from your current employer(s), such as a drug plan, vision, dental, life insurance, pension, and so on?

Would your current employment be negatively affected if you raised a health and safety concern or raised an employment-rights concern with your employer(s)?

Measures III

- Various other summative assessments of PE: identify, score, sum up and categorize as PE/poor employment quality.
- Typological measures of PE: usually constructed by data-driven approach e.g., latent class analysis (LCA) which groups the items based on similarity and creates n number of classes labelled according to their features – *employment types*.



Measures III a

Examples of typological operationalizations:

Van Aerden et al 2014, 7 dimensions, 11 items:

1. **Employment (in)stability:** Type of employment contract
2. **(Low) Material Rewards:** Income level; Non-wage benefits
3. **(Erosion of) Workers' Rights and Social Protection:** Uncompensated exceptional working times
4. **(De-)standardised Working Time Arrangements:** Long working hours; Schedule unpredictability, Involuntary part-time employment
5. **(Limited) Employability Opportunities:** Training opportunities
6. **Collective (dis)organisation:** Information on occupational health and safety issues; Working times setting procedure
7. **(Im)balanced Interpersonal Power Relations:** Employee involvement

Measures III b

Van Aerden results:

→ 5 employment types - SER-like jobs, instrumental jobs, **precarious unsustainable jobs**, **precarious intensive jobs**, portfolio jobs

Peckham et al 2019:

→ 8 employment types - SER-like, Portfolio, Inflexible skilled, Dead-end, **Precarious**, **Optimistic precarious** + Self-Employed skilled contractor, Job-to-job

Gevaert et al 2020:

→ 10 employment types - SER-like jobs, Instrumental jobs, **precarious unsustainable jobs**, **precarious intensive jobs**, portfolio jobs, dependent self-employment, small- and medium-sized employers, insecure self-employment, stable own account work, small trades and farming.

Strengths and limitations

▪ *Surveys?*

- Developed to measure the specific construct (PE), can be modified and adapted to specific contexts
- Often limited sample size (power?)
- Generally poor response rates + between sociodemographic groups (bias?)
- Follow-ups possible?

▪ *Composite measures?*

- Make use of readily available data, e.g., national surveys or registers
- If survey-based – also limitations as above
- Use of proxy items (misclassification?)
- Summative: scoring of items and cut-off (possible objective?)
- Grouping of items (data-driven), interpretation & labelling of classes (objective?)

EXAMPLE(S) FROM SWEDEN I

Sampling, recruitment and a survey-based measure – the PREMIS* study

*PREcarious EMPloyment in Stockholm

Non-response rates to the LFS 2002-2014

Diagram 7
Bortfall 2002 – 2014, uppdelat efter kön. Procent



Diagram 9
Bortfall 2002 – 2014, uppdelat efter ålder. Procent



Are precarious employees really represented in the labour force survey?

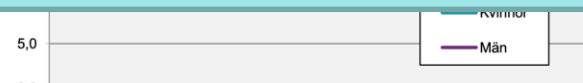


Diagram 11
Bortfall 2002 – 2014, uppdelat efter inrikes och utrikes födda. Procent

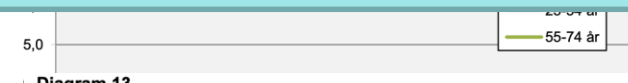
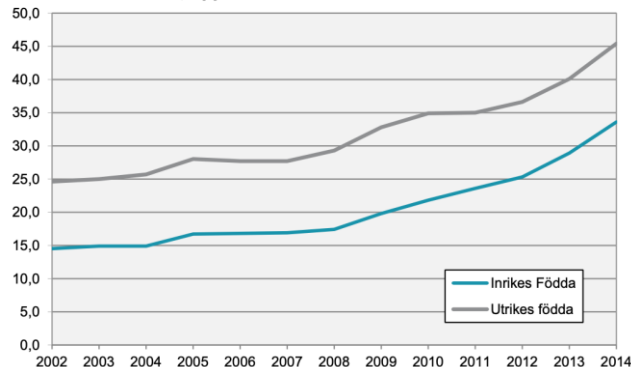
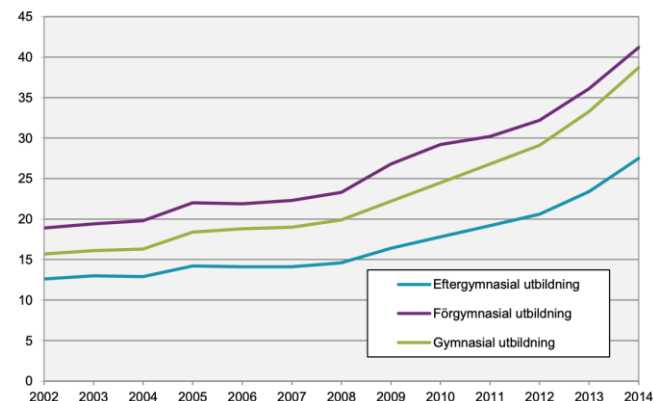


Diagram 13
Bortfall 2002 – 2014, uppdelat efter utbildningsnivå. Procent



Statistics Sweden,
2015.

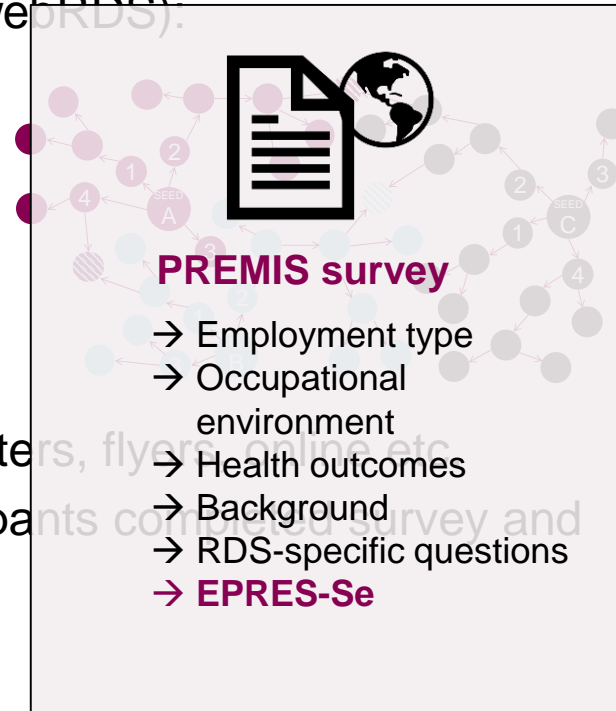
Two studies

- Could we try a non-traditional approach to sample precarious employees?
- **Web-based respondent driven sampling applied to penetrate “hidden” populations, for which there is no sampling frame**
- Aim: To assess the performance of web-based respondent driven sampling among non-standard (PEs) in Stockholm County

- How should we measure precarious employment?
- **Aim: Translate and adapt the EPRES to Swedish/Swedish context**

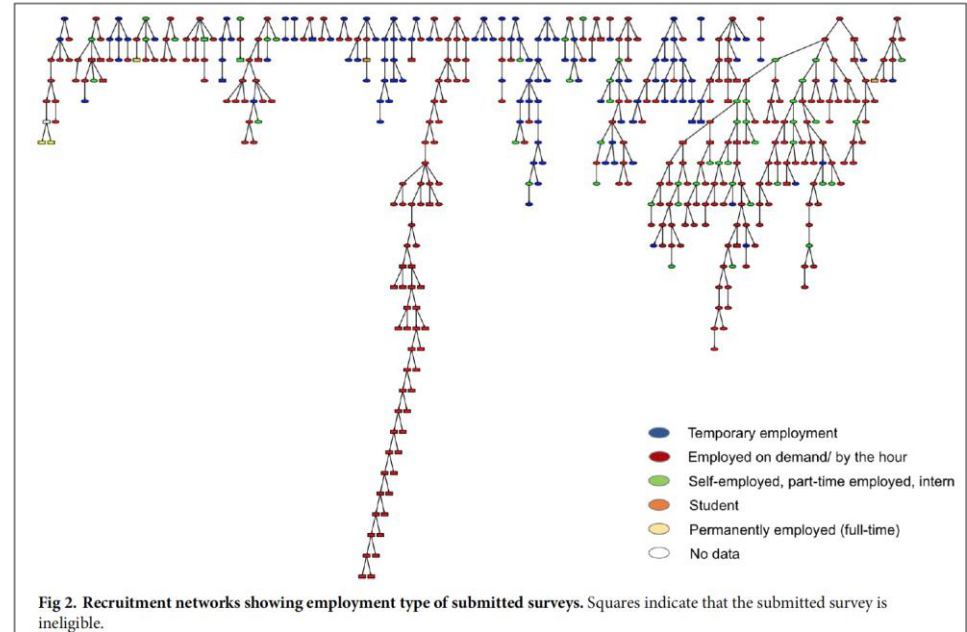
Application of respondent-driven sampling

- Web-based respondent-driven sampling (web-RDS):
 - Development of snowball sampling
 - Peer-to-peer recruitment, starting with *seeds* – recruitment chains
 - Applies sampling weights to account for bias and estimate population estimates
- Recruited seeds through trade unions, posters, flyers, online, etc.
- Web-based software through which participants completed survey and invited peers
- Dual incentives to facilitate participation



Assessment of WebRDS

- Collected sample: **483**
 - 68 excluded due to not matching criteria or suspected cheating
- Response rate: 62%
- Out of 75 seeds: 60% participated, 45% recruited
- Recruitment-chains: 1-27 waves (1-15)
- Sample:
 - female (54%)
 - <29y (74%)
 - employed on demand/by-the hour (59%),
 - high school education (40%),
 - foreign born (20%)



Conclusions of the web-RDS study

- Conclusion: WebRDS proves a useful sampling methodology for precariously employed, although it is not without limitations.

Joint discussion

- *What are your thoughts on the RDS-method?*
- *Is it a good way to recruit PEs? Did we capture the population of interest?*
- *What could be the limitations of the RDS-methodology?*
- *Are there any ethical considerations?*

The EPRES-Se

The translation and adaptation process:

1. translation from Spanish to Swedish
2. cultural adaptation to fit the Swedish context
3. back translation to Spanish and adjustments
4. pilot testing
5. final adaptations based on user feedback in pilot

→ **Final EPRES-Se: 6 dimensions, 23 items**

EPRES-Se, example of adaptation

TEMPORARINESS

1. How long is your current employment contract valid?

If you have more than one employer, please indicate the employer you work the most hours for during an average month.

- Indefinitely
- 2 years or more
- 1 year or more
- 6 months or more
- 3 months or more
- 1 month or more
- Less than 1 month
- Do not have a contract
- Do not know

2. How long have you been working for the same employer?

If you have more than one employer, please indicate the employer you work the most hours for during an average month.

- Less than 1 month
- 1 month to less than 3 months
- 3 months to less than 6 months
- 6 months to less than 1 year
- 1 year to less than 2 years
- 2 years to less than 5 years
- 5 years or more

- Categorized duration and tenure
- Added “Do not have a contract”

Is this a good way to measure temporariness? Why, why not?

EPRES-Se, temporariness-dimension

- Probably not a good way in the Swedish context.
- ‘Temporariness’ had poor reliability, no correlation between items, split in factor analysis in sub-analysis
- Additionally, 79% (n=139) of the respondents answering “indefinite contract” also employed on demand/by the hour = suspicion of ‘zero hour’ contract, i.e., highly precarious.
 - Tenure and duration not necessarily related
- A revised temporariness-dimension could e.g.,
 - Duration of contract at time of survey
 - Measure future opportunities at employer
 - No. repeated contracts, contract renewal

Conclusions of the EPRES-study

- The EPRES-Se generally performed well, with a small proportion of missing values across all subscales, usage of all response options and good global reliability. The factor structure established confirmed.
- The subscales ‘vulnerability’, ‘wages’, ‘rights’ and ‘exercise of rights’ generally worked well in the Swedish context, however
- In addition to ‘temporariness’, also ‘disempowerment’ would benefit from additional adaptation (acceptable psychometric properties)

EXAMPLE FROM SWEDEN II

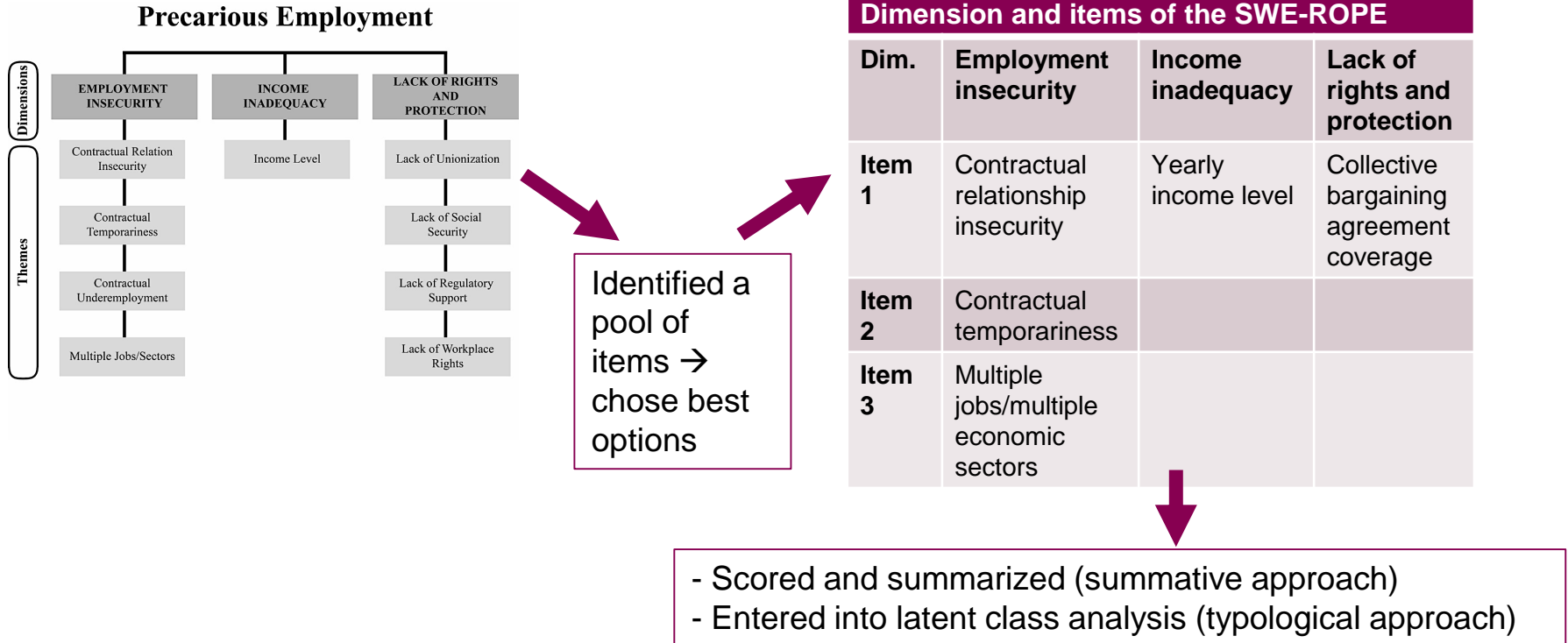
A register-based composite measure – the SWE-ROPE*

*The Swedish Register-Based Operationalization of Precarious Employment

Method and data collection

- Aim: Operationalize a multidimensional definition of PE in Swedish register-data with a typological and a summative approach
- Point of departure: definition from review “what is precarious employment”
- Made use of national register-data from 2014, $n = 4,349,322$

Operationalization of dimensions/items (→ SWE-ROPE)



Summative approach: Scoring of items

Scoring of items of precarious employment in SWE-ROPE					
Score					
Item	-2	-1	0	1	2
Contractual relationship insecurity	Solo self-employed	Self-employed and employed Self-employed with employees Agency employed	Directly employed		
Contractual temporariness	Unstable employment (not same employer past 3y)		Stable employment (same employer past 3y)		
Multiple jobs/economic sectors	≥ 2 jobs in >1 sector	≥ 2 jobs	1 job		
Income, yearly (% of population median)	$<60\%$	60-79%	80-119%	120-199%	$\geq 200\%$
Likelihood of collective bargaining agreement coverage	$\leq 70\%$	71-90%	90-100%		

Typological approach: final employment typology

Employment typology with six types: **Precarious employment relationship, Precarious self-employment, Precarious multiple-job holders, Business owners, Proficians, Standard employment relationship**

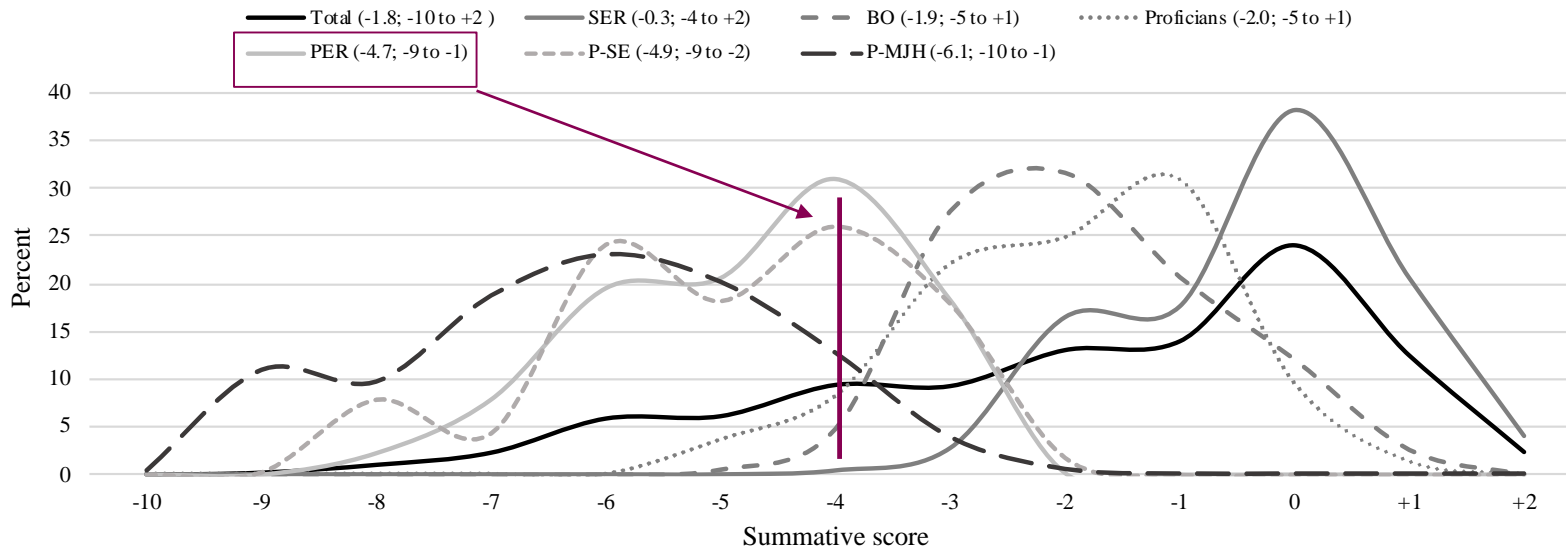
Precarious Employment Relationship (“PER”), 22%

- employment or agency employment, unstable employment
- one job or multiple jobs in multiple sectors
- income below median or close to poverty line

Can this be compared with the results from van Aerden?

Score-distribution among employment types

- Summative score approach: scores ranging between -10 and +2.
- >80% of individuals in PER-type had total score beneath 25th percentile (-4)



Conclusions operationalization-study

- Identified the precarious population with both approaches
 - Summative: degree of PE – but no insight into composition of PE; easy to apply across time
 - Typological: composition of PE, but not easily ranked; size of employment type; context-specific types – some times new discoveries.

Summing up and further challenges to research on precarious employment

- *Which way of measuring PE do you prefer and why?*
- *Which variables/data would you include in order to enhance the operationalization of PE?*
- *Do you think that the operationalization of PE would look differently in your country?*

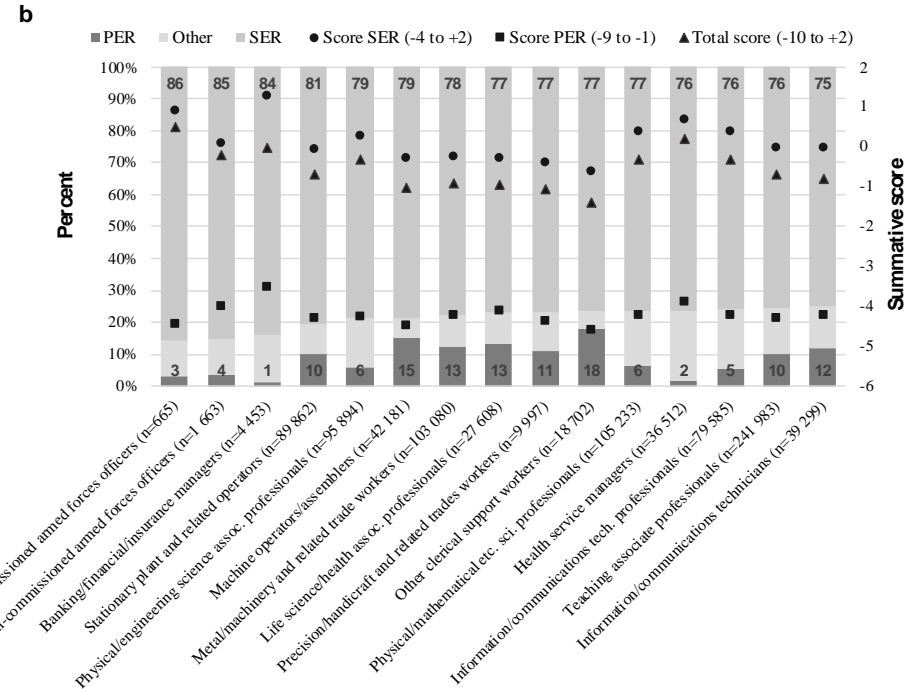
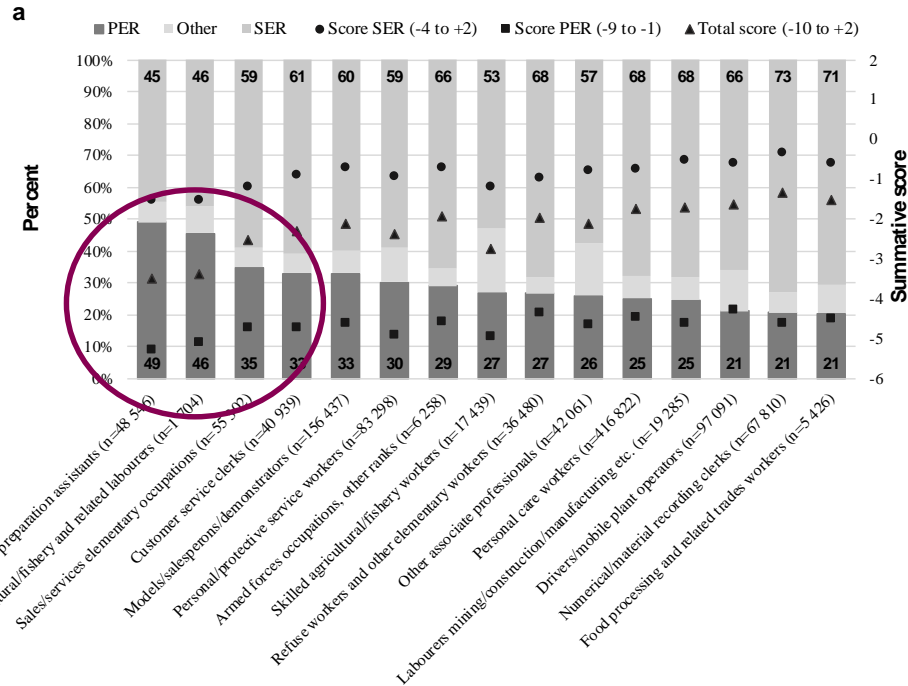
In sum: there are plenty of challenges in PE-research and despite the best intentions there studies can rarely (ever?) be made perfect. Important to acknowledge the limitations but also highlight strengths – and also context-specific similarities and differences -, and try new methods (!) as we always learn something.

More challenges and work on precarious employment in
the next lecture and in the student exercise 😊

Thank you!

Distribution of items of precarious employment (scoring within brackets) for the typology and the total with mean summative scale scores								
	SER	BO	Prof.	PE	P-SE	P-MJH	Total	
	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)	score (SD)
Total	60 (2593238)	2 (89511)	10 (422933)	22 (947882)	5 (199630)	2 (96128)	100 (4349322)	-1.7 (2.4)
Contractual relationship insecurity								
Directly employed by the employer (0)	91 (2409239)	0 (0)	71 (300122)	91 (859475)	15 (30294)	0 (0)	83 (3599130)	-1.4 (2.3)
Employed by an agency (-1)	0 (11291)	0 (0)	0 (1064)	5 (42674)	0 (0)	0 (0)	1 (55029)	-4.2 (2.2)
Combination of self-employed and employed (-1)	7 (172708)	0 (0)	29 (121378)	5 (42753)	3 (6622)	95 (90991)	10 (434452)	-3.1 (2.5)
Self-employed (-1)	0 (0)	100 (89511)	0 (369)	0 (2980)	14 (28455)	4 (3971)	3 (125286)	-2.7 (2.0)
Solo self-employed (-2)	0 (0)	0 (0)	0 (0)	0 (0)	67 (134259)	1 (1166)	3 (135425)	-5.3 (1.6)
Contractual temporariness								
Stable employment (0)	90 (2337085)	95 (85465)	61 (257716)	3 (31247)	79 (157920)	44 (42209)	67 (2911642)	-0.6 (1.7)
Unstable employment (-2)	10 (256153)	5 (4046)	39 (165217)	97 (916653)	21 (41710)	56 (53919)	33 (1437680)	-4.1 (1.9)
Multiple jobs/sectors								
1 employer (0)	95 (2462364)	94 (83852)	0 (257)	39 (364989)	97 (193124)	1 (705)	71 (3105291)	-0.9 (2.0)
≥2 employers (-1)	0 (0)	4 (3670)	41 (172476)	22 (211211)	3 (5345)	32 (30456)	10 (423158)	-3.3 (2.0)
≥2 employers in >1 economic sector (-2)	5 (130874)	2 (1989)	59 (250200)	39 (371682)	1 (1161)	68 (64967)	19 (820873)	-4.1 (2.2)
Income level								
>200% of the median (2)	6 (147649)	7 (6635)	15 (61572)	0 (2099)	1 (2167)	3 (3297)	5 (223419)	-0.2 (1.1)
120-200% of the median (1)	28 (718921)	51 (45409)	63 (265919)	1 (13502)	15 (29230)	21 (20073)	25 (1093054)	-1.1 (1.1)
80-120% of the median (0)	52 (353337)	37 (33102)	20 (84590)	27 (254833)	18 (35459)	28 (27251)	41 (1788572)	-2.6 (0.7)
60-80% of the median (-1)	10 (261192)	3 (2610)	3 (10852)	23 (220159)	24 (47334)	17 (16464)	13 (558611)	-3.2 (0.9)
<60% of the median (-2)	4 (112139)	2 (1755)	0 (0)	48 (457289)	43 (85440)	30 (29043)	16 (685666)	-3.9 (0.4)
CBA								
>90% (0)	87 (255747)	18 (16292)	83 (350843)	61 (582253)	0 (0)	3 (3316)	74 (3208451)	0.0 (1.1)
70-90% (-1)	11 (277117)	36 (32580)	15 (64953)	25 (233301)	0 (0)	10 (9623)	14 (617574)	-1.6 (1.2)
<70% (-2)	2 (60374)	45 (40639)	2 (7137)	14 (132328)	100 (199630)	87 (83189)	12 (523297)	-2.5 (0.7)

The 15 occupations with largest shares of PER (a) and SER (b), respectively, and their average scores



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Assumptions RDS-methodology, Study I

Assumptions

Connectedness

Random recruitment

Recruit with replacement

Accurate network size report

Reciprocity

Recruitment ≥ 1 peer