An aerial, high-angle photograph of a densely packed urban area, likely a tenement or tenement-style housing. The buildings are arranged in a grid-like pattern, with narrow alleyways between them. The colors of the buildings are muted, mostly in shades of grey, brown, and white. In the center of the image, a person is walking down a narrow alleyway, providing a sense of scale to the dense environment. The overall atmosphere is one of a crowded, possibly precarious living situation.

Understanding Precarious Work: Defining the intersection of vulnerability and work organization

Noah Seixas
Trevor Peckham
Anjum Hajat

USE, 2017
Denver

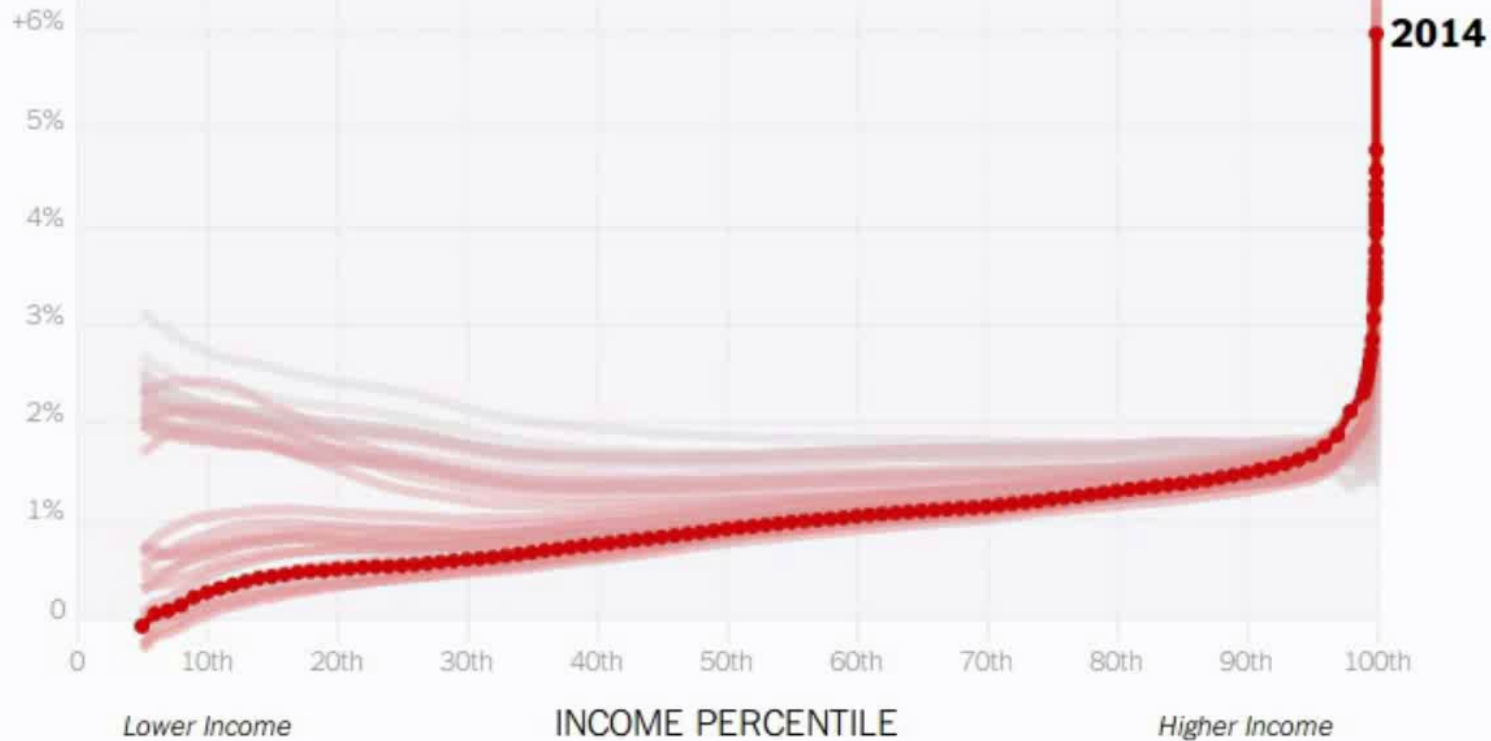
Changes at work related to health

- Globalization
 - Shift in location of production/industry distribution
 - Increase in economic migration
- Automation
 - Educational requirements
 - Unemployment/underemployment
- Blurring of Work and Non-work
- Demographics (Vulnerable populations)
 - Chronic disease
 - Immigration
 - Age
 - Gender
- Work Organization (?)

Growth in income inequality

INCOME GROWTH

Over previous 34 years



- Poor health associated with
 - Poverty
 - Inequality
 - Lowered expectations

NY Times. July 7, 2017

What is a “Vulnerable Population”?

- Vulnerability occurs in both work and societal contexts
- Typically defined simply as a demographic group
 - Race
 - Age
 - Gender
 - Sexuality minorities
 - Immigration status
 - Language, culture (generation), documentation, etc.
- These categories are Insufficient
 - Socially defined
 - Intersectionality
 - Social context

Vulnerability is about social capital, or **power**

- Social Capital:
 - The influence and authority individuals gain or lose through their relationships, how they respond to social expectations.
- In the workplace: Less power to:
 - Protect themselves (behavioral, interpersonal)
 - Affect change in working conditions (collective action)
 - Leave work for another job (mobility)
- Vulnerability should be defined in terms of
 - Social power relations
 - Context
- Examples
 - Women in male-dominated industries
 - Racial or ethnic minorities in dominant white workplaces
 - Low SES in high wealth disparities economy

What is meant by “Work Organization?”

From NIOSH,
The Changing Organization of Work
2002

Organization of Work

External Context

Economic, legal, political, technological, and demographic forces at the national/international level

- Economic developments (e.g., globalization of economy)
- Regulatory, trade, and economic policies (e.g., deregulation)
- Technological innovations (e.g., information/computer technology)
- Changing worker demographics and labor supply (e.g., aging populations)



Organizational Context

Management structures, supervisory practices, production methods, and human resource policies

- Organizational restructuring (e.g., downsizing)
- New quality and process management initiatives (e.g., high performance work systems)
- Alternative employment arrangements (e.g., contingent labor)
- Work/life/family programs and flexible work arrangements (e.g., telecommuting)
- Changes in benefits and compensation systems (e.g., gainsharing)



Work Context

Job Characteristics

- Climate and culture
- Task attributes: temporal aspects, complexity, autonomy, physical, and psychological demands, etc.
- Social-relational aspects of work
- Worker roles
- Career development

NIOSH New Taxonomy for Work Organization

HWD workgroup: proposed taxonomy

Characteristics	Categories					
	Employed			Self-employed		Volunteer
	Permanent	Temporary	Intern	No business	With business	
Job security						
Work schedule						
Compensation type						
Pay level and security						
Benefits						
Single versus dual or multiple employers						

From: NIOSH
TWH Webinar.
R. Pana Cryan,
6/28/17

Trends in non-standard employment

Standard Employment Relationship (SER) as a gold standard

- Permanent, ongoing
- Full-time

Table 5: Alternative work arrangements in the USA – percentage of all employed

	2005	2015
Independent contractors	6.9	8.4
On-call workers	1.7	2.6
Temporary help agency workers	0.9	1.6
Workers provided by contract firms	1.4	3.1
Total	10.7	15.8

Source: US Bureau of Labor Statistics (2005) and Katz and Krueger (2016)

Insecurity

Part-time

Usual weekly working hours	1996 %	2002 %	2008 %	2015 %
≤10 hours	3.4	3.8	4.0	4.6
11–15 hours	2.0	2.3	2.5	2.6
16–20 hours	5.4	5.8	6.1	6.4
21–25 hours	3.2	3.4	3.9	4.5
26–30 hours	3.8	4.3	5.0	5.8
31–35 hours	4.8	10.4	9.4	9.6
36+ hours	77.4	70.2	69.2	66.7
Total	100.0	100.0	100.0	100.0

Note: Workers aged 15–64 years

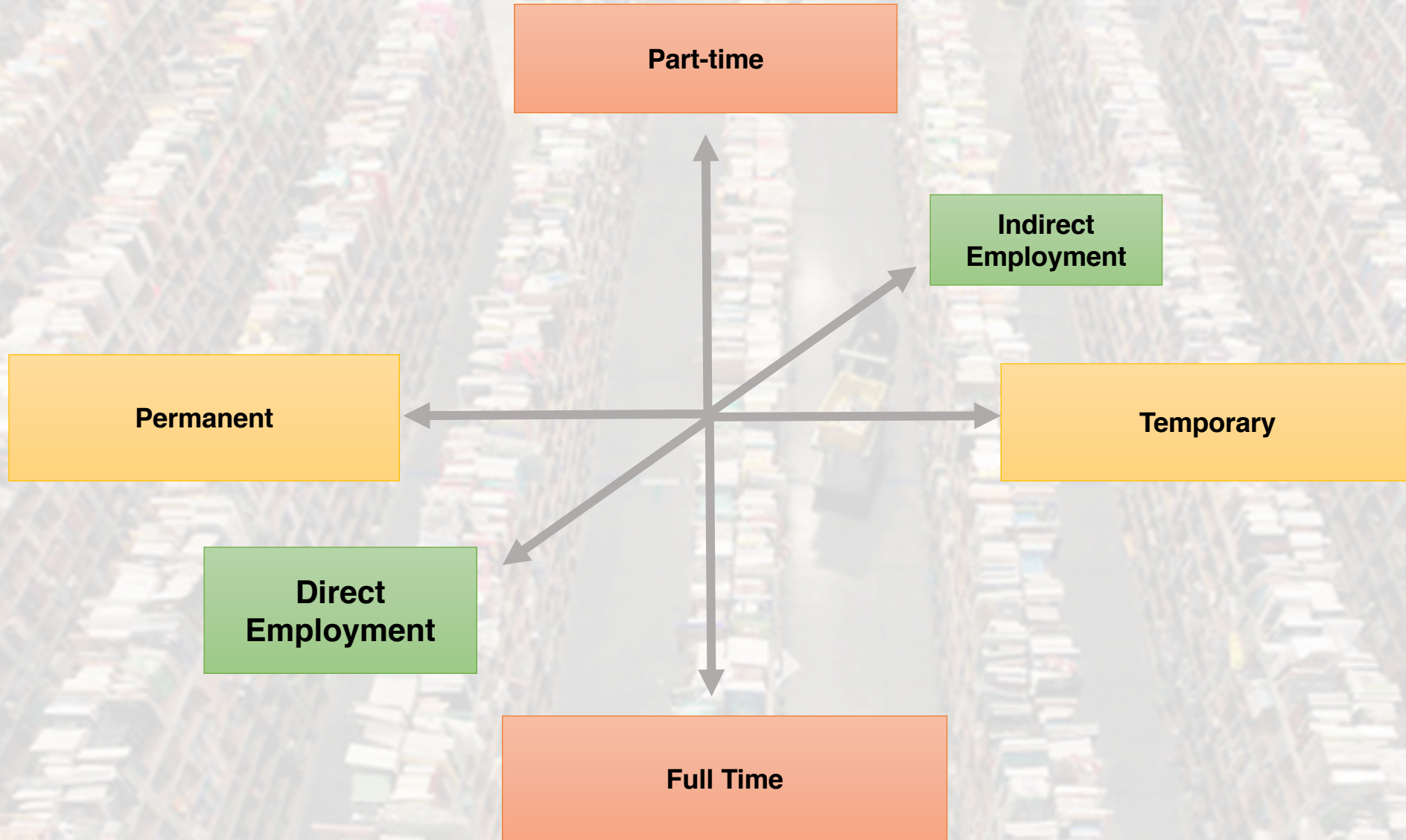
From: Eurofound (2017), *Aspects of non-standard employment in Europe*, Eurofound, Dublin.

Additional dimension of work organization:

Fissuring

- Fissuring is part of changing work organization
 - Doesn't appear in standard statistical reporting
 - Sub-contracts
 - Franchises
 - Supply chains
- Indirect relationship between employee and company with interest in the output
- Lead company maintains control
 - Contracts out non-core activities
 - Employer flexibility in labor costs
 - Lowers employer responsibility and hence, liability
 - Pressure for reduced pay and benefits
 - Lowers workplace cohesion and thus worker empowerment
- Fissuring induces higher insecurity, lower wages/benefits, stressors

Dimensions of Work Arrangement



“Employment Quality” Construct

- The structural and relational aspects of the employee-employer relationship
- Defined by:
 - Instability/Insecurity, contract type
 - Material rewards
 - Workers’ rights to social protection
 - Working time
 - Training and growth opportunities
 - Empowerment
 - Interpersonal power relations balance

Emerging consensus

- EQ is a multidimensional construct
- Characteristics are measured objectively
- Separate from intrinsic work characteristics, e.g.,
 - Work tasks
 - Physical exposures
 - Psychosocial exposures

Approaches to Measuring 'employment quality'

- Unidimensional (Work Arrangement)
 - E.g., Job security (contingency, limited term contracts, etc.)
- Multivariable Attributes (e.g., Scott-Marshall and Tompa, 2011)
 - E.g., security, work schedule, legal protection, income, status, physical hazards
- Multidimensional Scale (Precarity) (Vives, 2014)
 - E.g., Employment Precariousness Scale (EPRES)
- Job Typologies or clusters (EQ) (Van Aerden et al, 2014)
 - Latent Class Analysis

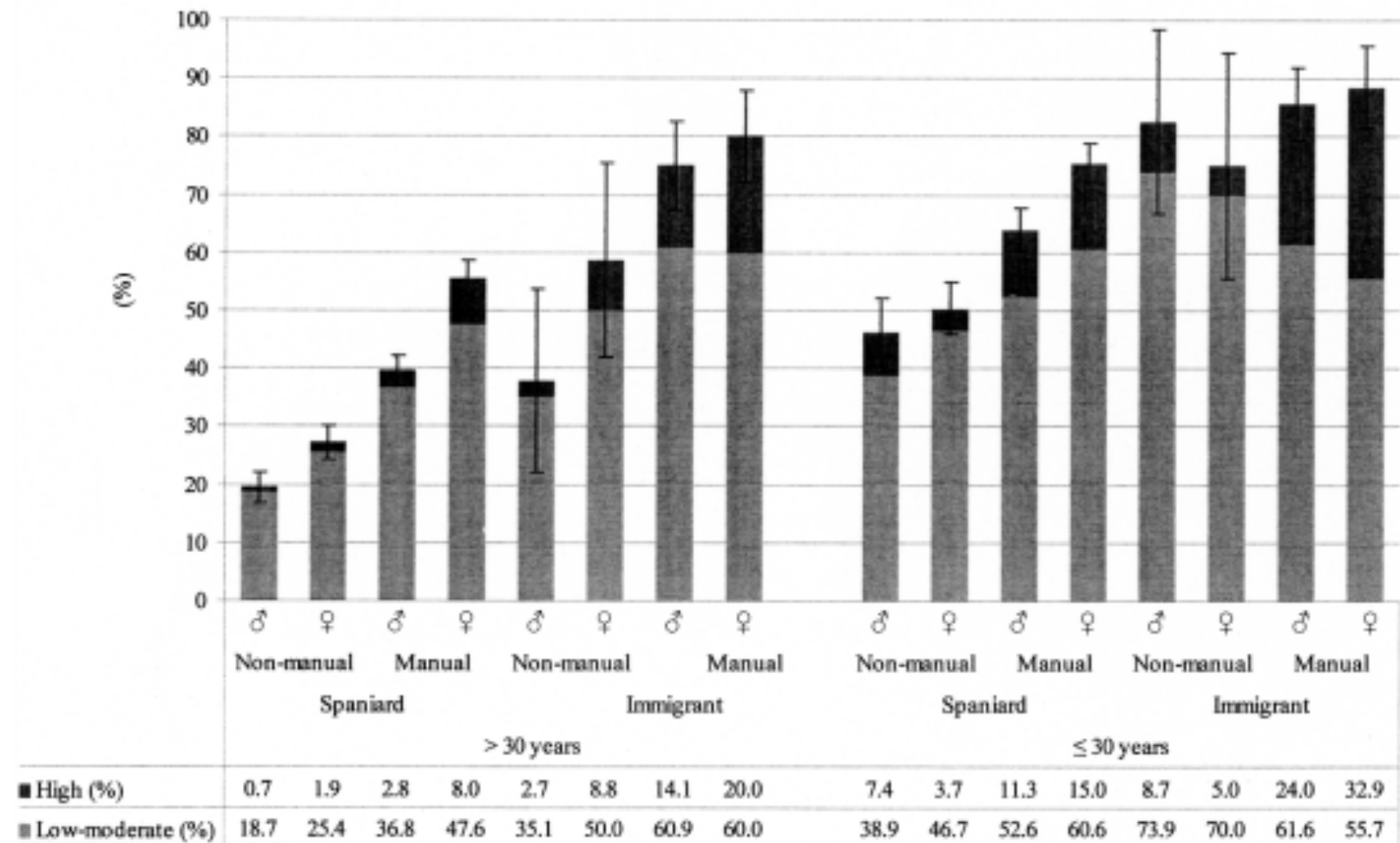


Figure 1. Prevalence of total employment precariousness (low-moderate and high) across 16 strata of waged and salaried workers, Spain, 2004–5. *Note:* Bars represent 95% confidence intervals for total employment precariousness. Manual = employment social classes I + II + III; non-manual = employment social classes IV + V.

Latent Cluster Analysis: Job Typologies

- Dimensional reduction technique
- Clusters based on case similarities (patterns of exposures) rather than variable correlations
- Results in Job Types
 - Each subject having a probability of belonging to each cluster
- van Aerden et al, applied Latent Cluster Analysis to a range of work components to generate employment quality typologies
 - EU Working Conditions Survey 2010

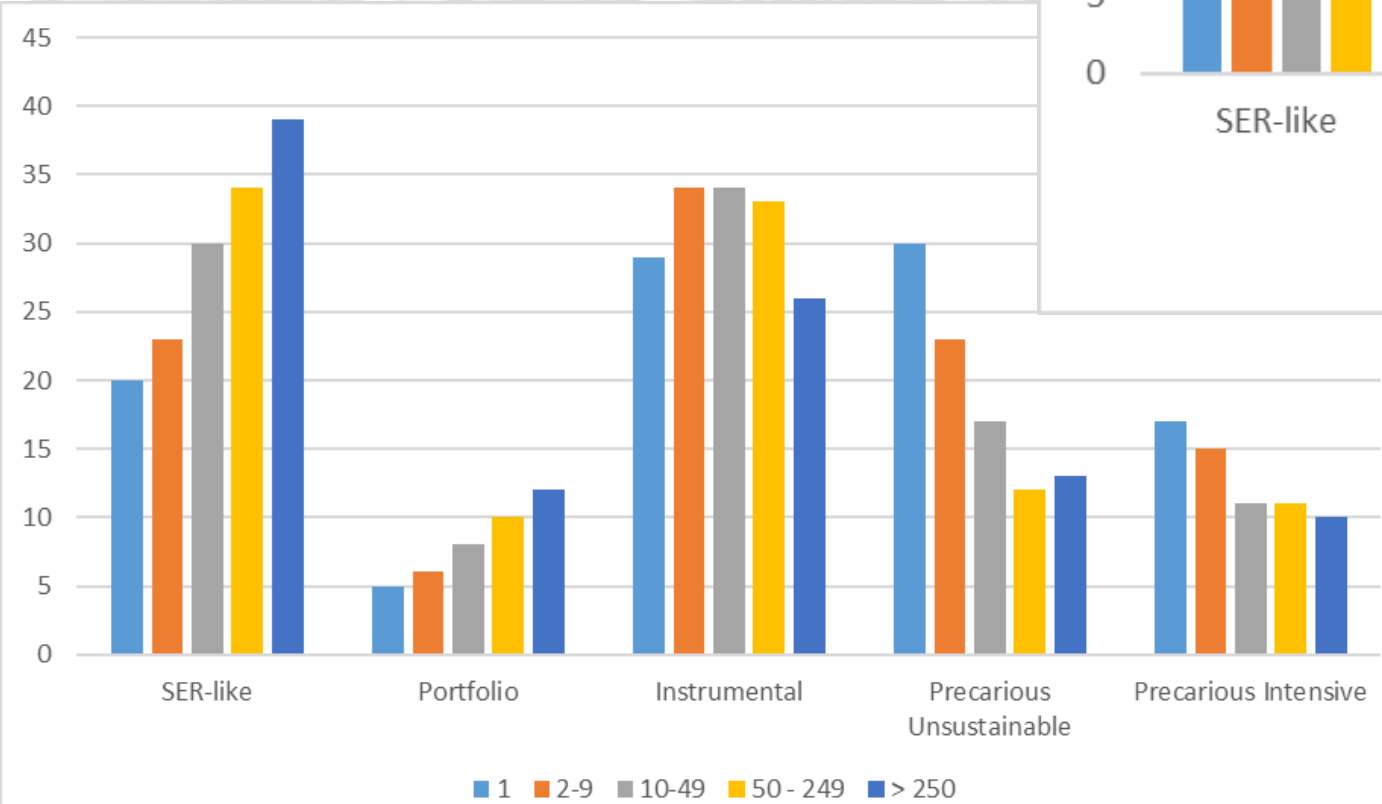
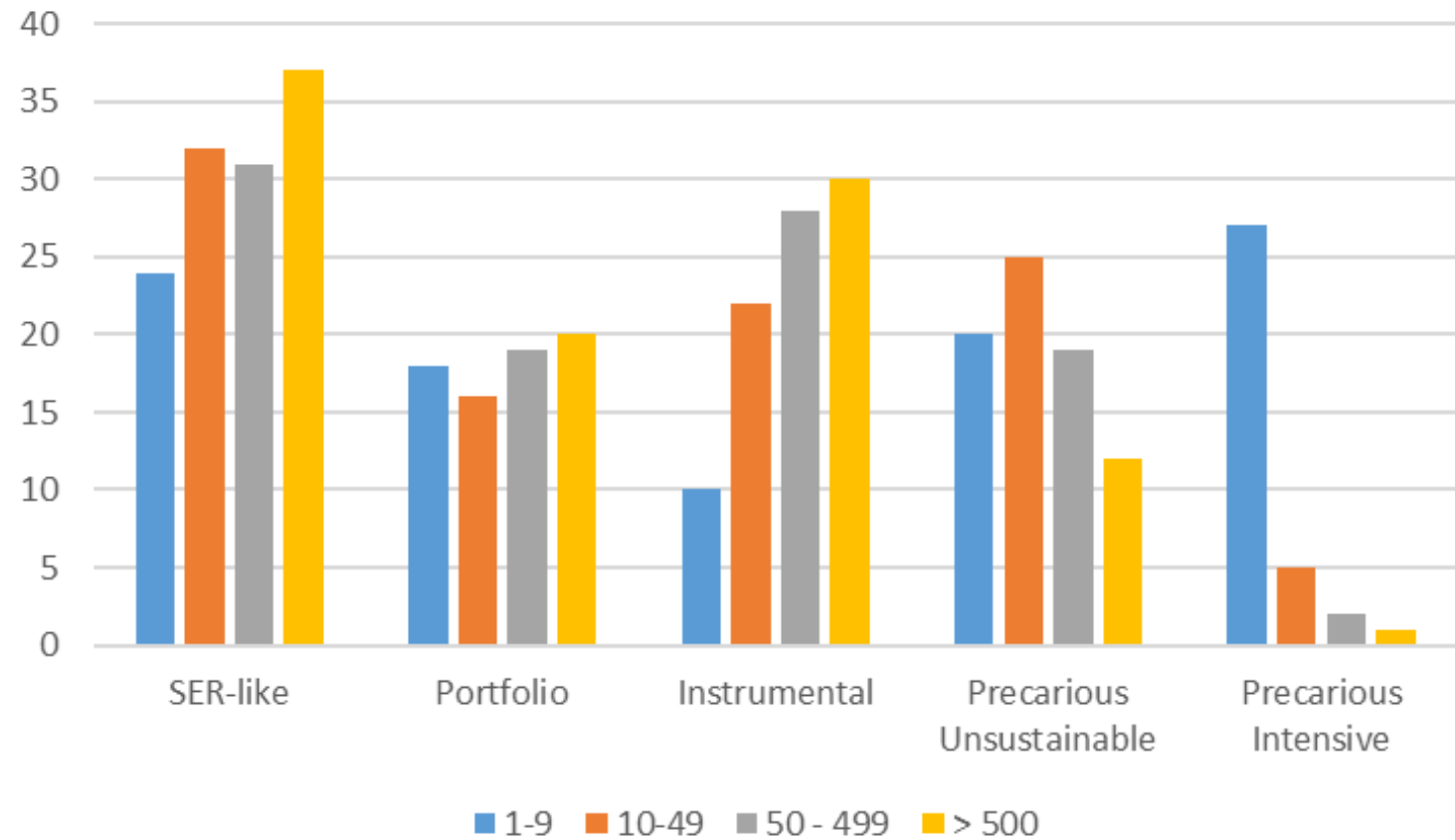
Preliminary exploration of Job Clusters in US

- General Social Survey (2002-2014)
- Constructs included are guided by theory and available questions
 - Work arrangement (Independent contractor, on-call, temp agency, work for contractor, regular permanent employee)
 - Income
 - Mandatory over-time
 - Hours per week
 - Shift schedule
 - Opportunities to develop
 - Support to do job
 - Union representation
 - Control over work time
 - Control over job
 - Subject to harassment

Similar Clusters in US and EU Databases

Label	Clustering Characteristics	Descriptive Characteristics
SER-like	Full time, Permanent, Good Wages, Benefits, Regular Hours, High Control	Older, salaried, management, low Hispanic representation
Portfolio	High income, long, unpredictable and uncompensated time, high control	Highly educated white collar men
Instrumental	Stable, financially sustainable, limited rewards, training and poor relations	Skilled blue collar, industrial
Precarious Intensive	Long and unpredictable hours, uncompensated OT	Younger, low education, agricultural sector
Precarious Unsustainable	Low income, involuntary part-time, low control	Women, low-skilled service sector

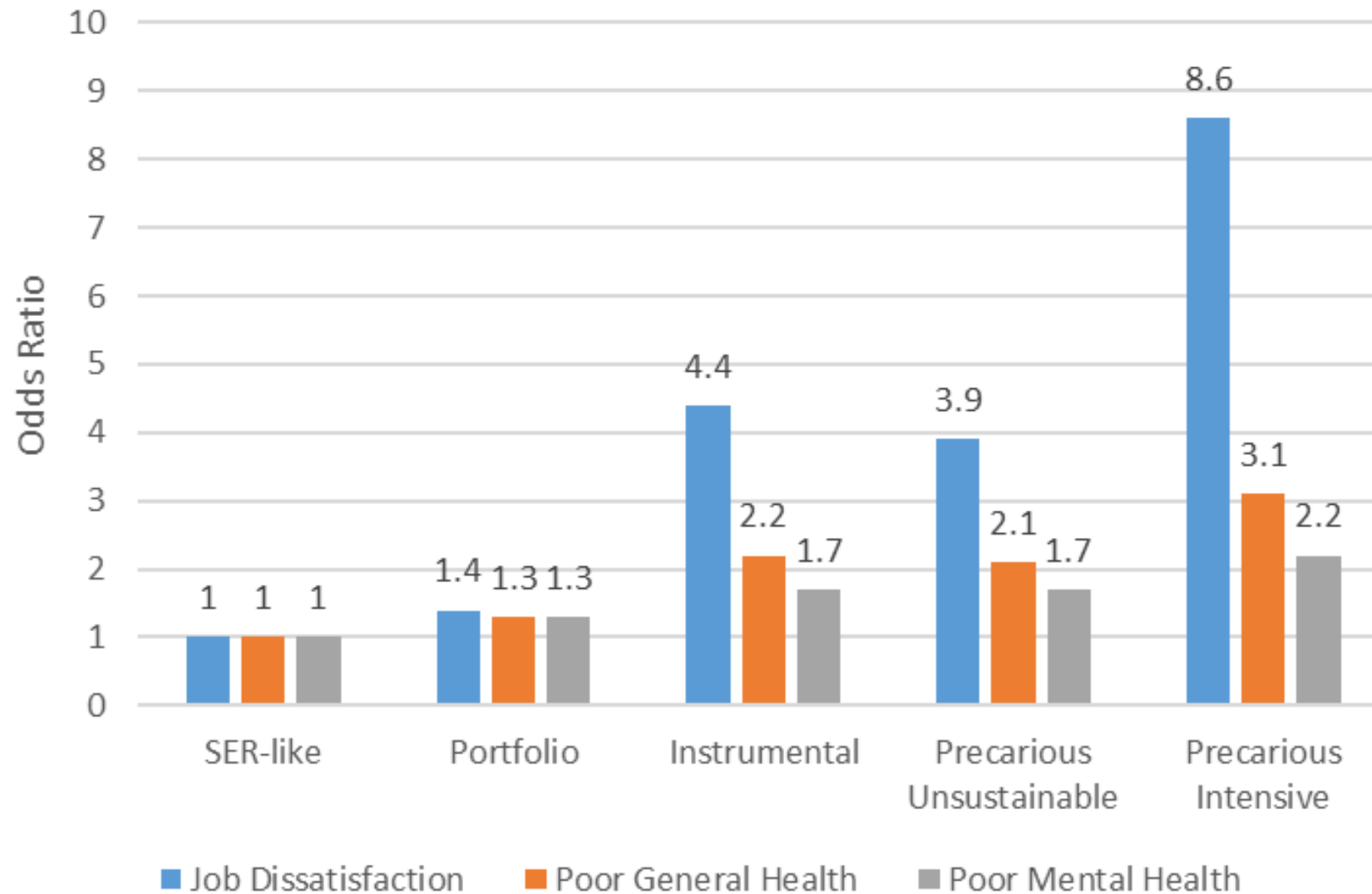
Percent of Job Types by Worksite Size



Preliminary Analysis, GSS

Van Aerden, 2014

OR for Job Quality Cluster with Health Outcomes (controlled for Age and Gender)



Building on previous work, define Employment Quality and Precarity

Constructs	Components
Work Arrangement	Job Security + Sufficiency of hours + Direct Employment (Fissuring)
Relational Characteristics	Salary + Benefits + Agency (individual or collective) + Information/Training + Advancement Opportunity+ Social relations
Employment Quality	Work Arrangement + Relational Characteristics
Intrinsic Characteristics	Work Tasks and Environment (Job tasks, traditional OHS exposures including work stress)
Precarity	Employment Quality * Vulnerability

EQ and Precarity are not immutable

- Employers can address EQ
 - Health supportive policies, programs, management
- Social policy can address health supportive employment standards
- Seattle is experimenting with such labor policies
 - Minimum wage
 - Paid sick and safe time
 - Secure scheduling

Amazon seeks to fill 50,000 warehouse jobs

July 26th, 2017 | Ángel González, Seattle Times

- **Intersectionality of work at Amazon**
- **Corporate workers**
 - High salaries benefits
 - Long hours
 - High work stress
- **Warehouse (“fulfillment center”) workers**
 - Good wages, benefits
 - High demands
 - Low control
- **Delivery services**
 - Fissured employment
 - High Intrinsic hazards
 - Lower wages, benefits
 - High demands
 - Low control

OR on SRH

(logistic regressions,
US, GSS, 2004-2010)

Model	Work Arrangement/ Employment Quality	OR (SE)	Pseudo r2
Work Arrangement	re: SER	1.0	0.002
	Ind. Contractor	0.9 (0.1)	
	On-call	1.6 (0.4)	
	Tem agency	1.4 (0.5)	
	Contractor	0.3 (0.3)	
	Full-time (re: PT)	0.9 (0.1)	
Employment Quality Clusters (Work Arrangement + Relational Char.)	EQ (re:SER)	1.0	0.016
	Portfolio	0.9 (0.1)	
	Instrumental	2.0 (0.2)	
	Precarious Intensive	1.3 (0.2)	
	Precarious Unsustainable	1.9 (0.2)	
Employment Quality + Intrinsic Characteristics (Occupation, Stress, Phys Exposures)	EQ (re:SER)	1.0	0.037
	Portfolio	0.8 (0.1)	
	Instrumental	1.3 (0.2)	
	Precarious Intensive	1.2 (0.2)	
	Precarious Unsustainable	1.5 (0.2)	
Precarity (IC + EQ * Vulnerability)	EQ (re:SER)	1.0	~0.039
	Portfolio	~0.8	
	Instrumental	~1.4	
	Precarious Intensive	~1.2	
	Precarious Unsustainable	~1.6	
	Interactions with:		
Gender		n.s.	
Race/Ethnicity		n.s.	
Immigrant Status		n.s.	