



**University of
New Hampshire**

Role of Environmental & Socio-Demographic Characteristics on Independent Living Function Among Community Living Adults with Disabilities

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Introduction

- Background
 - Enabling vs. disabling vs. environments
 - Cumulative effects of neighborhood characteristics on health & function
 - Current scholarship – focused on physical functioning or health among older adults, children and adolescents
- **Purpose:** To examine the role of natural, built environmental characteristics and socio-demographic characteristics in reporting an independent living difficulty among working age individuals living in the community



Data Source

- Data Source:
 - 3 year pooled data from the American Community Survey (ACS) 2008-2010
 - Matched census track data from
 - USDA Economic Research Service
 - City and County data book



Sample ACS Questions

- Hearing Difficulty: Is this person deaf or does he/she have serious difficulty hearing? [yes|no]
- Vision Difficulty: Is this person blind or does he/she have serious difficulty seeing even when wearing glasses? [yes|no]
- Cognitive Difficulty: Because of a physical, mental, or emotional condition, does this person have serious difficulty concentrating, remembering, or making decisions? [yes|no]
- Ambulatory Difficulty: Does this person have serious difficulty walking or climbing stairs?
- Self-Care Difficulty: Does this person have difficulty dressing or bathing? [yes|no]
- Independent Living Difficulty: Because of a physical, mental, or emotional condition, does this person have difficulty doing errands alone such as visiting a doctor's office or shopping? [yes|no]



Measures

- **Local neighborhood characteristics** (Source: USDA, US Agricultural Research, City and County databook)
 - Natural Environment (Jan temp, July humidity, Topography)
 - Transportation and safety (Pct. walk to work, Pct. Use of public transport, Crime per 1000 persons, Population density in 2000)
 - Socio-economic status (Poverty rate and Unemployment rate)
- **Individual level characteristics** (Source: ACS)
 - Age, Gender, Race, Education, Household income
- **Housing characteristics** (Source: ACS)
 - Age of structure, # of units in structure



Analytical Plan

- Descriptive statistics
 - Prevalence of Independent Living difficulty among the sample and sub-populations
- Logistic regression (adjusted for survey design factors)
 - PUMA fixed effects/clustering



Descriptive Statistics

N = 5339104	Total Sample	Male	Female	Age group: 18-34	Age group: 35-54	Age group: 56-64
Individuals reporting IL difficulty	192,319 (3.60%)	85,730 (3.34%)	106,589 (3.84%)	35,981 (2.14%)	86,316 (3.54%)	70,022 (5.75%)

N = 5339104	No disability	Any disability	Physical	Cognitive	Vision	Hearing
Individuals reporting IL difficulty	20,179 (0.42%)	172,140 (32.37%)	121,746 (41.60%)	105,578 (48.46%)	29,862 (32.84%)	21,327 (17.95%)

* All frequencies are un-weighted estimates



Results – Some Highlights

	Total sample	Men	Women	Ages 18-34	Ages 35-54	Ages 55-64
n	5339104	2566324	2772780	1680693	2441326	1217085
1.1 Natural Environment						
-- January temp					p<.01	p<.05
-- July humid						p<.05
-- Topography (1-21)	p<.01		p<.01			P<.001
1.2. Neighborhood and safety						
-- Pct. walk to work	p<.01	p<.01	p<.01	p<..05		p<.01
-- Pct. use public transit to work				p<.05		
-- Crime per 1000 persons					p<.05	p<.01
-- Population density in 2000						
1.3. Socio-economic status (SES)						
-- Unemployment rate	p<.01	p<.01	p<.01		p<.01	p<.01
-- Poverty rate	p<.01		p<.01	p<.01	p<.05	p<.01
2. Individual-level functional limitations						
- Hearing difficulty	p<.01	p<.01		p<.01		p<.01
- Vision difficulty	p<.01	p<.01	p<.01	p<.01	p<.01	p<.01
- Ambulatory difficulty	p<.01	p<.01	p<.01	p<.01	p<.01	p<.01
- Cognitive difficulty	p<.01	p<.01	p<.01	p<.01	p<.01	p<.01

	Total sample	Men	Women	Ages 18-34	Ages 35-54	Ages 55-64
3. Individual-level characteristics						
- Age	p<.01			p<.01		
- Age squared				p<.01		
- Female	p<.01			p<.01	p<.01	p<.01
- Race						
-- Black/African American only		p<.01	p<.01		p<.01	
-- Asian only			p<.05			
-- Other				p<.01		
- Hispanic	p<.01	p<.01	p<.01	p<.01	p<.01	p<.01
- Doesn't speak English well	p<.01	p<.01	p<.01	p<.01	p<.01	
- Married	p<.01	p<.01	p<.01	p<.01	p<.01	p<.01
- Education						
-- HS diploma or equivalent	p<.01	p<.01	p<.01	p<.01	p<.01	p<.01
-- Some college	p<.01	p<.01	p<.01	p<.01	p<.01	p<.01
-- Bachelors or more	p<.01	p<.01	p<.01	p<.01	p<.01	p<.01
- Total family income/1000	p<.01	p<.01	p<.01	p<.01	p<.01	p<.01

* Odds ratio available on request

Results – Some Highlights*

	Total Sample	Ambul. only	Vision only	Cognitive only	Hearing only	Amb.& Cog. only
Observations	5339104	170740	38941	107367	69203	62835
1. Neighborhood-level characteristics						
1.1. Natural environment						
-- January temp			p<.05			p<.01
-- July humid						
-- Topography	p<.01	p<.05				
1.2. Neighborhood and safety						
-- Pct. walk to work	p<.01	p<.05		p<.01		
-- Pct. use public transit to work		p<.01				
-- Crime per 1000 persons		p<.05		p<.01		
-- Population density in 2000						
1.3. Socio-economic status						
-- Unemployment rate	p<.01	p<.01				p<.01
-- Poverty rate	p<.01	p<.01	p<.05			p<.01

	Total Sample	Ambul. Only	Vision only	Cognitive only	Hearing Only	Amb & Cog only
3. Individual-level characteristics						
- Age	p<.05			p<.01		p<.01
- Age squared		p<.05		p<.01		p<.01
- Female	p<.01	p<.01			p<.01	p<.01
- Race						
-- Black/African American only		p<.01	p<.05			
-- Asian only				p<.01		
-- Other					p<.05	
- Hispanic	p<.01	p<.01	p<.05	p<.05		
- Doesn't speak English well	p<.01					
- Married	p<.01	p<.01	p<.05	p<.01	p<.01	
- Education						
-- HS diploma or equivalent	p<.01	p<.01		p<.01	p<.01	p<.01
-- Some college	p<.01	p<.01		p<.01	p<.01	p<.01
-- Bachelors or more	p<.01	p<.01	p<.01	p<.01	p<.01	p<.01
- Total family income/1000	p<.01	p<.01	p<.01	p<.01	p<.01	p<.01

* Odds ratio available on request

Contributions to the field

- Focus on working age population
- Large sample size, national level data
- Function as a outcome
- Inclusion of both natural and built environment
- Conceptual framework to clarify relationship between environment and function



Questions or Comments?

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