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Beyond Employment Rates: Self-Employment and Other Categories of Work Among People with Visual Impairments

Michele C. McDonnall, Ph.D., CRC
Director and Research Professor

Jennifer L. Cmar, Ph.D., COMS
Assistant Research Professor

Zhen S. McKnight, Ph.D.
Research Associate II

The National Research & Training Center on Blindness & Low Vision
Mississippi State University, Mississippi State, MS

Corresponding author:
Michele McDonnall
PO Box 6189
Mississippi State, MS 39762
662-325-2001
m.mcdonnall@msstate.edu

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The U.S. government categorizes all workers in the U.S. economy into an overarching type, or class, of worker that is generally independent of industry or occupation. This class of worker is based on the type of ownership of the organization that employs the worker and includes nine categories: (a) private for-profit; (b) private not-for-profit; (c) government workers, including local, state, federal, and active-duty U.S. Armed Forces or Commissioned Corps; (d) self-employed, including unincorporated and incorporated businesses; and (e) unpaid family workers (U.S. Census Bureau, 2021a). The majority of U.S. workers are employed with private organizations, but approximately 14% worked for the government in 2015 (U.S. Bureau of Labor Statistics, 2016), and 10.1% were self-employed (including 3.7% in incorporated and 6.3% in unincorporated businesses; Hipple & Hammond, 2016).

Class of worker is another piece of information about employment of people with visual impairments that has received little research attention. One older study touched on this issue with the investigation of employment of visually impaired people by the federal government (Kirchner & Packer, 1982). The authors espoused the theory that people with disabilities would be more likely to work for the government, given laws that supported governmental hiring. However, the data available at the time (1976) suggested that people with disabilities, including those with visual impairments, were not more or less likely to be employed in the public sector than people without disabilities (Kirchner & Packer, 1982).

Self-employment among people with disabilities has received a moderate amount of research attention (for example: Gouskova, 2020; Ipsen & Swicegood, 2017; Yamamoto et al., 2012), while only one study was identified that specifically focused on self-employment among people with visual impairments (Moore & Cavenaugh, 2003). This study evaluated self-

employment outcomes among vocational rehabilitation (VR) consumers with visual impairments. Moore and Cavenaugh documented that self-employment closures increased between 1994 and 1999, from 4.4% to 6.1%, respectively, of consumers closed with employment. Another study of self-employment closures among VR recipients found that consumers with visual impairments were much more likely to be closed as self-employed than consumers with other disabilities (6.6% compared to 2.1% for the entire sample; Ipsen & Swicegood, 2017).

While we have data regarding the percentage of VR consumers with visual impairments closed into employment who were self-employed, we do not have national statistics on self-employment for this population. Although not nationally representative, a few survey studies have provided data on self-employment among study participants with visual impairments. Based on a 1989 survey of visually impaired individuals, most of whom were current or former VR consumers, 25% of the employed participants were self-employed, while 30% worked for private employers and 44% worked in the public sector (Kirchner et al., 1997). A smaller percentage (13.4%) of visually impaired employed respondents to a 2013 survey reported being self-employed (Crudden et al., 2015). In a 2016 survey of individuals with visual impairments, 19.3% of employed participants were self-employed (Bell & Silverman, 2018). The authors noted that most self-employed respondents received Social Security disability benefits, suggesting that their earnings were limited.

The purpose of this study was to increase our knowledge about the class of worker for employed people with visual impairments, with a focus on the self-employed category. Given that self-employment appears to be a viable, and potentially popular, option for people with

visual impairments, we explored this class of worker in more depth. We investigated the following research questions:

1. What percentage of people with visual impairments are self-employed and in each class of worker? How does this compare to people without visual impairments?
2. Do the characteristics of people with visual impairments who are self-employed differ from those of people in other class of worker categories?
3. Do earnings of self-employed men and women with visual impairments differ from earnings of those in other class of worker categories?

Method

Data Source

This study involved secondary analysis of person-level data from the American Community Survey (ACS), which provides nationally representative data on various topics, including personal characteristics, education, housing, employment, and earnings. Each year, U.S. Census Bureau representatives collect data from approximately 3.5 million households and produce annual estimates by pooling the data across 12 months (U.S. Census Bureau, 2021b). Our data source was the 2019 ACS 1-year Public Use Microdata Sample, which contains de-identified records for about two-thirds of ACS respondents or 1% of the U.S. population. The analysis sample comprised 1,517,309 individuals (weighted n = 160,036,927) who met the following criteria: (a) 18 to 65 years old, (b) part of the civilian labor force, (c) worked within the past 12 months, (d) reported earnings, and (e) had data on class of worker. The sample included 19,372 people with visual impairments (weighted n = 2,023,723) and 1,497,937 people without visual impairments (weighted n = 158,013,204). We identified people with visual

impairments based on a “yes” response to the following question: “Is this person blind or does he/she have serious difficulty seeing even when wearing glasses?”

Variables

Class of worker was a categorical variable based on how respondents classified their most recent employment: (a) private for-profit; (b) private non-profit; (c) government, including local, state, and federal; and (d) self-employed (i.e., owner of an unincorporated or incorporated business, professional practice, or farm). To facilitate comparative analyses between self-employment and the other classes of worker, we used a dichotomous variable (self-employed, all other categories). *Annual earnings* consisted of total income (in U.S. dollars) earned over the past 12 months from wages, salary, commissions, bonuses, tips, and self-employment.

Seven variables represented respondent characteristics. Dichotomous variables were gender (male, female); Hispanic ethnicity (0 = *no*, 1 = *yes*); and Social Security Disability Insurance (SSDI), defined as receipt of Social Security income in the past 12 months (0 = *no*, 1 = *yes*). Categorical variables were race (White, Black, other races) and education level (less than high school, high school diploma or equivalent, some college or associate degree, bachelor’s degree or higher). Continuous variables included age (in years) and the number of additional disabilities (excluding visual impairment). ACS respondents had the opportunity to identify up to five additional disabilities: (a) deaf or serious difficulty hearing; (b) serious difficulty concentrating, remembering, or making decisions; (c) serious difficulty walking or climbing stairs; (d) difficulty dressing or bathing; and (e) difficulty doing errands alone such as visiting a doctor’s office or shopping.

Data Analysis

We computed descriptive statistics to investigate (a) the percentage of people with and without visual impairments in each class of worker category, (b) the characteristics of people with visual impairments by self-employment, and (c) annual earnings of people with visual impairments by self-employment and gender. We utilized Rao-Scott chi-square tests to examine associations between (a) self-employment (vs. all other categories) and visual impairment and (b) self-employment and characteristics of people with visual impairments (i.e., gender, ethnicity, race, education, and SSDI). To evaluate differences between self-employed workers and other classes of worker in age, number of additional disabilities, and annual earnings, we compared confidence intervals for these variables by self-employment. For all analyses, we used survey analysis procedures in SAS version 9.4 and applied sampling weights to generate nationally representative estimates with adjusted standard errors.

Results

Demographic information for the samples of people with and without visual impairments is presented in Table 1. The percentages of people with and without visual impairments in each class of worker category are provided in Table 2. People with visual impairments were more likely to be self-employed than people without visual impairments, Rao-Scott $\chi^2(1, N= 1{,}517{,}309) = 7.07$, $p = .008$.

People with visual impairments who were self-employed were different from those in other classes of worker in terms of gender, race, education, and SSDI receipt (see Table 3). Men were more likely to be self-employed (Rao-Scott $\chi^2(1, N= 19{,}372) = 53.39$, $p < .001$). Race was associated with the class of worker (Rao-Scott $\chi^2(2, N= 19{,}372) = 33.07$, $p < .001$), with people who were Black less likely to be self-employed. Education was associated with the class of worker (Rao-Scott $\chi^2(3, N= 19{,}372) = 19.78$, $p < .001$), with people with less than a high school

education or a bachelor's or advanced degree more likely to be self-employed. Self-employed people were also more likely to receive SSDI (Rao-Scott $\chi^2(1, N= 19{,}372) = 7.42$, $p = .007$) and be older (95% CI [47.2, 48.8]) than those in other classes of worker (95% CI [42.7, 43.3]).

Mean and median annual earnings for people with visual impairments by gender and class of worker are presented in Table 4. The average annual earnings of self-employed men were significantly higher than earnings of men in other classes of worker, but there was not a significant difference in average earnings for women. However, when evaluating median earnings, both men and women who were self-employed earned significantly less than men and women, respectively, employed in other classes of worker.

Discussion

We used ACS data to explore self-employment and other class of worker categories for people with visual impairments. This is the first study to utilize nationally-representative data to evaluate self-employment and class of worker among this population. The most common class of worker for people with visual impairments was private organizations, followed by government and self-employment. Compared to people without visual impairments, a slightly lower percentage of people with visual impairments worked for private for-profit organizations, and a slightly higher percentage were self-employed; however, these differences were small. Similar percentages of people with and without visual impairments worked for the government, which is somewhat surprising given the laws supporting government hiring of people with disabilities, although this finding does coincide with much older research (Kirchner & Packer, 1982).

People with visual impairments were significantly more likely to be self-employed than people without visual impairments (9.7% vs. 8.9%, respectively) when comparing self-employment to all other classes of worker. A substantially higher percentage of people with

visual impairments reported being self-employed in previous survey studies (Bell & Silverman, 2018; Kirchner et al., 1997). Our analyses revealed several significant differences in the characteristics of self-employed people with visual impairments compared to those in other classes of worker. Self-employed people were more likely to be male, be White, receive SSDI, have less than a high school education or have a bachelor's or advanced degree, and be older than people with visual impairments in the other class of worker categories. Findings from a general population study of the characteristics of self-employed people were similar, except for education – those with less than a high school diploma were not substantially more likely to be self-employed (Hipple & Hammond, 2016).

We also identified differences in earnings of people with visual impairments by class of worker and gender. When evaluating means, self-employed men with visual impairments had significantly *higher* annual earnings than men with visual impairments who worked for private or government employers, but average annual earnings of women with visual impairments did not differ significantly by class of worker. When evaluating medians, self-employed men and women with visual impairments had significantly *lower* annual earnings than those who worked for private or government employers. These findings suggest that a portion of self-employed men earn substantially more than most self-employed men, thus increasing their average annual earnings, while mid-point salaries for self-employed men (and women) are considerably lower than for those employed in other class of worker categories. Lower earnings for self-employed people with disabilities, compared to those in paid employment, have been documented in other studies (Gouskova, 2020).

These results expand the literature by providing national statistics on class of worker—including self-employment—for people with visual impairments. A strength of this study is the

use of the ACS dataset, which provides a large, representative sample of U.S. workers with and without visual impairments. However, several limitations of this dataset are important to recognize when interpreting our findings. First, respondents self-reported information about their disabilities and earnings. Second, the depth of information in the ACS dataset related to visual impairment and self-employment is limited. Because the ACS questionnaire only included a single, broad question about blindness and difficulty seeing, we could not differentiate between levels of vision loss in our analyses. It would be beneficial to use other datasets (e.g., the Rehabilitation Services Administration Case Service Report) to explore relationships between self-employment and other variables, such as work hours, type of self-employment, and level of visual impairment. Further research is also needed to understand the experiences of self-employed people with visual impairments and provide insight into barriers to and facilitators of self-employment for this population.

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Table 1

Demographic Information

Variable	With VI		Without VI	
	Frequency	%	Frequency	%
Gender				
Male	1,028,405	50.8	82,277,272	52.1
Female	995,318	49.2	75,735,932	47.9
Spanish, Hispanic, or Latino	412,856	20.4	28,673,726	18.1
Race				
White only	1,390,336	68.7	114,491,135	72.5
Black only	338,533	16.7	19,528,906	12.4
Other races	294,854	14.6	23,993,163	15.2
Education				
Less than HS	287,239	14.2	12,937,976	8.2
HS diploma or equivalent	595,130	29.4	39,487,251	25.0
Some college or associate degree	705,762	34.9	50,034,739	31.7
Bachelor's degree or higher	435,592	21.5	55,553,238	35.2
Age[a]	43.5	0.14	40.4	0.01

Note. VI = visual impairment. HS = high school. Data from American Community Survey (ACS) 2019 1-year Public Use Microdata Sample. All estimates are weighted to be nationally representative.

[a]Values represent means and standard errors.

Table 2

Percentage of People With and Without Visual Impairments (VI) Employed in Each Class of Worker Category

Variable	With VI		Without VI	
	Frequency	%	Frequency	%
Private for-profit	1,381,057	68.2	109,074,045	69.0
Private not-for-profit	166,881	8.2	12,778,251	8.1
Government	279,323	13.8	22,025,005	13.9
Self-employed	196,462	9.7	14,135,903	8.9
Unincorporated	128,401	6.3	8,921,411	5.6
Incorporated	68,061	3.4	5,214,492	3.3

Note. Data from American Community Survey (ACS) 2019 1-year Public Use Microdata Sample. All estimates are weighted to be nationally representative.

Table 3

Characteristics of People With Visual Impairments (VI) by Class of Worker

Characteristic	Self-employed		Other class of worker	
	Frequency	%	Frequency	%
Gender				
Male	120,040	61.1	908,365	49.7
Female	76,422	38.9	918,896	50.3
Spanish, Hispanic, or Latino	40,201	20.5	372,655	20.4
Race				
White only	145,225	73.9	1,245,111	68.1
Black only	20,697	10.5	317,836	17.4
Other races	30,540	15.5	264,314	14.5
Education				
Less than HS	35,523	18.1	251,716	13.8
HS diploma or equivalent	55,511	28.3	539,619	29.5
Some college or associate degree	61,311	31.2	644,451	35.3
Bachelor's degree or higher	44,117	22.5	391,475	21.4
SSDI receipt	12,492	6.4	87,675	4.8
	M	*SE*	*M*	*SE*
Age	48.0	0.40	43.0	0.15
Additional disabilities	0.8	0.04	0.7	0.01

Note. HS = high school. Data from American Community Survey (ACS) 2019 1-year Public Use Microdata Sample. All estimates are weighted to be nationally representative.

Table 4

Annual Earnings for Men and Women With Visual Impairments by Class of Worker

Annual earnings	Mean [95% CI]		Median [95% CI]	
	Men	Women	Men	Women
Self-employed	51,703 [47,249, 56,156]	31,027 [27,372, 34,681]	28,116 [26,887, 29,344]	17,553 [15,562, 19,544]
Other class of worker	44,834 [43,552, 46,116]	32,947 [31,932, 33,961]	32,225 [31,628, 32,821]	24,452 [23,688, 25,216]

Note. CI = confidence interval. Weighted estimates from ACS 2019 1-year Public Use Microdata Sample. All numbers are rounded to represent U.S. dollars ($).