

Three Essays on Post-Retirement Labor

By

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Chapter I

Three Essays – An Introduction

Post-retirement labor is comprised of two specific forms of labor, those who are in any form of bridge employment, and those who are unretired. Bridge employment is a transitional period of non-career work as one moves between being full-time employed in a career job to being fully retired. Unretirement is the return to employment after a period of retirement and includes transitions from partly retired to full-time employed and fully retired to either full or part time employment. The following three essays examine different relationships. First how the work environment influences post-retirement labor. Second, the subjective well-being of those in post-retirement labor is examined. Finally, the association between pre-retirement industry and occupation with post-retirement labor is examined.

Paper I, “Retired but Working Again: How Are Working Conditions Related to Post-Retirement Labor?” uses a probit model to examine the associations between specific working conditions with the decision to continue post-retirement work. This paper uses data from two modules of the American Life Panel (ALP). The first module is the second wave of American Working Conditions Survey (AWCS) conducted in 2018. The AWCS surveys respondents about their current working conditions. The module is the ALP’s 2019 Household Demographic Survey which is to determine the employment status of the respondents in the second wave of the AWCS.

Paper II, “The Association of Life Satisfaction with Post-Retirement Labor” uses an ordered probit model to examine the association of post-retirement labor with life

satisfaction, according to the “Satisfaction With Life Scale” (Diener, 1985). Using panel data from the leave-behind survey of the Health and Retirement Study (HRS), this paper examines the associations between reported life satisfaction and post-retirement labor from 2008-2018.

Paper III, “The Association of Post-Retirement Labor with Longest Held Job by Industry and Occupation” uses two probit models to examine how the industry and occupation of a person’s longest held job are related to the incidence of post-retirement labor. Using panel data from the 2010-2018 Health and Retirement Study, this study empirically finds several statistically significant relationships between post-retirement labor and longest held job. The paper explores the continuity theory of aging (Atchley, 1989) to evaluate whether post-retirement labor can be an effective way to preserve an older worker’s existing life structures. Results suggest that several high-status job occupation or industries, as well as jobs that could be considered to be rather emotionally involving or with a substantive degree of complexity, are associated positively with post-retirement labor. This paper also finds associations between several non-work social structures and the incidence of post retirement labor.

Chapter II

Retired but Working Again: How Are Working Conditions Related to Post-Retirement Labor?

Introduction

The American population is aging. The number of people aged 65 or older is projected to nearly double, increasing from 16 to 23 percent of the American population, by the year 2060 (Mather, 2019). When there is an increase in the number of people surviving to old age and a decline in the number of young people alive to support them, the growth in the consumption needs of society could outpace the growth in its production capacity (Maestas, 2010). The resulting disparity is an impending economic burden that could be alleviated by longer work lives (Maestas, 2018).

Working longer has become more normalized in recent years. This labor trend continues even after individuals have reached the traditional retirement age. A Pew Research Center analysis of employment data from the U.S. Bureau of Labor Statistics (BLS) shows that full or part-time employment for Americans aged 65 or older climbed steadily from 12.8 percent in 2000 to 18.6 percent in 2016 (DeSilver, 2016). However, this age group was affected by the COVID-19 pandemic and the resulting labor market exits. In 2020, about 15% workers over the age of 55 lost their jobs and in 2021 the number of those working in this age group were still 2 million below pre-pandemic levels (Gould, 2021). Nonetheless, the number of older workers is predicted to increase over the next decade. In 2021, the BLS reported that about 10.6 million people over the age of 65 were in the workforce. The BLS projects this number will reach 16 million in 2030 (BLS, 2021).

While many baby boomers were delaying their retirement, there was also a substantial increase in the number of individuals abandoning their retirement in favor of re-entering the workforce. A 2017 survey shows that almost 40 percent of workers over the age of 65 had, at some point, previously retired (Span, 2017). Maestas (2010) shows that nearly 50 percent of retirees follow a nontraditional retirement path that involves partial retirement, called bridge employment, and that 26 percent of retirees eventually come out of retirement to work, called unretirement.

Barslund (2019) suggests that corporate policies could be used to improve working conditions to extend the work lives of older workers. Identifying which working conditions are associated with prolonging post-retirement labor could lead to the development of human-resource policies that help ease the economic burden of an aging workforce. The goal of this study is to better understand the associations between specific working conditions and the decision to engage in post-retirement work.

Literature Review

Post-retirement employment may be a way to ease the economic burden of an aging society. An aging society's consumption needs tend to outpace its productive capacity as a result of increasing life expectancy and decreasing fertility rates (Maestas, 2010). Bridge employment expands work lives and thus delays the loss of societal productive capacity (Simaliukiene, 2014; Maestas, 2010). Unretirement brings back lost societal productive capacity by bringing workers out of their retirement (Maestas, 2010).

Research on the motivations for retirees to return to paid labor is infrequent but growing. Although there is research to show the decision to retire is influenced by the

availability of investment assets (Kim & Devaney, 2005), several empirical findings show that re-entering the labor-force after retirement is not associated significantly with financial shocks or financial need (Kalenkoski & McCarty, 2021; Platts et al., 2019; Maestas, 2010). Rather, a Canadian study finds that receiving pension income or holding other investments is associated with returning to work after retirement (Hiscott, 2013). However, the decision to re-enter the workforce is often multifaceted. Other research identifies four main motives retirees return to work, financial motives, social motives, personal fulfillment, and generative (passing down knowledge) motives (Mor-Barak, 1995; Armstrong-Stassen, Schlosser, & Zinni, 2012).

Under this infrastructure, non-pecuniary, reasons may be associated with post retirement labor force decisions. Research by Peng (2019) considers both social motives and personal fulfillment, they find an association between the bridge employment of nurses and work-related psychosocial factors, such as perceived meaningfulness of work. Atchley's (1989) continuity theory could also be applied in this capacity. Under continuity theory, older workers have a preference to continue existing life structures, such as a previous work identity, and post-retirement labor is a means to do so (Kim & Feldman, 2000).

A former retirees working conditions effect their social experiences and ability to find personal fulfillment at work. However, existing studies specifically examining working conditions and post-retirement labor are scarce. Yet research suggests that work-related factors that serve to delay the retirement of older workers would also influence the decision to enter paid work after retirement (Griffin & Hesketh, 2008). Armstrong-

Stassen and Staats (2012) examined what conditions could hypothetically motivate retirees to engage in paid labor. They find that social reasons, as well as human-resource practices that provide flexible working, are significant influences in the hypothetical decision to return to work, they also find differences by profession and gender (Armstrong-Stassen and Staats, 2012).

Other relevant research is focused on the effects of human-resource policies that prolong people's work lives. Maestas (2019) finds that meaningful work is a key reason people delay retirement. Armstrong-Stassen (2008) finds that those who are fully retired rate human-resource practices as a significantly more important influencing factor in the decision to engage in paid labor than do those who are already in some form of paid labor. Unfavorable working conditions and low job satisfaction increase the occurrence of retirement (Borella, 2009, D'Addio, 2010, Thorsen, 2012). Thorsen (2012) finds that lack of recognition and perceived discrimination by age are significantly associated with plans for early retirement.

As low job satisfaction is related to early retirement (Thorsen, 2012), other studies likewise show that higher job satisfaction is associated with a longer work life (Von Bonsdorff et al., 2010, Krause, 1997). Job satisfaction also is associated positively with bridge employment (Wang, 2008).

Using data from the American Working Conditions Survey, this paper uses information on the actual working conditions of former retirees to identify if there is any relationship between reported working conditions and continued post-retirement labor.

Data

This paper uses data from the American Working Conditions Survey (AWCS) and a follow-up survey on current Household Demographics (HHB2 2019). The AWCS is a module of RAND's American Life Panel (ALP), which is a nationally representative panel of more than 6,000 online respondents. The AWCS module is modeled after the more established European Working Conditions Survey (EWCS) and is focused on examining the conditions of the American workplace. For the individual working conditions of those in post-retirement labor, this paper uses data from the second wave of the AWCS. 2,504 individuals responded to the second wave of the AWCS and sample weights are provided to make the sample nationally representative. Wave 2, conducted in 2018, is used as the base wave for retirement status and working conditions. Data from the 2019 Household Demographic survey, using the same respondents as the AWCS, are used to determine if the individual is still working or has retired a year later. This paper will focus on those retirees who returned to work in 2018 and examines whether their working conditions have any relationship with their continued employment one year later.

To determine an individual's return to work from retirement data from the AWCS are used. If a former retiree reported having ever retired, even partially, and also reports currently being employed, they are considered to be in post-retirement labor as of 2018. Employment status is then reevaluated in 2019 in the current Household Demographics survey, which is a separate module of the American Life Panel (ALP) than the AWCS.

The dependent variable for this paper is a 0 or 1 dichotomous variable where the value is 1 if the respondent reported that they had once retired, were working in 2018, and were still working a year later in 2019. 68% of those former retirees who worked in 2018 were still working in 2019. The dependent variable is 0 if the respondent reported once retiring and was working in 2018 but had since re-retired in 2019.

The key explanatory variables utilized in the analysis are the reported working conditions of the individual returned to work in the 2018 AWCS. Table 2 shows descriptive statistics for the main explanatory variables. These include opportunities to fully use talents, regularity of work, freedom to set work schedule, working in free time, active work environment, workplace social support, abuse & harassment, as well as job training and advancement.

To measure workplace opportunity data are used from the AWCS. The AWCS asked the individual how often their work provides them with the opportunity to fully use their talents. For the analysis, dummy variables were created for each response level except the base level, "Never given such opportunities."

Regularity of work is a dummy variable where 0 indicates the individual does not work the same number of days each week and 1 indicates that the individual does work the same number of days each week.

The variable Flexible Work Schedule is a dummy variable where 0 indicates the work schedule is always set by the employer and 1 when it is not always set by the employer.

Worked During Free Time is a dummy variable that takes a value of 0 if the respondent had not worked at all in their free time last month or 1 if they had worked in their free time to meet workplace demands.

Active work environment measures the physical demands of the workplace. This is determined by asking the respondent if their job involves, “at least 25% of the time”, standing, tiring/painful positions, or lifting/moving heavy loads. The variable Active Work Environment is a dummy variable that is 1 if the individual reported that they do spend at least 25% of their work time standing, in tiring/painful positions, or lifting/moving heavy loads, and 0 if they reported they do not.

Workplace social support is determined by having very good friends at work, a supportive boss, good cooperation with colleagues, and fairly resolved workplace conflicts. These questions are asked as yes or no questions which are coded as 0 & 1 dummy variables with 1 indicating an affirmative response. If the respondent indicated they worked under any of these conditions, then the value of the variable for workplace social support would be a 1; otherwise, the value would be a 0.

Workplace abuse and harassment is defined as exposure to verbal abuse, threats, humiliating behavior, or harassment (including sexual harassment) while at work in the previous month. If the respondent reported working under any of these conditions, the value of the variable for workplace abuse or harassment would be 1; otherwise, the value would be 0.

The survey asks respondents, “Which of the following alternatives would best describe your skills in your own work?” Two dummy variables are created from this question. The first variable created is if the respondent feels they need additional job training to complete current duties, the value of the variable is 1 if he or she needs further training; otherwise, the value would be 0. The second variable created is if the respondent feels they are skilled enough to handle more duties, the value of the variable is 1 if he or she feels they are skilled enough to handle more duties; otherwise, the value would be 0.

The AWCS asks, “Over the past 12 months, have you undergone any of the following types of training to improve your skills?” A dummy variable is created to measure if the respondent has sought job training on his or her own initiative, either while at work or on his or her own free time.

Advancement is determined by the individual responding strongly agree or agree to the question “Job offers good prospects for career advancement.” If the individual agreed or strongly agreed, the value of this variable would be 1; the value would be 0 otherwise.

Household income is the individual’s self-reported level of income. The individual can choose from 16 separate brackets that start at less than \$5,000 and end at greater than \$150,000. As table 2 illustrates, the most frequent self-reported bracket for our analysis sample is between \$60,000 and \$74,999, totaling about 16 percent of all responses. Notably, many responses in the analysis sample reported a high household income. About 25 percent of the sample reported a household income of at least \$100,000. This total is the combined income from all household members over the last 12

months and includes: employment wages, net income from business, farm or rent, pension income, dividends, interest, social security payments and any other money income received.

Because the analysis sample observes the 2019 labor status of those former retirees who had returned to work by 2018, but the full AWCS sample is open to all workers, there are some demographic distinctions between the analysis sample and the full sample. Table 2.1 shows a few key differences in the demographics of the analysis that may make the sample unrepresentative of national demographics. The size of the analysis sample is small, with an n of only 155. However, existing literature in this narrow field of research suffers from similar data restrictions (Armstrong-Stassen & Staats, 2012). There are notable differences in gender, educational attainment, race, and age in the analysis sample. The analysis sample has more female respondents, has more white respondents, is more highly educated, and is significantly older, on average. Table 2.2 shows descriptive statistics for the analysis sample.

Model

This paper examines the decision to continue post-retirement labor with a probit model:

$$Y_i^* = \beta_0 + \beta_1 ft_i + \beta_2 reg_i + \beta_3 flx_i + \beta_4 wft_i + \beta_5 phy_i + \beta_6 ws_i + \beta_7 a_i + \beta_8 gpr_i + \beta_9 sko_i + \beta_{10} ntr_i + \beta_{11} osk_i + \beta_x X_i + \epsilon_i$$

$$Y_i = \begin{cases} 1 & Y_i^* > 0 \\ 0 & Y_i^* \leq 0 \end{cases}$$

where the latent variable, Y_i^* ; is the unobserved net benefit of continuing employment for former retiree i . The variable Y_i is the observed decision to continue post-retirement employment or not. The β s are parameters to be estimated. Marginal effects are calculated to show associations between the explanatory variables and the observed dependent variables. ϵ_i is the model's error term that follows the standard normal distribution.

Former retirees continue employment when doing so maximizes their utility. However, if the only employment that is available to a former retiree is employment with a low wage or disadvantageous working conditions, his or her utility would be maximized by discontinuing post-retirement labor.

Not all working conditions may be known before employment. Some working conditions, such as social support and advancement prospects or skill-development opportunities, may not be fully known beforehand. Additionally, a former retiree's perception of the utility to be gained prior to re-employment may be different from the actual utility received from such employment. Perhaps working conditions were not as expected or changed since the former retiree was hired.

The matrix ft is comprised of dummy variables capturing how often a former retiree reports that he or she is given the opportunity to fully use his or her talents. β_1 is hypothesized to be associated positively with the probability of continuing employment.

The variable reg is a dummy variable for whether the respondent works the same number of days each week or not. The β_2 is hypothesized to be associated positively with

the probability of continuing employment. Irregularity of a former retiree's work schedule is a disadvantageous working condition. Several studies have found that workers tend to have a preference for regularity or predictability in their work schedules (Schönfelder and Knauth 1993, Knauth and Hornberger 2003, Nabe-Nielsen et.al 2012). Another study shows that a consistent work schedule is associated with psycho-social well-being (Costa & Akerstedt, 2006). Regularity of work is expected to be associated positively with continued employment.

The variable *flx* is a dummy variable for whether the respondent has a flexible work schedule or not. Having some degree of control over scheduling work is a benefit. Being able to control one's own work schedule means being able to accommodate time for other life activities. One study finds that work flexibility is associated with, health, psycho-social well-being, and work satisfaction (Costa & Akerstedt, 2006). Having a flexible work schedule is hypothesized to make continued employment more attractive and, thus, to be associated positively with the probability of continuing employment.

The variable *wft* is a dummy variable for whether the respondent has worked during their free time to meet workplace demands in the last month or not. Spending free time to catch up on work would reduce the amount of time an individual could allocate to other life activities, which could affect utility (Sayer, 2005). Another study, using data from the European Working Conditions Survey, finds an association with having worked during free time and distressed mental health (Russo et al., 2019). However, despite the noted effects on utility and mental health, having worked during free time may indicate an individual preference for maintaining a work-identity. Likewise, flexible work

arrangements play an important role in continued employment for older workers (Costa & Akerstedt, 2006). Some former retirees may see working in their free time as a form of increased flexibility. Due to these competing effects, having worked during free time in the last month is hypothesized to have an ambiguous effect on the probability of continuing employment.

Spending at least 25% of work time in physical activity, standing, in tiring/painful positions, or lifting/moving heavy loads, is considered a disadvantageous working condition for former retirees. Previous empirical findings have found heavy physical work to be associated positively with labor market exit (Krasue, 1997). Other research shows that physically demanding work has particularly adverse consequences for workers over the age of 50 (Andersen et al., 2021). Thus, β_5 is hypothesized to be associated negatively with the probability of continuing employment.

Having support at work, the variable ws , integrates sociability into the workplace, expanding the value of work to be greater than the just the income generated from labor. ws is a dichotomous variable that takes the value of 1 if the respondent reported any of the following in his or her workplace and a 0 otherwise: working with very good friends, whether the respondent has good cooperation with colleagues at work or not, whether the respondent believes work conflicts are resolved fairly or not, and whether the respondent believes they have a boss that is supportive or not. β_6 , workplace social support, is hypothesized to be associated positively with the probability of continuing employment as social support provides additional utility from post-retirement labor.

Working in an environment that is abusive or harassing, including sexual harassment, should discourage continued employment. β_7 is hypothesized to be associated negatively with the probability of continuing employment. The variable a includes: whether the respondent has been threatened or verbally abused at work, been subjected to humiliating behavior, or been subject to harassment. All of these working conditions would create disutility and thus discourage continued post-retirement labor.

In traditional employment, if employees believe that their current job offers good prospects for career advancement, they are more inclined to stay employed at their job. In post-retirement labor, this effect may be dampened as former retirees are at a stage of winding down their career. However, β_8 is hypothesized to be associated positively with the probability of continuing employment.

The variable sko is a dummy variable for whether the respondent has sought job training or skill development by his or her own initiative. β_9 is hypothesized to be associated negatively with the probability of continuing employment as this could represent a lack of employer investment in the employee. Employees could feel that their employer is not providing enough opportunities to develop relevant skills on the job, so they have to seek these opportunities independently. Needing additional training to handle current duties, as measured by the variable ntr , is considered a disadvantageous working condition. β_{10} is hypothesized to be associated negatively with the probability of continuing employment. On the other extreme, those former retirees who feel that they are skilled enough to handle more duties than they currently do, as measured by the

variable *osk*, could feel that they have more to offer. β_{11} is hypothesized to be associated positively with the probability of continuing employment.

The matrix of variables X_{ij} is comprised of control variables for individual preferences, and income. These variables include self-reported health status, age, educational attainment, race, gender, and total household income.

Results

This section discusses the marginal effects of each explanatory variable on the dependent variable. The variables measuring workplace opportunities to use talents, regularity of work, flexibility to set work schedule, having worked during free time, social support at work, seeking skill development on own initiative, being skilled enough to handle more duties, age and total household income are all statistically significant determinants of continued post-retirement labor. Marginal effects are shown in table 2.3.

One measure for an ex-retiree being given the opportunity to fully use their existing talents is associated positively with former retirees continuing their employment. Compared to those who report never being given the opportunity to utilize their existing talents, most of the time being given such opportunities is associated positively with the probability of continuing employment by 0.30. This finding is consistent with theoretical expectations as well as other empirical findings (Armstrong-Stassen & Staats, 2008, Thorsen, 2012, Wang 2008). Existing research finds that human-resource policies which recognize the work of older workers are important factors in those workers' decision to continue working (Armstrong-Stassen & Staats, 2008, Thorsen, 2012). There is also an

abundance of psychological research finding that work-identity is an influencing factor in post-retirement labor decisions (Atchley, 1989; Kim and Feldman, 2000; Wang, 2008).

Working the same number of days each week is associated positively with the probability of continuing employment by 0.17. Similarly, having some degree over work schedule is associated positively with the probability of continuing employment by 0.23. Working during free time is associated positively with the probability of continuing employment by 0.27. Having the ability to work during free time could potentially be another form of work flexibility rather than an unexpected burden from work.

Working in an active (physical) environment is associated negatively with the probability of continuing employment by 0.30. This is consistent with our theoretical expectations and previous research showing an association with physical labor and an exit from labor (Krasue, 1997), as well as the association of adverse health effect for older workers (Andersen et al., 2021).

Social support within the workplace is associated positively with the probability of continuing employment by 0.25. However, working in an abusive work environment surprisingly is not a statistically significant factor.

The findings for social support at work and flexible working conditions are supported by previous empirical findings. Armstrong-Stassen & Staats (2012) found social support at work and work flexibility to be leading motives for men and women. While other research shows that work flexibility is associated with, health, psycho-social well-being, and work satisfaction (Costa & Akerstedt, 2006).

Good prospects for career advancement and reporting seeking job training or skill development on their own initiative are not statistically significant factors. Being skilled enough to handle more duties than the employee is currently assigned is associated positively with the probability of continuing employment by 0.13.

Age is associated negatively with the probability of continuing employment by 0.01. Although small, the association of age with continued post-retirement labor is consistent with theoretical expectations. All other demographic variables controlled for are not statistically significant.

A few household income controls were found to have a statistically significant relationship with continuing post-retirement labor. Compared to those ex-retirees having \$150,000 or more in total household income, having total household income between \$60,000 and \$74,999 is associated negatively with continued employment by 0.23. Likewise, compared to those ex-retirees having \$150,000 or more in total household income, having total household income between \$12,500 and \$14,999 is associated negatively with continued employment by 0.57. These results indicate that ex-retirees may be more inclined to continue their employment if the job pays well enough. A notable limitation is the use of household income, rather than direct employment wages. Data on individual wages were not provided in this dataset. In addition, this relationship is not found for every level of income. Another limitation is the relatively small sample size, parsing the sample into 16 income brackets poses further statistical limitations.

Conclusion

The aim of this study is to better understand the association between the working conditions of former retirees and their continued employment. This study observes former retirees who responded both to the American Life Panel's (ALP) 2018 American Working Conditions Survey (AWCS) and a follow-up demographic survey a year later. This relationship is analyzed via a probit regression model. Associations are found between working conditions and prolonged post-retirement labor of the ex-retired. The variables measuring workplace opportunities to use talents, regularity of work, flexibility to set work schedule, having worked during free time, social support at work, being skilled enough to handle more duties, age, and certain levels of total household income are all statistically significant determinants of continued post-retirement labor.

These findings suggest that working conditions and their environment are relevant factors to the former retirees' decisions to remain employed post-retirement or not. Human-resource policies that enable former retirees to fully use their existing talents, provide them with adequate responsibilities suitable to their station, and make modern skill development and job training available for former retirees could help to prolong post-retirement labor and dampen the economic burden of an aging society.

References

- Andersen, Pedersen, J., Sundstrup, E., Thorsen, S. V., & Rugulies, R. (2021). High physical work demands have worse consequences for older workers: prospective study of long-term sickness absence among 69,117 employees. *Occupational and Environmental Medicine* (London, England). <https://doi.org/10.1136/oemed-2020-107281>
- Atchley, R. (1989). A continuity theory of aging. *Gerontologist*, 29, 183–190.
- Armstrong-Stassen, M. (2008). Organisational practices and the post-retirement employment experience of older workers. *Human Resource Management Journal*, 18, 36-53.
- Armstrong-Stassen, M., Schlosser, F., & Zinni, D. (2012). Seeking resources: predicting retirees' return to their workplace. *Journal of Managerial Psychology*, 27(6), 615-635. <http://dx.doi.org.lib-e2.lib.ttu.edu/10.1108/02683941211252455>
- Armstrong-Stassen, M., & Staats, S. (2012). Gender Differences in How Retirees Perceive Factors Influencing Unretirement. *The International Journal of Aging and Human Development*, 75, 45-69.
- Borella, M., & Moscarola, F. (2010). Microsimulation of pension reforms: Behavioural versus nonbehavioural approach. *Journal of Pension Economics & Finance*, 9(4), 583-607.
- D'Addio, Anna Cristina, Keese, Mark, & Whitehouse, Edward. (2010). Population ageing and labour markets.(Report). *Oxford Review of Economic Policy*, 26(4), 613-635.
- DeSilver, D. (2016, June 20). More older Americans are working than in recent years. Retrieved from <https://www.pewresearch.org/fact-tank/2016/06/20/more-older-americans-are-working-and-working-more-than-they-used-to/>.
- Barslund, M., Bauknecht, J., & Cebulla, A. (2019). Working conditions and retirement: How important are HR policies in prolonging working life? **. *Management Revue*, 30(1), 120-141.
- BLS. (2021) “Civilian Labor Force Participation Rate by Age, Sex, Ethnicity, and Race.” U.S. Bureau of Labor Statistics, *U.S. Bureau of Labor Statistics*, 8 Sept. 2021, <https://www.bls.gov/emp/tables/civilian-labor-force-participation-rate.htm>.
- Costa, G., Sartori, S., & Akerstedt, T. (2006). Influence of flexibility and variability of working hours on health and well-being. *Chronobiology international*, 23(6), 1125–1137. <https://doi.org/10.1080/07420520601087491>

- Gould, E. (2021, April 29). Older workers were devastated by the pandemic downturn and continue to face adverse employment outcomes: EPI testimony for the Senate Special Committee on Aging. *Economic Policy Institute*.
<https://www.epi.org/publication/older-workers-were-devastated-by-the-pandemic-downturn-and-continue-to-face-adverse-employment-outcomes-epi-testimony-for-the-senate-special-committee-on-aging/>
- Griffin, & Hesketh, B. (2008). Post-retirement work: The individual determinants of paid and volunteer work. *Journal of Occupational and Organizational Psychology*, 81(1), 101–121. <https://doi.org/10.1348/096317907X202518>
- Hiscott, R. D. (2013). Determinants of post-retirement employment: Canadian evidence. *The Canadian Journal of Career Development/Revue canadienne de développement de carrière*, 12, 59-71.
- Kalenkoski, & McCarty, S. H. (2021). In or Out or Somewhere in Between? The Determinants of Gradual Retirement. *Journal of Family and Economic Issues*, 42(2), 387–394. <https://doi.org/10.1007/s10834-020-09734-4>
- Kim, H., & DeVaney, S. A. (2005). The selection of partial or full retirement by older workers. *Journal of Family and Economic Issues*, 26(3), 371-394.
- Kim, S., & Feldman, D. C. (2000). Working in Retirement: The Antecedents of Bridge Employment and Its Consequences for Quality of Life in Retirement. *Academy of Management journal*, 43, 1195–1210.
- Knauth, P. and Hornberger, S. 2003. Preventive and compensatory measures for shift workers. *Occupational Medicine (Lond)*, 53(2): 109–116.
- Krause, N., Lynch, J., Kaplam, G.A., Cohen, R.D., Goldberg, D.E., & Salonen, J.T. (1997). Predictors of disability retirement. *Scandinavian Journal of Work, Environment Health*, 23(6), 403-413.
- Maestas, Nicole. "Back to Work: Expectations and Realizations of Work after Retirement." *Journal of Human Resources* 45.3 (2010): 718-748. Web.
- Maestas, N., & Zissimopoulos, J. (2010). How Longer Work Lives Ease the Crunch of Population Aging. *The Journal of Economic Perspectives*, 24(1), 139-160.
- Maestas, Nicole, Kathleen J. Mullen, David Powell, Till von Wachter, and Jeffrey B. Wenger, The American Working Conditions Survey Finds That Nearly Half of Retirees Would Return to Work. Santa Monica, CA: *RAND Corporation*, 2019. https://www.rand.org/pubs/research_briefs/RB9973-1.html.

- Maestas, N., & Hurd, M. D. (2018, March 6). Why Unretirement Is Working for Older Americans. Retrieved from <https://www.rand.org/blog/rand-review/2018/03/why-unretirement-is-working-for-older-americans.html>.
- Mather, Mark, et al. "Fact Sheet: Aging in the United States." *Population Reference Bureau*, 15 July 2019, www.prb.org/aging-unitedstates-fact-sheet/.
- Mor-Barak M. E. (1995). The meaning of work for older adults seeking employment: the generativity factor. *International journal of aging & human development*, 41(4), 325–344.
- Nabe-Nielsen, Garde, A. H., Aust, B., & Diderichsen, F. (2012). Increasing work-time influence: consequences for flexibility, variability, regularity and predictability. *Ergonomics*, 55(4), 440–449. <https://doi.org/10.1080/00140139.2011.646321>
- Peng, Yisheng, Xu, Xiaohong, Jex, Steve M, & Chen, Yiwei. (2019). The Roles of Job-Related Psychosocial Factors and Work Meaningfulness in Promoting Nurses' Bridge Employment Intentions. *Journal of Career Development*, 89484531882466.
- Platts, L., Corna, L., Worts, D., Mcdonough, P., Price, D., & Glaser, K. (2019). Returns to work after retirement: a prospective study of unretirement in the United Kingdom. *Ageing and Society*, 39, 439-464. Retrieved from <http://search.proquest.com/docview/2171652136/>
- Russo, Lucifora, C., Pucciarelli, F., & Piccoli, B. (2019). Work hazards and workers' mental health: an investigation based on the fifth European Working Conditions Survey. *Medicina Del Lavoro*, 110(2), 115–129. <https://doi.org/10.23749/mdl.v110i2.7640>
- Sayer, L. C. (2005). Gender, time and inequality: trends in women's and men's paid work, unpaid work and free time. *Social Forces*, 84(1), 285+. <https://link.gale.com/apps/doc/A137453793/OVIC?u=txshracd2579&sid=bookmark-OVIC&xid=42e96e7c>
- Schönfelder, E. and Knauth, P. 1993. A procedure to assess shift systems based on ergonomic criteria. *Ergonomics*, 36(1–3): 65–76.
- Smaliukiene, R., & Tvaronavičienė, M. (2014). Bridge Employment: An Opportunity for Aging Society. *Procedia - Social and Behavioral Sciences*, 156, 388-391.
- Span, P. (2018, March 30). Many Americans Try Retirement, Then Change Their Minds. Retrieved from <https://www.nytimes.com/2018/03/30/health/unretirement-work-seniors.html>.

- Thorsen, S., Rugulies, R., Løngaard, K., Borg, V., Thielen, K., & Bjorner, J. (2012). The association between psychosocial work environment, attitudes towards older workers (ageism) and planned retirement. *International Archives of Occupational and Environmental Health*, 85(4), 437-445
- Von Bonsdorff, M.E., Huuhtanen, P., Tuomi, K., & Seitsamo, J. (2010). Predictors of employees' early retirement intentions: an 11-year longitudinal study. *Occupational Medicine*, 60, 94-100.
- Wang, M., Zhan, Y., Liu, S., & Shultz, K.S. (2008). Antecedents of Bridge Employment: A Longitudinal Investigation. *Journal of Applied Psychology*, 93(4), 818-930.

Table 2.1: Summary Statistics for 2018 American Working Conditions Survey and Analysis Samples

<i>Variable</i>	2018 AWCS Sample		Analysis Sample	
	<i>Mean</i>	<i>SE</i>		
Female	0.4661	0.0181	0.5135	0.0521***
Bad Health	0.1118	0.0122	.01001	0.0301
White	0.7638	0.0160	0.8143	0.0395***
Four-Year Degree ¹	0.3540	0.0155	0.4296	0.0484***
Age	42.1701	0.6139	63.2707	0.5795***

Note: N of 2,504 for AWCS sample & 168 for Analysis Sample ¹Answers were originally submitted by degree of highest completion, graduate and professional degrees are captured. ²Samples are weighted using weights provided by the AWCS. *** denotes statistical difference from the AWCS sample mean at the 1% level of significance.

Table 2.2: Descriptive Statistics of Explanatory Variables - Analysis Samples

<i>Variable</i>	<i>Mean</i>	<i>SE</i>
Given Opportunities to Fully Use Talents		
<i>Never (Base)</i>	0.0541	0.0197
<i>Rarely</i>	0.1436	0.0488
<i>Sometimes</i>	0.2337	0.0443
<i>Most of the Time</i>	0.3549	0.0482
<i>Always</i>	0.2134	0.0391
Worked Same Number of Days a Week	0.5826	0.0501
Flexible Work Schedule	0.7526	0.0456
Worked During Free Time (past month)	0.4334	0.0501
Active Work Environment	0.9177	0.0322
Workplace Social Support	0.7806	0.0363
Abusive Work Environment	0.0741	0.0193
Good Prospects for Career Advancement	0.4139	0.0532
Job Training/Skill Development on Own Initiative	0.6216	0.0521
Skilled Enough to Handle More Duties	0.2757	0.0441
Additional Training Needed for Current Duties	0.0245	0.0144
Household Income		
Greater than \$150,000	0.1285	0.0277
\$100,000-\$149,999	0.1214	0.0295
\$75,000-\$99,999	0.1371	0.0355
\$60,000-\$74,999	0.1673	0.0450
\$50,000-\$59,999	0.1267	0.0392

Table 2.2. Continued

\$40,000-\$49,999	0.0371	0.0119
\$35,000-\$39,999	0.0536	0.2264
\$30,000-\$34,999	0.0468	0.0259
\$25,000-\$29,999	0.0717	0.0303
\$20,000-\$24,999	0.3125	0.0170
\$15,000-\$19,999	0.0466	0.0233
\$12,500-\$14,999	0.0142	0.0084
\$10,000-\$12,499	0.0115	0.0088
\$7,500-\$9,999	0.0015	0.0015
\$5,000-\$7,499	0	N/A
Less Than \$5,000	0	N/A

Note: Sample is weighted using weights provided by the American Working Conditions Survey

Table 2.3: Marginal Effects of Working Conditions on Continuing Post-Retirement Labor

<i>Variable</i>	<i>Marginal Effect</i>	<i>SE</i>
Given Opportunities to Fully Use Talents		
Never (Base)		
Rarely	0.2633	0.1718
Sometimes	0.2043	0.1640
Most of the Time	0.3000*	0.1645
Always	0.1102	0.1640
Regularity, Flexibility, & Physicality		
Worked Same Number of Days a Week	0.1749***	0.0629
Flexible Work Schedule	0.2351***	0.0899
Worked During Free Time	0.2778***	0.0704
Active Work Environment	-0.3026**	0.1307
Social Work Environment		
Social Support at Work	0.2509***	0.0809
Abusive Work Environment	-0.1726	0.1247
Advancement & Training		
Good Prospects for Career Advancement	0.0349	0.0704
Skilled Enough to Handle More Duties	0.1388*	0.0791
Job Training/Skill Development on Own Initiative	-0.0823	0.0681
Demographic & Financial Controls		

Table 2.3. Continued

Bad Health	-0.0715	0.1074
Female	-0.0692	0.0685
White	-0.0516	0.0890
Four-Year Degree	0.0113	0.0739
Age	-0.013**	0.0055
Household Income		
Greater than \$150,000 (Base)		
\$100,000-\$149,999	-0.1406	0.1327
\$75,000-\$99,999	-0.1533	0.1169
\$60,000-\$74,999	-0.2300*	0.1287
\$50,000-\$59,999	0.0151	0.1442
\$40,000-\$49,999	-0.1502	0.1602
\$35,000-\$39,999	-0.1026	0.1575
\$30,000-\$34,999	-0.0290	0.1616
\$25,000-\$29,999	0.1499	0.1938
\$20,000-\$24,999	0.2728	0.2335
\$15,000-\$19,999	0.0529	0.1836
\$12,500-\$14,999	-0.5713***	0.1753

Note: 155 observations from 2018 American Working Conditions Survey & 2019 Household Demographic Survey, weighted to the 2018 American Working Conditions Survey, “Additional Training Needed for Current Duties”, and reported income levels below \$12,500 were not able to be estimated due to sample size, *** denotes statistical significance at the 1% level, ** denotes statistical significance at the 5% level, * denotes statistical significance at the 10% level.

Chapter III

The Association of Life Satisfaction with Post-Retirement Labor

Introduction

The American workforce is currently undergoing a massive demographical transition. According to a 2021 report from the U.S. Bureau of Labor Statistics, the labor force participation is projected to shrink by 7.5 percent, while the labor force participation for those 75 or older is projected to increase by 96.5 percent (BLS, 2021). However, the COVID-19 pandemic has played a role in dampening the growth of labor force participation of older workers. In the third quarter of 2021 50.3 percent of individuals 55 or older consider themselves retired compared to 49.6 percent in the third quarter of 2020 and 48.1 percent in the third quarter of 2019 (Fry, 2021). Whether this drop in labor force participation for the 55 and older age group continues as the COVID-19 pandemic subsides is still in question. However, given that the number of Americans aged 65 and older is projected to increase from 56.1 million in 2020 to 94.7 million in 2060, studying the effects of post-retirement labor on older workers could prove valuable to increase labor for participation for this demographic (Vespa et al., 2020).

The goal of this paper is to examine the relationship between life satisfaction and post-retirement labor, both bridge employment and unretirement. Using data for 2008-2018 subjective well-being reported in the Health and Retirement Study, this paper estimates an ordered probit model to examine the association between post-retirement labor and life satisfaction, as measured in the “Satisfaction With Life Scale” (Diener et al., 1985).

Literature Review

Post-retirement labor is considered to be any form of paid employment after a period of full or partial retirement. This definition includes “bridge employment” (Feldman, 1994), which is transitioning from a period of full-time employment to a period of part-time employment, as well as “unretirement” (Maestas, 2010), which is leaving retirement to re-engage in part or full-time employment.

Atchley’s continuity theory of aging provides a context for understanding the relationship between life satisfaction and time allocation after a period of retirement (Kim and Feldman, 2000). Individuals may develop a work identity that plays a large role in how they identify themselves. Continuity theory states that the more complex, fast-paced, or emotionally involving the work, the more the worker may invest in their work identity. These workers could experience difficulty adjusting to traditional retirement. Some may feel a loss of identity, which may lead to lower levels of life satisfaction.

One of the first studies to observe an association between bridge employment and life satisfaction found that bridge employment is associated positively with overall life satisfaction (Kim & Feldman, 2000). Wang (2007) found that those who are engaged in bridge employment are less likely to experience a change in well-being while transitioning into retirement than those who transitioned into retirement from full (non-bridge) employment. Research done on Dutch retirees found that retirees who are unable to find bridge employment, and retirees who sought bridge employment for financial reasons, report lower levels of life satisfaction than those who find and take bridge

employment for intrinsic purposes (Dingemans & Henkens, 2014). These studies analyze effects of bridge employment, or aspects thereof, on well-being or life satisfaction.

Other studies show that the labor-leisure tradeoff in retirement often has complex implications for life satisfaction. Volunteering time can be an alternative to paid employment. A 2014 study finds that there are several cognitive, psychological, and physical benefits that are associated with later-life volunteering and suggests that greater levels of volunteering might lead to additional benefits (Anderson et al. 2014). While another study notes that both life satisfaction and frequency of volunteering increase when a worker enters retirement, life satisfaction and volunteering are only marginally associated (Bjälkebring et al., 2021). Furthermore, the study notes that higher levels of volunteering are followed by decreases in life satisfaction and concludes that volunteering too much may be detrimental for a retiree's life satisfaction (Bjälkebring et al., 2021).

This paper adds to the body of literature by examining the relationship between Diener's measure of life satisfaction, as measured in the "Satisfaction With Life Scale" (SWLS), and post-retirement labor, both bridge employment and unretirement (Diener, 1985).

Data

This paper uses data from the Health and Retirement Study (HRS). The HRS is a longitudinal panel conducted by the University of Michigan. Both the National Institute on Aging (NIA) and the Social Security Administration support the HRS. When

weighted, the HRS are a nationally representative sample of about 20,000 respondents.

Due to data limitations this paper uses panel data from 2008-2018.

The dependent variable is subjective life satisfaction. The leave-behind module of the HRS uses Diener's measure of life satisfaction (Diener, 1985). Diener's SWLS, includes 5 statements to measure overall life satisfaction. However, this paper uses only one statement, "I am satisfied with my life." Although the leave-behind survey started in 2006, the SWLS scale changes from a 6-point scale in 2006 to a 7-point scale in 2008 and onward. This paper uses the 7-point scale from 2008-2018. The individual could respond to the statement with, 1 for "Strongly Disagree", 2 for "Somewhat Disagree", 3 for "Slightly Disagree", 4 for "Neither Agree or Disagree", 5 for "Slightly Agree", 6 for "Somewhat Agree", or 7 for "Strongly Agree".

All explanatory variables come from the longitudinal RAND compilation of the HRS. The key explanatory variables of this study are dichotomous variables measuring the reported post-retirement labor status of the respondent, either bridge employment or unretirement. The HRS asks the respondents to report their retirement status in each wave. The respondent can answer 0 for "Not Retired", 1 for "Completely Retired", or 2 for "Partially Retired", all other responses are coded as missing values.

This analysis acknowledges both unretirement, defined as coming out of a form of retirement to partake in labor, and bridge employment, defined as coming out of full employment to partake in partial retirement, as forms of post-retirement labor. If an individual was retired in wave 1 but reported being only partially retired in wave 2 or not

retired in wave 2, this is considered unretirement. Likewise, if the individual is partially retired in wave 1 but not retired in wave 2, this is still unretirement. If an individual was not retired in wave 1 but reported being partially retired in wave 2, they are considered to be in bridge- employment.

Additional variables are included to control for the effects of wealth, non-labor income, health, education, marital status, age, race, and gender. Table 1 summarizes the descriptive statistics for all variables.

Wealth is calculated as the sum of the net value of the individuals' primary residence, real estate, vehicles, businesses, stocks/mutual funds/investment trusts, checking, saving and money market accounts, certificates of deposit (CDs), government savings bonds, treasury bills, bonds and bond funds, and all other savings, less the value of all other debt.

Non-labor income is calculated as the sum of income from pensions, annuities, social security disability (SDI), supplemental security income (SSI), social security retirement, unemployment, worker's compensation, and other government transfers.

Health is the individuals self-reported general health status. The levels of health status are excellent, very good, good, fair, and poor.

Education is the individual's self-reported highest level of education attained. The educational levels are less than GED, GED, high-school diploma, some college, and college degree.

Marital status is the individual's self-reported marital status. For this paper, individuals who report they are married or who are married but their partner is considered absent, are categorized as married. All other partnership statuses are excluded from this definition of marriage, i.e., partnered, separated, divorced, separated/divorced, widowed, and never married.

Demographic controls include race, age, and gender. Self-reported race are two dummy variables, in both cases the reference group is white. However, one variable is coded as 1 if the respondent is black and the other is coded as "Other" if the respondent replied other as their race. Age is calculated from the individual's date of birth and the date of which they participated in the HRS. Self-reported gender is a dichotomous variable that is coded 1 for female and 0 for male. Table 3.1 shows the descriptive statistics for each variable.

Model

This paper estimates two ordered probit models. Each includes life satisfaction as the dependent variable. However, one set includes bridge employment as a key explanatory variable while the other set includes unretirement as a key explanatory variable. For this paper, post-retirement labor is parsed into bridge employment and unretirement. Although both labor groups consist of older workers, the level of employment and motivation for employment are likely distinctly different for each group. Continuity theory states that individuals who have a hard time adjusting to the structure of their retirement may return to a form of employment to re-establish a life structure

they are more accustomed too. On the other hand, older workers may be able to ease this change of structure by engaging in bridge employment before entering full retirement. In addition, certain occupations or economic conditions may make a delay of full retirement more attractive. These fundamental differences in characteristics are noteworthy and justify evaluating each labor group independently.

$$\begin{aligned}
 LS_{it}^* &= \beta_0 + \beta_1 BE + \beta_x X + v_i + \varepsilon_{it} \\
 &\quad \& \\
 LS_{it}^* &= \beta_0 + \beta_1 UR + \beta_x X + v_i + \varepsilon_{it}
 \end{aligned}$$

$$LS_{it} = \begin{cases} 1 & \text{if } LS_{it}^* \leq u_0 \text{ (Strongly Disagree)} \\ 2 & \text{if } u_0 < LS_{it}^* \leq u_1 \text{ (Somewhat Disagree)} \\ 3 & \text{if } u_1 < LS_{it}^* \leq u_2 \text{ (Slightly Disagree)} \\ 4 & \text{if } u_2 < LS_{it}^* \leq u_3 \text{ (Neither Agree Nor Disagree)} \\ 5 & \text{if } u_3 < LS_{it}^* \leq u_4 \text{ (Slightly Agree)} \\ 6 & \text{if } u_4 < LS_{it}^* \leq u_5 \text{ (Somewhat Agree)} \\ 7 & \text{if } u_5 < LS_{it}^* \leq u_6 \text{ (Strongly Agree)} \end{cases}$$

LS_{it} is the observed measure for life satisfaction and LS_i^* is the unobserved latent life satisfaction measure for person i , at wave t . The error terms ε_{it} follow a normal distribution and are independent of v_i , which is a set of panel-level random effects. Although estimating a fixed-effects probit model with an ordered dependent variable using panel may be technically possible, research suggest that doing so creates a large and persistent bias of the fixed-effects estimator (Greene, 2004).

BE indicates if the individual is in bridge employment or retired. UR indicates if the individual is in unretirement or retired. X is a matrix of other explanatory variables which includes marital status, wealth, health, education, age, race, and gender. The β s are parameters to be estimated with β_x representing a vector of parameters to be estimated. Marginal effects are estimated to show associations between the explanatory variables and the observed dependent variables.

Continuity theory directs the formulation of the primary hypothesis for this paper. Continuity theory can provide a context for understanding the consequences of employment during or after retirement (Kim and Feldman, 2000). Workers prefer to maintain existing structures and can use a form of post-retirement labor to preserve the structure they have built before retirement. Under continuity theory, a retiree who feels unfulfilled by a less structured retirement would return to work in some capacity to restore the life structures they have become accustomed to. After controlling for demographic and financial variables, we assume individuals enter unretirement because doing so increased their utility. Therefore, it is hypothesized that former retirees, who enter unretirement, will have a higher probability of agreeing with this statement and lower probability of disagreeing with this statement, compared to those who are not in unretirement. For older workers, bridge employment could be a way to maintain existing structures while gradually transitioning to retirement, allowing the individual the opportunity to develop other life structures before full retirement.

Results

This section reports the marginal effects for each explanatory variable of both models. The first model uses unretirement as the key explanatory variable with the other variables controlling for various effects table 3.2 shows the marginal effects. A complete table of marginal effects for this model can be found in appendix A. Compared to individuals who are not in unretirement, those individuals who are in unretirement have a 0.0078 higher probability of strongly disagreeing with the statement that they are satisfied with their life. These individuals have a 0.0061 higher probability of somewhat disagreeing with the statement, a 0.0051 higher probability of slightly disagreeing with the statement, a 0.0045 higher probability of neither disagreeing with the statement, a 0.0064 higher probability of slightly agreeing with the statement, and a 0.0297 lower probability of strongly agreeing with the statement, *ceteris paribus*. There is not a statistically significant relationship between somewhat agreeing with the statement and unretirement.

Wealth has a statically significant relationship with life satisfaction, although not very substantive. An increase in an individual's wealth by \$10,000 is associated with a 0.00004 lower probability of strongly disagreeing with the statement that they are satisfied with their life. An increase in an individual's wealth by \$10,000 dollars is associated with 0.00003 lower probability of somewhat disagreeing with the statement, a 0.00003 lower probability of slightly disagreeing with the statement, a 0.00002 lower probability of neither disagreeing with the statement, a 0.00003 lower probability of slightly agreeing with the statement, and a 0.0001 higher probability of strongly agreeing

with the statement, *ceteris paribus*. There is not a statistically significant relationship between somewhat agreeing with the statement and wealth.

Non-labor income is statistically significant with three levels of life satisfaction. An increase in an individual's non-labor income by \$10,000 is associated with a 0.0011 lower probability of somewhat disagreeing with the statement they are satisfied with their life, 0.0009 lower probability of slightly disagreeing with the statement, and a 0.0053 higher probability of strongly agreeing with the statement, *ceteris paribus*. There is not a statistically significant relationship between strongly disagreeing, neither agreeing nor disagreeing, slightly agreeing, and somewhat agreeing with the statement and non-labor income.

For the most part, being married have a statistically significant association with life satisfaction. Compared to individuals who were not married, individuals who were married have a 0.0215 lower probability of strongly disagreeing with the statement that they are satisfied with their life. Married individuals have a 0.0168 lower probability of somewhat disagreeing with the statement, a 0.0140 lower probability of slightly disagreeing with the statement, a 0.0124 lower probability of neither disagreeing or disagreeing with the statement, a 0.0176 lower probability of slightly agreeing with the statement, and a 0.0817 higher probability of strongly agreeing with the statement, *ceteris paribus*. There is not a statistically significant relationship between somewhat agreeing with the statement and marriage.

The age of the individual has a statistically significant association with their life satisfaction. An increase in age by 1 year is associated with a 0.0004 lower probability of

strongly disagreeing with the statement that the individual is satisfied with their life. An increase in age by 1 year is associated with a 0.0003 lower probability of somewhat disagreeing with the statement, a 0.0003 lower probability of slightly disagreeing with the statement, a 0.0002 lower probability of neither agreeing or disagreeing with the statement, and a 0.0018 higher probability of strongly agreeing with the statement, *ceteris paribus*. There is not a statistically significant relationship between somewhat agreeing with the statement and age.

Gender has a statistically significant association with life satisfaction. Compared to males, females have a 0.0038 higher probability of strongly disagreeing with the statement that they are satisfied with their life. Females have a 0.0029 higher probability of somewhat disagreeing with the statement, a 0.0024 higher probability of slightly disagreeing with the statement, a 0.0022 higher probability of neither disagreeing with the statement, a 0.0031 higher probability of slightly agreeing with the statement, and a 0.0014 lower probability of strongly agreeing with the statement, *ceteris paribus*. There is not a statistically significant relationship between somewhat agreeing with the statement and being female.

Health has a statistically significant association with life satisfaction. For the analysis sample, those individuals who report being in excellent health are used as the base or reference group. Compared to those individuals who reported being in excellent health, individuals who report being in very good health have a 0.0101 higher probability of strongly disagreeing with the statement that they are satisfied with their life. Individuals in very good health have a 0.0123 higher probability of somewhat

disagreeing with the statement, a 0.0127 higher probability of slightly disagreeing with the statement, a 0.0130 higher probability of neither disagreeing or agreeing with the statement, a 0.0247 higher probability of slightly agreeing with the statement, and a 0.1031 lower probability of strongly agreeing with the statement, *ceteris paribus*. There is not a statistically significant relationship between somewhat agreeing with the statement and being in very good health, compared to those in excellent health.

Compared to those individuals who reported being in excellent health, individuals who report being in good health have a 0.0286 higher probability of strongly disagreeing with the statement that they are satisfied with their life. Individuals in good health have a 0.0305 higher probability of somewhat disagreeing with the statement, a 0.0294 higher probability of slightly disagreeing with the statement, a 0.0293 higher probability of neither disagreeing or agreeing with the statement, a 0.0493 higher probability of slightly agreeing with the statement, a 0.0375 higher probability of somewhat agreeing with the statement, and a 0.2048 lower probability of strongly agreeing with the statement, *ceteris paribus*.

Compared to those individuals who reported being in excellent health, individuals who report being in fair health have a 0.0677 higher probability of strongly disagreeing or agreeing with the statement that they are satisfied with their life. Individuals in fair health have a 0.0598 higher probability of somewhat disagreeing with the statement, a 0.0522 higher probability of slightly disagreeing with the statement, a 0.0479 higher probability of neither disagreeing with the statement, a 0.0710 higher probability of slightly agreeing with the statement, a 0.0121 higher probability of somewhat agreeing

with the statement, and a 0.3109 lower probability of strongly agreeing with the statement, *ceteris paribus*.

Compared to those individuals who reported being in excellent health, individuals who report being in poor health have a 0.1421 higher probability of strongly disagreeing with the statement that they are satisfied with their life. Individuals in poor health have a 0.0974 higher probability of somewhat disagreeing with the statement, a 0.0749 higher probability of slightly disagreeing with the statement, a 0.0617 higher probability of neither disagreeing or agreeing with the statement, a 0.0763 higher probability of slightly agreeing with the statement, a 0.0542 lower probability of somewhat agreeing with the statement, and a 0.3985 lower probability of strongly agreeing with the statement, *ceteris paribus*.

A few levels of education have a statistically significant association with life satisfaction. Compared to individuals with less than a GED, individuals with a GED have a 0.0220 lower probability of slightly agreeing with the statement that they are satisfied with their life. Individuals with a high-school diploma have a 0.028 lower probability of neither agreeing nor disagreeing with the statement, and a 0.027 lower probability of slightly agreeing with the statement. Individuals with some college education have a 0.022 lower probability of slightly agreeing with the statement. Individuals with a college degree have a 0.029 lower probability of neither agreeing nor disagreeing with the statement, and a 0.028 lower probability of slightly agreeing with the statement.

The second model uses bridge employment as the key explanatory variable with the other variables controlling for various effects, table 3.3 shows the marginal effects. A

complete table of marginal effects for this model can be found in appendix A. Compared to individuals who are not in bridge employment, those individuals who are in bridge employment have a 0.0126 higher probability of strongly disagreeing with the statement that they are satisfied with their life. These individuals have a 0.0101 higher probability of somewhat disagreeing with the statement, a 0.0087 higher probability of slightly disagreeing with the statement, a 0.0073 higher probability of neither disagreeing with the statement, a 0.0105 higher probability of slightly agreeing with the statement, and a 0.0489 lower probability of strongly agreeing with the statement, *ceteris paribus*. There is not a statistically significant relationship between somewhat agreeing with the statement and unretirement.

Wealth also has a statically significant relationship with life satisfaction, although not very substantive. An increase in an individual's wealth by \$10,000 is associated with a 0.00005 lower probability of strongly disagreeing with the statement that they are satisfied with their life. An increase in an individual's wealth by \$10,000 dollars is associated with 0.00004 lower probability of somewhat disagreeing with the statement, a 0.00003 lower probability of slightly disagreeing with the statement, a 0.00003 lower probability of neither disagreeing with the statement, a 0.00004 lower probability of slightly agreeing with the statement, and a 0.0002 higher probability of strongly agreeing with the statement, *ceteris paribus*. There is not a statistically significant relationship between somewhat agreeing with the statement and wealth.

Non-labor income is statistically significant with two levels of life satisfaction. An increase in an individual's non-labor income by \$10,000 is associated with a 0.0008

lower probability of slightly disagreeing with the statement they are satisfied with their life, and 0.0049 higher probability of agreeing with the statement, *ceteris paribus*. There is not a statistically significant relationship between strongly disagreeing, somewhat disagreeing, neither agreeing nor disagreeing, slightly agreeing, and somewhat agreeing with the statement and non-labor income.

For the most part, being married has a statistically significant association with life satisfaction. Compared to individuals who were not married, individuals who were married have a 0.0207 lower probability of strongly disagreeing with the statement that they are satisfied with their life. Married individuals have a 0.0167 lower probability of somewhat disagreeing with the statement, a 0.0143 lower probability of slightly disagreeing with the statement, a 0.0119 lower probability of neither disagreeing or disagreeing with the statement, a 0.0172 lower probability of slightly agreeing with the statement, and a 0.0803 higher probability of strongly agreeing with the statement, *ceteris paribus*. There is not a statistically significant relationship between somewhat agreeing with the statement and marriage.

The age of the individual has a statistically significant association with their life satisfaction. An increase in age by 1 year is associated with a 0.0004 lower probability of strongly disagreeing with the statement that the individual is satisfied with their life. An increase in age by 1 year is associated with a 0.0003 lower probability of somewhat disagreeing with the statement, a 0.0002 lower probability of slightly disagreeing with the statement, a 0.0002 lower probability of neither agreeing or disagreeing with the statement, a 0.0003 lower probability of slightly agreeing with the statement and a 0.0018

higher probability of strongly agreeing with the statement, *ceteris paribus*. There is not a statistically significant relationship between somewhat agreeing with the statement and age.

Health has a statistically significant association with life satisfaction. For the analysis sample, those individuals who report being in excellent health are used as the base or reference group. Compared to those individuals who reported being in excellent health, individuals who report being in very good health have a 0.0096 higher probability of strongly disagreeing with the statement that they are satisfied with their life. Individuals in very good health have a 0.01227 higher probability of somewhat disagreeing with the statement, a 0.0132 higher probability of slightly disagreeing with the statement, a 0.0132 higher probability of neither disagreeing or agreeing with the statement, a 0.0248 higher probability of slightly agreeing with the statement, a 0.0309 higher probability of somewhat agreeing with the statement, and a 0.1042 lower probability of strongly agreeing with the statement, *ceteris paribus*.

Compared to those individuals who reported being in excellent health, individuals who report being in good health have a 0.0275 higher probability of strongly disagreeing with the statement that they are satisfied with their life. Individuals in good health have a 0.0307 higher probability of somewhat disagreeing with the statement, a 0.0307 higher probability of slightly disagreeing with the statement, a 0.029 higher probability of neither disagreeing or agreeing with the statement, a 0.0497 higher probability of slightly agreeing with the statement, a 0.0394 higher probability of somewhat agreeing with the

statement, and a 0.2071 lower probability of strongly agreeing with the statement, *ceteris paribus*.

Compared to those individuals who reported being in excellent health, individuals who report being in fair health have a 0.0669 higher probability of strongly disagreeing with the statement that they are satisfied with their life. Individuals in fair health have a 0.0613 higher probability of somewhat disagreeing with the statement, a 0.0552 higher probability of slightly disagreeing with the statement, a 0.0478 higher probability of neither disagreeing or agreeing with the statement, a 0.0722 higher probability of slightly agreeing with the statement, a 0.0123 higher probability of somewhat agreeing with the statement, and a 0.316 lower probability of strongly agreeing with the statement, *ceteris paribus*.

Compared to those individuals who reported being in excellent health, individuals who report being in poor health have a 0.1486 higher probability of strongly disagreeing with the statement that they are satisfied with their life. Individuals in poor health have a 0.1029 higher probability of somewhat disagreeing with the statement, a 0.0805 higher probability of slightly disagreeing with the statement, a 0.0618 higher probability of neither disagreeing or agreeing with the statement, a 0.0767 higher probability of slightly agreeing with the statement, a 0.0628 lower probability of somewhat agreeing with the statement, and a 0.4078 lower probability of strongly agreeing with the statement, *ceteris paribus*.

One level of education has a statistically significant association with life satisfaction. Compared to individuals with less than a GED, individuals with a college

degree have a 0.0279 lower probability of slightly agreeing with the statement that they are satisfied with their life.

Conclusion

The results for the key explanatory variables are mixed. Although unretirement is associated positively with the individual slightly agreeing with the statement that they are satisfied with their life, there was no association between somewhat agreeing with the statement and unretirement, and strongly agreeing with the statement is associated negatively with unretirement. Furthermore, strongly disagreeing, somewhat disagreeing, and slightly disagreeing with the statement are all associated positively with unretirement.

Likewise, bridge employment is associated positively with the individual slightly agreeing with the statement that they are satisfied with their life, there was no association between somewhat agreeing with the statement and unretirement, and strongly agreeing with the statement is associated negatively with unretirement. Furthermore, strongly disagreeing, somewhat disagreeing, and slightly disagreeing with the statement are all associated positively with unretirement.

As previously mentioned, the labor-leisure tradeoff in retirement often has complex implications for life satisfaction. However, literature on volunteerism during retirement may provide some additional context for interpreting our mixed results. Previous research on the life satisfaction of retirees who volunteer shows that retirees do tend to receive a benefit from volunteering, but this benefit diminishes the more they

volunteer and eventually could have a detrimental effect on their life satisfaction if they volunteer too much (Bjälkebring et al., 2021). Although there are distinct differences between volunteerism and paid labor, they both can provide a sense of structure. Volunteerism during retirement, like employment after retirement, can be an effective way for an individual to maintain a life structure when they leave the workforce. One study found that volunteer work can complement bridge employment in facilitating adjustment to retirement (Kim & Feldman, 2000). Future research could benefit from further exploring the possibility of a non-linear relationship between hours worked in post-retirement labor and life satisfaction, as was shown for levels of volunteerism in retirement.

References

- Anderson, N. D., Damianakis, T., Kröger, E., Wagner, L. M., Dawson, D. R., Binns, M. A., Bernstein, S., Caspi, E., & Cook, S. L. (2014). The benefits associated with volunteering among seniors: A critical review and recommendations for future research. *Psychological Bulletin*, 140(6), 1505–1533. <https://doi-org.lib-e2.lib.ttu.edu/10.1037/a0037610>
- Bjälkebring, P., Henning, G., Västfjäll, D., Dickert, S., Brehmer, Y., Buratti, S., Hansson, I., & Johansson, B. (2021). Helping out or helping yourself? Volunteering and life satisfaction across the retirement transition. *Psychology and Aging*, 36(1), 119–130. <https://doi-org.lib-e2.lib.ttu.edu/10.1037/pag0000576.supp> (Supplemental)
- BLS (2021, November 4). Number of people 75 and older in the labor force is expected to grow 96.5 percent by 2030 : The Economics Daily: U.S. Bureau of Labor Statistics. *Bureau of Labor Statistics*. <https://www.bls.gov/opub/ted/2021/number-of-people-75-and-older-in-the-labor-force-is-expected-to-grow-96-5-percent-by-2030.htm>
- Diener, Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction With Life Scale. *Journal of Personality Assessment*, 49(1), 71–75. https://doi.org/10.1207/s15327752jpa4901_13
- Dingemans, E., & Henkens, K. (2014). Involuntary retirement, bridge employment, and satisfaction with life: A longitudinal investigation. *Journal of organizational behavior*, 35, 575-591.
- Feldman, D. C. (1994). The Decision to Retire Early: A Review and Conceptualization. *The Academy of Management review*, 19, 285–311.
- Fry, R. (2021, November 4). Amid the pandemic, a rising share of older U.S. adults are now retired. *Pew Research Center*. Retrieved February 19, 2022, from <https://www.pewresearch.org/fact-tank/2021/11/04/amid-the-pandemic-a-rising-share-of-older-u-s-adults-are-now-retired/>
- Greene, W.H., 2004, The behaviour of the maximum likelihood estimator of limited dependent variable models in the presence of fixed effects, *Econometrics Journal* 7, 98–119.
- Kim, S., & Feldman, D. C. (2000). Working in Retirement: The Antecedents of Bridge Employment and Its Consequences for Quality of Life in Retirement. *Academy of Management journal*, 43, 1195-1210.
- Maestas, N., & Zissimopoulos, J. (2010). How Longer Work Lives Ease the Crunch of Population Aging. *The Journal of Economic Perspectives*, 24(1), 139-160.

- Vespa, J., Medina, L., & Armstrong, D. M. (2020, February). Demographic Turning Points for the United States: Population Projections for 2020 to 2060. census.gov. Retrieved from <https://www.census.gov/content/dam/Census/library/publications/2020/demo/p25-1144.pdf>
- Wang, M. (2007). Profiling Retirees in the Retirement Transition and Adjustment Process: Examining the Longitudinal Change Patterns of Retirees' Psychological Well-Being. *Journal of applied psychology*, 92, 455-474.

Table 3.1: Descriptive Statistics of Dependent and Independent Variables

Variable	<i>Mean</i>	<i>Standard Error</i>
I am satisfied with my life.		
<i>Strongly Disagree</i>	0.0426	0.0019
<i>Somewhat Disagree</i>	0.0498	0.0021
<i>Slightly Disagree</i>	0.0528	0.0021
<i>Neither Agree Nor Disagree</i>	0.0571	0.0022
<i>Slightly Agree</i>	0.1227	0.0031
<i>Somewhat Agree</i>	0.3497	0.0046
<i>Strongly Agree</i>	0.3251	0.0045
Bridge Employment	0.0845	0.0017
Unretirement	0.1196	0.0020
Wealth (\$)	432,794.30	8,596.67
Non-Labor Income (\$)	22,843.63	220.881
Health		
<i>Excellent</i>	0.0829	0.0268
<i>Very Good</i>	0.3246	0.0045
<i>Good</i>	0.3604	0.0046
<i>Fair</i>	0.1786	0.0037
<i>Poor</i>	0.0533	0.0021
Race		
White	0.8416	0.0037
Black	0.1243	0.0033
Other	0.034	0.0018
Female	0.5758	0.0048
Education		
Less than High-School	0.1421	0.0033
GED	0.0509	0.0021
High-School Graduate	0.3192	0.0045
Some College	0.2379	0.0041
College and Above	0.2495	0.0042
Married	0.5915	0.0047
Age	73.3681	0.07489
Note: Means and Standard Errors for each of the dependent and independent variables used in the analysis sample.		

Table 3.2: Marginal Effects of Unretirement and Other Explanatory Variables on Life Satisfaction

Dependent Variable	<i>Marginal Effect (Standard Error)</i>				
<i>I am satisfied with my life</i>	<i>Unretirement^a</i>	<i>Wealth (\$10,000)</i>	<i>Non-Labor Income (\$10,000)</i>	<i>Married</i>	<i>Age</i>
<i>Strongly Disagree</i>	0.0078*** (0.0029)	-0.00004*** (0.00001)	-0.0014 (0.0014)	-0.0215*** (0.0023)	-0.0004*** (0.0001)
<i>Somewhat Disagree</i>	0.0061*** (0.0023)	-0.00003*** (0.000009)	-0.0011* (0.0006)	-0.0168*** (0.0018)	-0.0003*** (0.0001)
<i>Slightly Disagree</i>	0.0051*** (0.0019)	-0.00003*** (0.000007)	-0.0009*** (0.0003)	-0.0140*** (0.0015)	-0.0003*** (0.00008)
<i>Neither Agree nor Disagree</i>	0.0045*** (0.0017)	-0.00002*** (0.000006)	-0.0008 (0.0011)	-0.0124*** (0.0013)	-0.0002*** (0.00007)
<i>Slightly Agree</i>	0.0064*** (0.0024)	-0.00003*** (0.000008)	-0.0015 (0.0008)	-0.0176*** (0.0018)	-0.0003*** (0.0001)
<i>Somewhat Agree</i>	-0.0003 (0.0003)	0.000001 (0.00001)	0.00005 (0.0007)	0.0008 (0.0009)	0.00001 (0.00002)
<i>Strongly Agree</i>	-0.0296*** (0.0111)	0.0001*** (0.00004)	0.0053** (0.0022)	0.0816*** (0.0084)	0.0018*** (0.0005)
	<i>Female</i>	<i>Very Good Health^b</i>	<i>Good Health^b</i>	<i>Fair Health^b</i>	<i>Poor Health^b</i>
<i>Strongly Disagree</i>	0.0038* (0.0023)	0.0101*** (0.0014)	0.0286*** (0.0021)	0.0677*** (0.0042)	0.1422*** (0.0106)
<i>Somewhat Disagree</i>	0.0029* (0.0018)	0.0123*** (0.0018)	0.0305*** (0.0022)	0.0598*** (0.0035)	0.0974*** (0.005)
<i>Slightly Disagree</i>	0.0024* (.0015)	0.0127*** (0.0019)	0.0294*** (0.0022)	0.0522*** (0.0031)	0.0750*** (0.0040)
<i>Neither Agree nor Disagree</i>	0.0022* (0.0013)	0.0135*** (0.0020)	0.0293*** (0.0023)	0.0479*** (0.0029)	0.0617*** (0.0032)
<i>Slightly Agree</i>	0.0031* (0.0019)	0.0247*** (0.0039)	0.0493*** (0.0041)	0.0710*** (0.0044)	0.0763*** (0.0044)
<i>Somewhat Agree</i>	-0.0001 (0.0001)	0.0296*** (0.0059)	0.0375*** (0.0005)	0.0121* (0.0066)	-0.0542*** (0.0106)
<i>Strongly Agree</i>	-0.0144* (0.0088)	-0.1031*** (0.0165)	-0.2048*** (0.0167)	-0.3109*** (0.0171)	-0.3985*** (0.0176)
	<i>GED^c</i>	<i>High School Diploma^c</i>	<i>Some College^c</i>	<i>College Degree^c</i>	<i>Black^d</i>
<i>Strongly Disagree</i>	-0.0885 (0.1245)	-0.0962 (0.1245)	-0.0887 (0.1245)	-0.0976 (0.1245)	0.0118 (0.0033)
<i>Somewhat Disagree</i>	-0.0485 (0.0511)	-0.0544 (0.0510)	-0.0486 (0.0510)	-0.0555 (0.0510)	0.0009 (0.0025)
<i>Slightly Disagree</i>	-0.0331 (0.0285)	-0.0379 (0.0284)	-0.0332 (0.0284)	-0.0388 (0.0284)	0.0007 (0.0021)
<i>Neither Agree nor Disagree</i>	-0.0240 (0.0156)	-0.0282* (0.0155)	-0.0240 (0.0155)	-0.0290* (0.0155)	0.0068 (0.0018)
<i>Slightly Agree</i>	-0.0220*** (0.0039)	0.0278*** (0.0022)	-0.0221*** (0.0022)	-0.0289*** (0.0025)	0.0009 (0.0002)

Table 3.2. Continued

<i>Somewhat Agree</i>	0.0592 (0.0975)	0.0603 (0.0975)	0.0592 (0.0975)	0.0602 (0.0975)	-0.00006 (0.0002)
<i>Strongly Agree</i>	0.1571 (0.1241)	0.1874 (0.1232)	0.1575 (0.1232)	0.1897 (0.1233)	-0.0044 (0.0123)
Other_d					
<i>Strongly Disagree</i>	-0.0006 (0.0056)				
<i>Somewhat Disagree</i>	-0.0050 (0.0045)				
<i>Slightly Disagree</i>	-0.0004 (0.0039)				
<i>Neither Agree nor Disagree</i>	-0.0003 (0.0033)				
<i>Slightly Agree</i>	-0.0005 (0.0047)				
<i>Somewhat Agree</i>	0.00001 (0.00006)				
<i>Strongly Agree</i>	0.0024 (0.0221)				

Note: N of 10,919, observations from the 2008-2018 Health and Retirement Study, using variables from both the leave-behind survey and RAND, *** denotes statistical significance at the 1% level, ** denotes statistical significance at the 5% level, * denotes statistical significance at the 10% level. a compared to those who are not in unretirement, b compared to those who reported being in excellent health, c compared to with less than a GED, d compared to those who report their race as white.

Table 3.3: Marginal Effects of Bridge Employment and Other Explanatory Variables on Life Satisfaction

Dependent Variable	<i>Marginal Effect (Standard Error)</i>				
<i>I am satisfied with my life</i>	<i>Bridge Employment^a</i>	<i>Wealth (\$10,000)</i>	<i>Non-Labor Income (\$10,000)</i>	<i>Married</i>	<i>Age</i>
<i>Strongly Disagree</i>	0.0126*** (0.0036)	-0.00005*** (0.00001)	-0.0012 (0.0017)	-0.0207*** (0.0023)	-0.0004*** (0.0001)
<i>Somewhat Disagree</i>	0.0101*** (0.0029)	-0.00004*** (0.000009)	-0.0010 (0.0007)	-0.0167*** (0.0018)	-0.0003*** (0.0001)
<i>Slightly Disagree</i>	0.0087*** (0.0025)	-0.00003*** (0.000007)	-0.0008** (0.0004)	-0.0143*** (0.0016)	-0.0002*** (0.00009)
<i>Neither Agree nor Disagree</i>	0.0073*** (0.0020)	-0.00003*** (0.000006)	-0.0007 (0.0001)	-0.0119*** (0.0013)	-0.0002*** (0.00007)
<i>Slightly Agree</i>	0.0105*** (0.0030)	-0.00004*** (0.000008)	-0.0010 (0.0009)	-0.0172*** (0.001)	-0.0003*** (0.0001)
<i>Somewhat Agree</i>	-0.0004 (0.0005)	0.000001 (0.000002)	0.00004 (0.002)	0.0007 (0.0009)	0.00001 (0.0016)
<i>Strongly Agree</i>	-0.0489*** (0.0139)	0.0002*** (0.00004)	0.0049* (0.026)	0.0803*** (0.0085)	0.0016*** (0.0005)
	<i>Female</i>	<i>Very Good Health^b</i>	<i>Good Health^b</i>	<i>Fair Health^b</i>	<i>Poor Health^b</i>

Table 3.3. Continued

<i>Strongly Disagree</i>	0.0031 (0.0023)	0.0096*** (0.0014)	0.0275*** (0.0021)	0.0669*** (0.0042)	0.1486*** (0.0109)
<i>Somewhat Disagree</i>	0.0025 (0.0018)	0.01227*** (0.0018)	0.0307*** (0.0023)	0.0613*** (0.0032)	0.10299*** (0.0059)
<i>Slightly Disagree</i>	0.0021 (0.0015)	0.0132*** (0.0020)	0.0307*** (0.0023)	0.0552*** (0.0032)	0.0805*** (0.0042)
<i>Neither Agree nor Disagree</i>	0.0018 (0.0013)	0.0132*** (0.0020)	0.0290*** (0.0023)	0.0478*** (0.0029)	0.0618*** (0.0003)
<i>Slightly Agree</i>	0.0026 (0.0019)	0.0248*** (0.0039)	0.0497*** (0.0042)	0.0722*** (0.0044)	0.0767*** (0.0045)
<i>Somewhat Agree</i>	-0.0001 (0.0001)	0.0309*** (0.0061)	0.0394*** (0.0062)	0.0123* (0.0069)	-0.0628*** (0.0111)
<i>Strongly Agree</i>	-0.0121 (0.0089)	-0.1042*** (0.0168)	-0.2071*** (0.0121)	-0.3160*** (0.0174)	-0.4078*** (0.0176)
	GED_c	High School Diploma_c	Some College_c	College Degree_c	Black_a
<i>Strongly Disagree</i>	-0.0627 (0.1508)	-0.0695 (0.1507)	-0.0628 (0.1508)	-0.0717 (0.1507)	0.0011 (0.0033)
<i>Somewhat Disagree</i>	-0.0380 (0.0739)	-0.0434 (0.0738)	-0.0381 (0.0739)	-0.0451 (0.0739)	0.0008 (0.0026)
<i>Slightly Disagree</i>	-0.0277 (0.0467)	-0.0322 (0.0466)	-0.0277 (0.0467)	-0.0337 (0.0466)	0.0007 (0.0022)
<i>Neither Agree nor Disagree</i>	-0.0198 (0.0280)	-0.0235 (0.0279)	-0.0198 (0.0280)	-0.0248 (0.0279)	0.0006 (0.0018)
<i>Slightly Agree</i>	-0.0208 (0.0166)	-0.0260 (0.0163)	-0.0209 (0.0166)	-0.0279* (0.0164)	0.0009 (0.0026)
<i>Somewhat Agree</i>	0.0402 (0.1201)	0.0412 (0.1201)	0.0402 (0.1201)	0.0412 (0.1201)	-0.00006 (0.00023)
<i>Strongly Agree</i>	0.1290 (0.1959)	0.1535 (0.1953)	0.1294 (0.1959)	0.1621 (0.1954)	-0.00425 (0.0125)
	Other_a				
<i>Strongly Disagree</i>	0.0031 (0.0023)				
<i>Somewhat Disagree</i>	0.0025 (0.0018)				
<i>Slightly Disagree</i>	0.0021 (0.0015)				
<i>Neither Agree nor Disagree</i>	0.0018 (0.0013)				
<i>Slightly Agree</i>	0.0026 (0.0019)				
<i>Somewhat Agree</i>	-0.0001 (0.0001)				
<i>Strongly Agree</i>	-0.0121 (0.0088)				

Note: N of 10,502, observations from the 2008-2018 Health and Retirement Study, using variables from both the leave-behind survey and RAND, *** denotes statistical significance at the 1% level, ** denotes statistical significance at the 5% level, * denotes statistical significance at the 10% level. ^a compared to those who are not in bridge employment, ^b compared to those who reported being in excellent health, ^c compared to with less than a GED, ^d compared to those who report their race as white.

Chapter IV

The Association of Post-Retirement Labor with Longest Held Job by Industry and Occupation

Introduction

Workers today are demonstrating a greater preference to continue working beyond what has traditionally been considered the retirement age. According to 2019 US census data, nearly twice as many people aged 65 or older are working today than were working in 1985 (Plews 2019). Not only are people working longer, but the retirement process is also becoming more dynamic. One study shows that about 50% of retirees engage in either bridge employment or unretirement before settling down into a traditional full retirement (Maestas, 2010).

This paper studies how the occupation and industry of a person's longest held job is related to the incidence of post-retirement labor. This paper recognizes both unretirement, defined as coming out of a form of retirement to partake in labor, and bridge employment, defined as coming out of full employment to partake in partial retirement, as forms of post-retirement labor. By using panel data from the 2010-2018 Health and Retirement Study, this study empirically finds several statistically significant relationships between both forms of post-retirement labor and the occupation and industry of a retiree's longest-held job. The paper uses Atchley's continuity theory of aging, in light of our empirical findings, to explain whether post-retirement labor can be an effective way to preserve an older worker's existing life structures, such as social and work identities. Results indicate that several high-status jobs, as well as jobs that could be considered to be rather emotionally involving or with a substantive degree of complexity,

are associated with post-retirement labor. This paper also finds an association between several non-work social structures, such as marital status and spousal co-retirement, and the incidence of post retirement labor.

Literature Review

Drawing from consumer theory, the post-retirement labor decision of older workers and retirees can be viewed as just another choice a consumer makes. This decision is made given a degree uncertainty and constraints and is just one in a lifetime of decisions that they must make. Individuals navigate this lifetime of decisions with the ultimate goal of maximizing their lifetime utility. However, there are several psychological theories than can be used to provide a greater insight into how and why this decision is made. This study utilizes Atchley's (1989) continuity theory to supplement both labor supply and consumer theory to evaluate the relationships between bridge employment and unretirement with previous job industry and occupation.

Atchley's continuity theory of aging provides a context for understanding both the antecedents and consequences of post-retirement labor (Kim and Feldman, 2000). Fundamentally, middle-aged and older workers prefer to maintain existing role identities and can use a form of post-retirement labor to preserve the structure they have built before retirement. Under continuity theory, the absence of work can be a stressor as some individuals experience "rolelessness" (Hornstein & Wapner, 1985; Richardson & Kilty, 1991; Kim and Feldman, 2000) This can be particularly evident in careers that are considered fast pace or emotionally involving, where recent retirees would likely have a

harder time adjusting to a retirement life with a completely different role identity (Atchley, 1989; Kim and Feldman, 2000). There are several studies that could help support the role continuity theory plays in high-status jobs which, presumably, could be more face paced or emotionally involving than lower-status jobs. Generally, these studies show that retirement outcomes differ for those in higher-status jobs versus those in lower-status jobs (Han and Moen 1999; Hayward et al. 1998; O'Rand and Henretta 1982).

Some of the earliest research done involving job industry or occupation and retirement was done by Ruhm (1990). Ruhm found that the combination of increased longevity and earlier initial retirements resulted in longer employment following the individual's exit from retirement. However, the focus of Ruhm's study was to analyze the association between changes in occupation or industry and the respondent's post-retirement employment. Ruhm used a regression analysis that utilized data on the head of households from the 1969-1979 Social Security Administration Retirement History Longitudinal Study. A key finding of Ruhm's study was that beginning bridge employment was associated with a change in job industry or occupation from the individual's pre-retirement career (Ruhm, 1990). Additionally, Ruhm found that belonging to the ethnic majority (white), being educated, initially retiring in one's late 50s, and not having a pension were all associated with not changing industry or occupation in bridge employment.

Feldman (1994) used push and pull factors to form a theoretical framework for decision making regarding early retirement. In the study, Feldman analyzed three distinct, but interconnected, early retirement decisions. These are the decisions to engage in early

retirement (before the age of 65), the decision to engage in bridge employment, and the decision to remain in the same job industry or occupation in bridge employment. However, the paper did not test the hypothesis Feldman (1994) proposed.

Another study examined the ways several work experiences are related to older workers' preference for continued employment or retirement at traditional retirement age (Raymo et al., 2010). This study included occupation and/or industry, defined as careers, as one such experience that may affect the older worker's retirement decision. The authors formulated several hypotheses regarding employer characteristics and employee's retirement decisions. The study found that those who did not work continuously during their early midlife, defined as around the age of 35, were less likely to meet their expectations for part-time employment in their later years. While those in high-status careers, in midlife were more likely to have continued employment at older ages than careers with lower status (Raymo et al., 2010). However, these results were based on regional data from Wisconsin, that are not nationally representative.

Kalenkoski & McCarty (2021) find that gradual and full retirement are associated positively with ethnicity and nonlabor income but associated negatively with marriage, being in good health, and having a college degree. These findings support a growing body of literature that suggest retirees return to work for various social and psychological benefits, not necessarily for financial reasons (Platts et al., 2019; Maestas, 2010; Wang 2008).

Data

This paper uses data from the Health and Retirement Study (HRS). The HRS is a nationally representative sample of about 20,000 older individuals. The University of Michigan conducts the study, and it is supported by the National Institute on Aging and the Social Security Administration. The RAND Corporation uses raw data from the HRS to make the core data easier to use. This paper uses the RAND Corporation's HRS dataset from 2010-2018. Because the unit of observation for our analyses is a respondent engaged in post-retirement labor, respondents who did not report their retirement status for all waves were dropped from the sample. Given the changing national demographics over these 4 waves, weights were not used. In addition, given the sample of interest, our samples are not nationally representative.

The dependent variables in this analysis are dichotomous variables that are constructed to measure a respondent's post-retirement labor status, either bridge employment, unretirement, or fully retired. To determine post-retirement labor status this paper uses the individual's response to the question: "At this time do you consider yourself to be completely retired, partly retired, or not retired at all?" The HRS variable is coded as 0 for "Not Retired", 1 for "Completely Retired", or 2 for "Partially Retired", all other responses are coded as missing values. This self-reported retirement status is then re-categorized into a categorized variable ordered by increased labor force participation: 0 for retired, 1 for partially retired, and 2 for not retired. This paper uses this new variable to determine the post-retirement labor status of the respondent across waves.

This paper analyzes both unretirement, defined as coming out of a form of retirement to partake in labor, and bridge employment, defined as coming out of full employment to partake in part-time employment. For example, if a respondent reported being retired in wave 1 but being only partially retired in wave 2 or not retired in wave 2, they would be considered to be in unretirement. If an individual reported being partially retired in wave 1 but not retired in wave 2, that individual has left retirement to engage in full-time work (unretirement). If an individual reported being not retired in wave 1 but being partially retired in wave 2, that individual is considered to be in bridge employment. In a few rare instances, an individual's bridge employment can lead to eventual unretirement. On these occasions the individual is considered to be in bridge employment the wave that individual reports entering partial retirement and that individual is considered in unretirement the wave in which that individual reports no longer being in any form of retirement.

The key explanatory variables in this study are the categorical variables for the respondent's longest-held, self-reported job occupation and job industry. This study uses the Health and Retirement Study's 2007 Census industries to define job-industry categories and 2010 Census codes to define job occupation. Alternatively, the HRS does have data on self-reported job occupation and industry for all waves using census job codes from the 1980s. However, these codes may not fully reflect all sectors of job occupations and industries that exist today. The 2007 job industry variable was first introduced in wave 10 of the study. This variable has 19 broad industry codes that the respondent can choose from: Agriculture (including forestry, fishing, and hunting),

Mining (including quarrying, and oil or gas extraction), Construction, Manufacturing, Utilities, Wholesale Trade, Retail Trade, Transportation/Warehousing, Information, Finance/Insurance, Real Estate (including rental and leasing) Professional and Technical Services (including scientific), Management (including administrative and waste services), Educational Services, Healthcare & Social Assistance, Arts (including entertainment and recreation), Accommodation and Food Services, Public Administration and Military Services, and Other Services (except public administration). Because Health Care & Social Assistance is the job industry category with the greatest number of respondents, it is used as the base (or reference) group for regression purposes.

For job occupation, this study uses the HRS variable that records a respondent's longest-held-job occupation under the 2010 Census codes for job occupation. This question was first asked in wave 10 of the HRS. This variable has 23 broad occupation codes that the respondent can choose from: Management, Business and Financial Operations, Computer and Mathematical, Architecture and Engineering, Life/Physical/Social Science, Community and Social Service, Legal, Education/Training and Library, Arts/Design/Entertainment/Sports/Media, Healthcare Practitioners, Healthcare Support, Protective Services, Food prep/Serving related, Building/Grounds Cleaning, Personal Care and Services, Sales and related, Office/Administrative support, Farming/Fishing/Forestry, Construction (including resource extraction), Installation/Maintenance, Production, Transportation and Material Moving, Military, and other occupations. Because Sales/Related is the job occupation category with the greatest number of respondents, it is used as the base group for regression purposes.

Other variables are included to control for additional effects that otherwise may contribute to the utility maximizing decision making process of these individuals. A set of financial variables are included to control for various individual financial circumstances.

Non-labor income is the sum of all income that is not derived from current labor. This variable is expressed in units of \$10,000 and includes income from annuities, social security disability, pensions, social security retirement, social security income, unemployment insurance, worker's compensation, and "other" government transfers. Labor supply theory says that as an individual's non-labor income increases, the amount of labor they would supply would decrease.

This paper also controls total wealth, expressed in units of \$10,000. This variable includes the net value of real estate net of all mortgages and all outstanding home loans businesses, vehicles, stocks (including mutual funds and investment trusts, IRAs or Keogh accounts, bonds and bond funds, treasury bills, government savings bonds, certificate of deposits, money cash and savings accounts, and all other savings (less all other debt).

This paper also includes several variables that control for various demographics or individual preferences on the utility maximizing decisions for these older respondents.

As family life can provide meaningful role identities across an individual's lifespan, several studies have analyzed the relationship between marital status/quality and retirement decisions (Kim & Feldman, 2000; Szinovacz, 2003). The HRS asks the

respondent for their current marital status. The respondent can select the option that is most applicable to their current situation, these include married, married (spouse absent from household), partnered, separated, divorced, widowed, or never married. For this study, respondents who report they are married even if the spouse is currently absent are considered to be married. A dichotomous variable is used where 0 means the respondent is not married and 1 means the respondent is married.

Not only could marital status play a role, but spousal employment also could be a contributing factor in the decision to engage in some form of post-retirement labor. There is a body of literature that shows the preference for spousal coretirement (Ho & Raymo, 2009; Kim & Moen, 2002; O'Rand & Farkas, 2002; Szinovacz, 2002). One German and Spanish study finds that coretirement occurs even after involuntary exit by one spouse from the labor market (Radl & Himmerleicher, 2015). This paper uses a dichotomous variable to measure the retirement status of the respondent's spouse, the values are 0 if the spouse is retired and 1 if not. This variable relies on the HRS variable that asks the respondent's spouse to report their current retirement status. If the respondent's spouse reports being either "Not-retired" or only "Partially-Retired", they are considered to be non-retired. Because being married to a non-retired spouse is controlled for, this means that the dichotomous variable for marriage controls for being married while having a retired spouse.

For older workers, changes in health can become an increasingly large factor in the decision to leave retirement or not. Previous studies have found that serious health ailments, such as cancer or heart disease, are associated with being unable to continue

performing assigned job duties effectively (Colsher, Dorfman, & Wallace, 1988; Muller & Boaz, 1988). Previous research on the association of health and bridge employment supports this notion, finding a significant relationship between good health and bridge employment (Kim & Feldman, 2000). This study uses the HRS variable that measures the respondent's self-reported general health status to construct a series of dichotomous variables, comparing each to level of health to the reference category of excellent health.

In addition to health, age may also be a factor in the decision to leave some form of retirement or not. As employees age, they simply may wish to spend more of their time away from paid labor. In addition, age may also capture the effects of smaller health ailments that may not be fully captured by the self-reported health status. For instance, an alignment such as a minor form of arthritis may not be severe enough for the respondent to declare a poor health status, but the negative effects on productivity may still exist. Research on the antecedents of bridge employment finds that, as people age, they are less likely to participate in bridge employment (Kim & Feldman, 2000). For age, this study uses the HRS continuous variable that reports the respondent's current age.

The respondent's education also has been seen as an antecedent for bridge employment in past studies (Wang et al., 2008; Ruhm 1990). Wang et al. (2008) argues that educated individuals may be better prepared to further contribute to their occupation or industry than those in the same cohort but with less education. Similarly, Ruhm (1990) found that retirees who were well educated were more likely than less educated retirees to remain in their career field after a period of retirement. Education could reflect specialized knowledge that may lead consultation after the retiree's primary career has

ended. This study uses the RAND HRS categorical education variable to measure the respondent's categorical level of education. Dummy variables are created for Less than High-School, GED, High-School, Some College, and College and above. The "Less than High-School" category is used as the reference group.

Both race and gender are controlled for to capture any demographic related associations with the post-retirement labor. Self-reported race are two dummy variables, in both cases the reference group is white. However, one variable is coded as 1 if the respondent is black and the other is coded as "Other" if the respondent replied other as their race. Similarly, self-reported gender is a dichotomous variable that is coded 1 for female and 0 for male. Table 4 shows descriptive statistics for each analysis sample.

Model

This paper estimates four probit models. For each model the individual's post-retirement labor status is the dependent variable, two models with unretirement and two models with bridge employment. The models are further parsed by key explanatory variables, job occupation and industry. Two models include longest tenured job occupation as an explanatory variable while the other two models include longest tenured job industry as an explanatory variable. The result is four separate probit models:

$$Y_i^{B*} = \alpha_0 + \alpha_1 IND + \alpha_x X + v_i + \varepsilon_{it} \quad (1.1)$$

$$Y_i^{B*} = \beta_0 + \beta_1 OCC + \beta_x X + v_i + \theta_{it} \quad (1.2)$$

$$Y_i^{U*} = \gamma_0 + \gamma_1 IND + \gamma_x X + v_i + \lambda_{it} \quad (1.3)$$

$$Y_i^{U*} = \delta_0 + \delta_1 OCC + \delta_x X + v_i + \mu_{it} \quad (1.4)$$

$$Y_i^U = \begin{cases} 1 & Y_i^{U*} > 0 \\ 0 & Y_i^{U*} \leq 0 \end{cases}$$

$$Y_i^B = \begin{cases} 1 & Y_i^{B*} > 0 \\ 0 & Y_i^{B*} \leq 0 \end{cases}$$

where the latent variable, Y_i^* ; is the unobserved net benefit of employment for former retiree i . The variable Y_i^U is the observed dichotomous decision of individual i to engage in unretirement. The variable Y_i^B is the observed dichotomous decision of individual i to engage in bridge employment. OCC is the longest held job occupation of the individual, while IND is the longest held job industry of the individual. X is a matrix of other explanatory variables which include marital status, employment status of spouse, total wealth, non-labor income, health, education, age, race, and gender.

For model 1.1, α_1 are parameters to be estimated for the key explanatory variable and α_x is a vector of parameters to be estimated for the other explanatory variables. The error term ε_{it} follows a normal distribution and are independent of v_i , which is a set of individual-level random effects.

For model 1.2, β_1 are parameters to be estimated for the key explanatory variable and β_x is a vector of parameters to be estimated for the other explanatory variables. The error term θ_{it} follows a normal distribution and are independent of v_i , which is a set of individual-level random effects.

For model 1.3, γ_1 are parameters to be estimated for the key explanatory variable and γ_x is a vector of parameters to be estimated for the other explanatory variables. The error term λ_{it} follows a normal distribution and are independent of v_i , which is a set of individual-level random effects.

For model 1.4, δ_1 are parameters to be estimated for the key explanatory variable and δ_x is a vector of parameters to be estimated for the other explanatory variables. The error term μ_{it} follows a normal distribution and are independent of v_i , which is a set of individual-level random effects.

Marginal effects are estimated to show associations between the explanatory variables and the observed dependent variables.

Results

This section summarizes the marginal effects for each key explanatory variable for each of the four models. Tables 4.5 and 4.6 show marginal effects of industry of longest-held job (Table 4.5) and occupation of longest held job (Table 4.6) on bridge employment. The marginal effects for model 1.1 indicate a statistically significant relationship for the Finance/Insurance industry other services/industries, compared to those working in the Health Care & Social Assistance industry.

The results from model 1.1 report three key explanatory variables are statistically significant. Compared to the Health Care & Social Assistance industry, working in the Finance/Insurance industry is associated negatively with the probability of engaging in

bridge employment by 0.2070. This finding could be consistent with previous literature and theoretical expectations. A career in the healthcare industry could be considered more of a face-paced career and could be more emotionally involving than a career in finance or insurance. A retiree who may have grown accustomed to the pace of a Health Care/ Social Assistance industry may find complete retirement lacking in structure and return, in some capacity, employment. Compared to the Health Care & Social Assistance industry, working in a service industry (not related to public administration) is associated negatively with the probability of engaging in bridge employment by 0.2542. Compared to the Health Care & Social Assistance industry, working in the “Other” industries is associated negatively with the probability of engaging in bridge employment by 0.4558.

The results from model 1.1 report four demographic control variables have a statistically significant association with bridge employment. Being married and having a non-retired spouse, i.e., a working spouse, is associated positively with the probability of engaging in bridge employment by 0.1084. This result could be explained by a preference for coretirement in which both partners retire at the same time (Ho & Raymo, 2009; Kim & Moen, 2002; O'Rand & Farkas, 2002; Szinovacz, 2002). This result is unique in that it indicates coretirement is often desirable even after one, or both spouses, return to work for a period of time. On the other hand, as people get older, they are less likely to continue their bridge employment. Age is associated negatively with the probability of engaging in bridge employment by 0.0164.

Health has a statistically significant association with bridge employment. Compared to those individuals who report being in excellent health, reporting being in

poor health is associated negatively with the probability of engaging in bridge employment by 0.0824. This result is consistent with previous findings (Kim & Feldman, 2000; Colsher, Dorfman, & Wallace, 1988; Muller & Boaz, 1988).

Education has a statistically significant association with bridge employment. Compared to those individuals who report having less than a GED, reporting having earned a high school diploma is associated positively with the probability of engaging in bridge employment by 0.1048. Reporting having some college education is associated positively with the probability of engaging in bridge employment by 0.0947. Reporting having earned a college degree is associated positively with the probability of engaging in bridge employment by 0.0980. Previous research supports the findings on education as well (Wang et al., 2008; Ruhm 1990).

The results from model 1.2 indicate a statistically significant relationship with the Life/Physical/Social Science occupations, Legal Occupations, Transportation/Material moving, and “other” occupations, compared to individuals working in the Sales/Related industry. The full list of marginal effects can be found in table 4.6. Compared to individuals working in Sales/Related occupations, working in Life/Physical/Social Science occupations is associated negatively with the probability of engaging in bridge employment by 0.2838. Compared to individuals working in Sales/Related occupations, working in Legal occupations is associated positively with the probability of engaging in bridge employment by 0.1933. This finding is consistent with previous literature and theoretical expectations. A career in a legal occupation could be considered more of a high-status career and could have a more substantive degree of complexity than a career

in Sales/Related occupations. A retiree who may have grown accustomed to the pace of a legal occupation may find complete retirement lacking in structure and return, in some capacity, employment. Compared to individuals working in Sales/Related occupations, working in Transportation/Material Moving occupations is associated positively with the probability of engaging in bridge employment by 0.2267. This result may be influenced by labor demands of the economy for this occupation. Compared to individuals working in Sales/Related occupations, working in “other” occupations is associated negatively with the probability of engaging in bridge employment by 0.4207. The “Architecture/Engineering”, “Food Prep”, and “Farming/Fishing” occupations were not estimable due to their small group size, these occupations were added to the “Other” category.

This forced regrouping could help explain the strong statistical significance. A lack of variation in some of the categories does show one of the biggest limitations to this study, a relatively small sample size. Future research would benefit from a larger analysis sample. However, given the unit of observation are those individuals who retired, then unretired or engaged in bridge employment, finding a sufficiency large sample may be challenging.

The results from model 1.2 report three demographic control variables have a statistically significant association with bridge employment. Having a non-retired spouse is associated positively with the probability of engaging in bridge employment by 0.1074. Age is associated negatively with the probability of engaging in bridge employment by 0.0165.

Education has a statistically significant association with bridge employment. Compared to those individuals who report having less than a GED, reporting having earned a high school diploma is associated positively with the probability of engaging in bridge employment by 0.1442. Reporting having some college education is associated positively with the probability of engaging in bridge employment by 0.1394. Reporting having earned a college degree is associated positively with the probability of engaging in bridge employment by 0.1476. Previous research supports the findings on education as well (Wang et al., 2008; Ruhm 1990).

Tables 4.7 and 4.8 show marginal effects of industry of longest-held job (Table 4.7) and occupation of longest held job (Table 4.8) on unretirement. The marginal effects for model 1.3 indicate a statistically significant relationship for “other” industries, Non-Retired Spouse, married with a retired spouse, and age. Compared to the Health Care & Social Assistance industry, working in “other” industries is associated negatively with the probability of engaging in unretirement by 0.2773. Having a non-retired spouse is associated positively with the probability of engaging in unretirement by 0.1177. Being married with a retired spouse is associated negatively with the probability of engaging in unretirement by 0.0979, compared to those who are unmarried. In this study, this result was only found statistically significant for unretirement and not for the models with bridge employment as the dependent variable. Being married with a retired spouse does not have a statistically significant relationship with bridge employment, where the employee leaves full time employment to partake in part-time retirement but has a negative relationship for unretirement. Those who have a spouse may have less difficulty

adjusting to the structure of retirement, as this provides a social and life structure that remains unchanged. Age is associated negatively with the probability of engaging in bridge employment by 0.0045

The results from model 1.4 indicate a statistically significant relationship for Legal Occupations, Transportation/Material Moving occupations, “other” occupations, Non-Retired Spouse, Married – retired spouse, and age. Compared to individuals working in Sales/Related occupations, working in Legal occupations is associated positively with the probability of engaging in unretirement by 0.4651. Working in “other” occupations is associated negatively with the probability of engaging in unretirement by 0.2315. Having a non-retired spouse is associated positively with the probability of engaging in unretirement by 0.1150. Being married with a retired spouse is associated negatively with the probability of engaging in unretirement by 0.1136, compared to those who are unmarried. Age is associated negatively with the probability of engaging in unretirement by 0.0053.

Conclusion

Although both bridge employment and unretirement are predicated on a worker having once retired, a characteristic that sets these labor groups apart is their level of current employment, either part-time or full-time. Due to this, we should expect to see differences between these two groups under Atchley’s continuity theory of aging. Bridge employment naturally allows for individuals to retain aspects of their work identity, while those who enter unretirement do so from a position where their initial work identity was

discontinued. The results of this paper reflect the intrinsic differences between these two groups under continuity theory. For instance, and with all else being equal, being married and having a retired spouse has a statistically significant negative relationship with both the unretirement models but neither of the bridge employment models, compared to those who are unmarried. Retirees who are married with a retired spouse may have built a larger social and family presence or role identity outside of work, i.e., with their spouse. This would, conceivably, make returning to work a less fulfilling option. In contrast, those who are not married may not have these social and familial structures or role identities and invest more into their work identities. This relationship could prove to be an appealing point for future research.

This study also finds a relationship between the employment status of a respondent's spouse and the respondents post-retirement labor status. All four models had statistically and substantively significant relationships between these variables, all else being equal. In all cases, having a spouse who was working was associated positively with the probability of the respondent engaging in bridge employment or unretirement. Coreirement is not abnormal among households with two working spouses. However, these findings suggest this preference could extend to ex-retired workers looking for coreirement. The transition to, or back to, full retirement could be made easier if former retirees have a social or familial identity to provide structure in their retirement. Although the preference for coreirement is well documented for many workers, this study contributes to the literature on coreirement by finding a relationship for this preference even after a period of initial retirement. Future research on this topic could further

examine this relationship, possibly observing the effect an initial coretirement may have on preference for a subsequent coretirement.

This study also finds results that support previous finds, such as the finds on the association between bridge employment with health and education. However, we do not observe an association between unretirement with health or education. Exploring the association between education and various forms of post-retirement labor could be an area of future research.

Lastly, several of our key variables are also statistically significant. For the most part, these findings seem to support the notion that certain careers are associated with a higher probability that a worker would invest in their work identities. Starting with industry, this paper finds those who have spent the majority of their careers working in the finance/insurance industry have a lower probability of engaging in bridge employment that those who have spent the majority of their careers working in the health care/social assistance industry. This result may partially be explained by the nature of the work, perhaps individuals who have spent the majority of their working careers in finance or insurance might be better prepared for initial retirement, both mentally and financially.

Under continuity theory, jobs with a low level of complexity or autonomy would be less likely to lead individuals to emphasize their work role identities, which would make retirement an easier prospect. However, a contributing factor, and a possible limitation of this research, could be the demand for jobs in the health care industry which was not directly controlled for. Continuity theory and older workers in health care could prove to be an interesting vein of future research.

This paper finds a similar association with job occupations as well. Compared to those who had spent the majority of their careers working in a Sales/Related occupation, those who worked in Legal occupations had a higher probability of engaging in both bridge employment and unretirement. Given the complexity, relatively fast pace, and potential for emotionally involving work, continuity theory would suggest legal workers develop a higher reliance on their work role identities than some other occupations. This effect is most significant, statistically and substantively, for unretirement. Those who enter unretirement could fundamentally be more reliant on their work role identities than those who opt to spend time in both employment and retirement. However, there are many factors occupational that can influence post-retirement labor as well. Some careers may be more flexible, or have fewer barriers to reentry, than other careers making it easier for individuals to return. It is noteworthy that Legal occupations may have comparatively more lucrative compensation and work flexibility than other occupations, making a return to some form of work a more attractive prospect for retirees from these occupations. Another factor can be macroeconomic trends, such as labor demand. Some careers may have a higher demand for workers and actively try to delay retirement or encourage recent retirees to return to some form of employment.

This paper adds to existing literature by exploring continuity theory in post-retirement labor. However, further dissecting the fundamental work-identity characteristics of these two labor groups would be the next step in this somewhat neglected area of research. From a practitioner's perspective, helping the client understand their relationship with their own work-identity could mean the difference

between a meaningful retirement and fighting off a sense of self-loss when work structures come to an end.

References

- Atchley, R. (1989). A continuity theory of aging. *Gerontologist*, 29, 183–190.
- Feldman, D. C. (1994). The Decision to Retire Early: A Review and Conceptualization. *The Academy of Management review*, 19, 285–311.
- Han, S.-K., & Moen, P. (1999). Clocking Out: Temporal Patterning of Retirement. *American Journal of Sociology*, 105, 191–236.
- Hayward, M., Friedman, S., & Chen, H. (1998). Career Trajectories and Older Men's Retirement. *Journals of Gerontology: Social Sciences*, 53, S91–103.
- Ho, J.-H., Raymo, J. M. (2009). Expectations and realization of joint retirement among dual-worker couples. *Research on Aging*, 31, 153–179.
- Hornstein, G. A., & Wapner, S. (1985). Modes of experiencing and adapting to retirement. *The International Journal of Aging & Human Development*, 21(4), 291–315.
<https://doi.org/10.2190/4NRA-2UY5-UVA3-4RPQ>
- Kalenkoski, & McCarty, S. H. (2021). In or Out or Somewhere in Between? The Determinants of Gradual Retirement. *Journal of Family and Economic Issues*, 42(2), 387–394.
<https://doi.org/10.1007/s10834-020-09734-4>
- Kim, J. E., Moen, P. (2002). Retirement transitions, gender, and psychological well-being: A life-course, ecological model. *The Journals of Gerontology: Social Sciences*, 57B, 212–222.
- Kim, S., & Feldman, D. C. (2000). Working in Retirement: The Antecedents of Bridge Employment and Its Consequences for Quality of Life in Retirement. *Academy of Management journal*, 43, 1195–1210.
- Maestas, N. 2010. “Back to Work: Expectations and Realizations of Work after Retirement.” *Journal of Human Resources* 45: 718.
- Mergenthaler, A., & Cihlar, V. (2018). Bridge Employment and Marital Quality in Germany – Different Implications for Men and Women? *Ageing international*, 43, 336–355.
- O’Rand, A. M., Farkas, J. I. (2002). Couples' retirement timing in the United States in the 1990s: The impact of market and family role demands on joint work exits. *International Journal of Sociology*, 32, 11–29.
- O’Rand, A., & Henretta, J. (1982). Delayed Career Entry, Industrial Pension Structure, and Early Retirement in a Cohort of Unmarried Women. *American Sociological Review*, 47, 365–373.
- Platts, L., Corna, L., Worts, D., Mcdonough, P., Price, D., & Glaser, K. (2019). Returns to work after retirement: a prospective study of unretirement in the United Kingdom. *Ageing and Society*, 39, 439-464. Retrieved from <http://search.proquest.com/docview/2171652136/>

- Plews, L. 2019. "Older Americans in the Workforce [Review of Older Americans in the Workforce]." United Income. <https://unitedincome.capitalone.com/library/older-americans-in-the-workforce>.
- Radl, & Himmelreicher, R. K. (2015). The Influence of Marital Status and Spousal Employment on Retirement Behavior in Germany and Spain. *Research on Aging*, 37(4), 361–387. <https://doi.org/10.1177/0164027514536403>
- Raymo, J. M., Warren, J. R., Sweeney, M. M., Hauser, R. M., & Ho, J.-H. (2010). Later-life Employment Preferences and Outcomes: The Role of Mid-life Work Experiences. *Research on aging*, 32, 419–466.
- Richardson, V., & Kilty, K. M. (1991). Adjustment to retirement: continuity vs. discontinuity. *International journal of aging & human development*, 33(2), 151–169. <https://doi.org/10.2190/6RPT-U8GN-VUCV-P0TU>
- Ruhm, C. J. (1990). Bridge Jobs and Partial Retirement. *Journal of labor economics*, 8, 482–501.
- Szinovacz, M. E. (2002). Couple retirement patterns and retirement age: A comparison of Austria and the United States. *International Journal of Sociology*, 32, 30–54.
- Szinovacz, M. (2003). Contexts and pathways: Retirement as institution, process, and experience. In G. A. A. Beehr (Ed.), *Retirement: Reasons, processes, and results* (pp. 6–52). New York: Springer.
- Wang, M., Zhan, Y., Liu, S., & Shultz, K. S. (2008). Antecedents of Bridge Employment: A Longitudinal Investigation. *Journal of applied psychology*, 93, 818–830.

Table 4.1: Descriptive Statistics of Longest held Job Industry and Bridge Employment

<i>Variable</i>	<i>Mean</i>	<i>SE</i>
Bridge Employment	0.3630	0.0149
Current Job Industry		
Agriculture/Forest/Fish/Hunting	0.0162	0.0051
Mining/Extraction	0.0048	0.0028
Construction	0.0985	0.0120
Manufacturing	0.0905	0.0115
Wholesale Trade	0.0468	0.0085
Retail Trade	0.1099	0.0126
Transportation/Warehousing	0.0194	0.0055
Information	0.0226	0.0060
Finance/Insurance	0.0436	0.0082
Real Estate/Rental/Leasing	0.0759	0.0107
Professional/Scientific/Technical Services	0.1018	0.0122
Administrative/Support/Waste Management	0.0533	0.0090
Educational Services	0.0178	0.0053
Health Care & Social Assistance	0.0969	0.0119
Arts/Entertainment/Recreation	0.0404	0.0079
Accommodation/Food Services	0.0372	0.0076
Other Services	0.1099	0.0126
Public Admin/Active Military	0.0145	0.0048
Financial Controls		
Non-Labor Income	\$ 20,328.11	\$ 727.51
Total Wealth	\$ 864,180.10	\$ 61,075.18
Demographic Controls		
Non-retired spouse	0.4523	0.0200
Female	0.4136	0.0198
Race - White	0.8209	0.0079
Race - Black	0.1250	0.0068
Race - Other	0.0539	0.0046
Age	70.2165	0.2768
Married – retired spouse	0.9564	0.0082
Health		
Excellent	0.1066	0.0124
Very Good	0.4233	0.0199
Good	0.3279	0.0189
Fair	0.1082	0.0125
Poor	0.0339	0.0073
Education		
<GED	0.1066	0.0124
GED	0.0275	0.0066

Table 4.1. Continued

High School	0.2197	0.0167
Some college	0.2585	0.0176
College & above	0.3845	0.0196

Note: Means and Standard Errors for 1,015 observations from 2010-2018 HRS.

Table 4.2: Descriptive Statistics of Longest held Job Occupation and Bridge Employment

<i>Variable</i>	<i>Mean</i>	<i>SE</i>
Bridge Employment	0.3787	0.0150
Current Job Occupation		
Management	0.0957	0.0116
Business/Financial	0.0478	0.0084
Computer/Mathematical	0.0139	0.0046
Architecture/Engineering	0.0077	0.0034
Life/Physical/Social Science	0.0154	0.0048
Community/Social Service	0.0494	0.0085
Legal Occupations	0.0185	0.0053
Education/Training/Library	0.0201	0.0055
Arts/Design/Entertainment/Sports/Media	0.0556	0.0090
Healthcare Practitioners/Technical	0.0247	0.0061
Healthcare Support	0.0062	0.0031
Protective Service	0.0093	0.0038
Food Prep/Serving	0.0154	0.0048
Building & Grounds	0.0725	0.0102
Keeping/Maintenance	0.0725	0.0102
Personal Care/Service	0.0725	0.0102
Sales/Related	0.2207	0.0163
Office/Administrative Support	0.0664	0.0098
Farming/Fishing/Forestry	0.0046	0.0027
Construction/Extraction	0.0787	0.0106
Installation/Maintenance/Repair	0.0386	0.0076
Production	0.0386	0.0076
Transportation/Material Moving	0.0278	0.0065
Financial Controls		
Non-Labor Income	\$ 20,927.91	\$ 557.62
Total Wealth	\$ 864,438.60	\$ 60,577.09
Demographic Controls		
Non-retired spouse	0.4614	0.0196
Female	0.4105	0.0193
Race - White	0.8221	0.0079
Race - Black	0.1240	0.0068
Race - Other	0.0537	0.0047
Age	69.8457	0.2775
Married – retired spouse	0.9599	0.0077

Table 4.2. Continued

Health

Excellent	0.1034	0.0120
Very Good	0.4213	0.0194
Good	0.3333	0.0185
Fair	0.1096	0.0123
Poor	0.0324	0.0070

Education

<GED		
GED	0.1019	0.0119
High School	0.0324	0.0070
Some college	0.2176	0.0162
College & above	0.2608	0.0173

Note: Means and Standard Errors for 1,043 observations from 2010-2018 HRS.

Table 4.3: Descriptive Statistics of Longest held Job Industry and Unretirement

<i>Variable</i>	<i>Mean</i>	<i>SE</i>
Bridge Employment	0.2488	0.0146
Current Job Industry		
Agriculture/Forest/Fish/Hunting	0.0165	0.0062
Mining/Extraction	0.0047	0.0033
Construction	0.0733	0.0127
Manufacturing	0.0804	0.0132
Wholesale Trade	0.0378	0.0093
Retail Trade	0.1040	0.0149
Transportation/Warehousing	0.0236	0.0074
Information	0.0142	0.0058
Finance/Insurance	0.0638	0.0119
Real Estate/Rental/Leasing	0.0686	0.0123
Professional/Scientific/Technical Services	0.1040	0.0149
Administrative/Support/Waste Management	0.0615	0.0117
Educational Services	0.0213	0.0070
Health Care & Social Assistance	0.0827	0.0134
Arts/Entertainment/Recreation	0.0378	0.0093
Accommodation/Food Services	0.0426	0.0098
Other Services	0.1560	0.0177
Public Admin/Active Military	0.0071	0.0041
Financial Controls		
Non-Labor Income	\$ 21,458.54	\$ 746.00
Total Wealth	\$ 854,074.60	\$ 70,410.24
Demographic Controls		
Non-retired spouse	0.3924	0.0238

Table 4.3. Continued

Female	0.3948	0.0238
Race - White	0.8156	0.0085
Race - Black	0.1302	0.0074
Race - Other	0.0541	0.0049
Age	71.5059	0.3544
Married – retired spouse	0.9598	0.0096
Health		
Excellent	0.1040	0.0149
Very Good	0.3783	0.0236
Good	0.3688	0.0235
Fair	0.1206	0.0159
Poor	0.0284	0.0081
Education		
<GED	0.1229	0.0160
GED	0.0331	0.0087
High School	0.2128	0.0199
Some college	0.2364	0.0207
College & above	0.3901	0.0237

Note: Means and Standard Errors for 865 observations from 2010-2018 HRS.

Table 4.4: Descriptive Statistics of Longest held Job Occupation and Unretirement

<i>Variable</i>	<i>Mean</i>	<i>SE</i>
Unretirement	0.2560	0.0148
Current Job Occupation		
Management	0.1039	0.0073
Business/Financial	0.0508	0.0106
Computer/Mathematical	0.0185	0.0065
Life/Physical/Social Science	0.0162	0.0061
Community/Social Service	0.0531	0.0108
Legal Occupations	0.0231	0.0072
Education/Training/Library	0.0277	0.0079
Arts/Design/Entertainment/Sports/Media	0.0462	0.0101
Healthcare Practitioners/Technical	0.0208	0.0069
Healthcare Support	0.0092	0.0046
Protective Service	0.0069	0.0040
Food Prep/Serving	0.0069	0.0040
Building & Grounds	0.0855	0.0134
Keeping/Maintenance		
Personal Care/Service	0.0831	0.0133
Sales/Related	0.2194	0.0199
Office/Administrative Support	0.0785	0.0129
Farming/Fishing/Forestry	0.0069	0.0040
Construction/Extraction	0.0693	0.0122

Table 4.4. Continued

Installation/Maintenance/Repair	0.0115	0.0051
Production	0.0300	0.0082
Transportation/Material Moving	0.0323	0.0085
Financial Controls		
Non-labor income	\$ 21,673.55	\$ 755.35
Total Wealth	\$ 859,748.50	\$ 70,766.88
Demographic Controls		
Non-retired spouse	0.3972	0.0235
Female	0.3949	0.0235
Race - White	0.8187	0.0086
Race - Black	0.1277	0.0075
Race - Other	0.0535	0.0050
Age	71.3741	0.3512
Married – retired spouse	0.9607	0.0093
Health		
Excellent	0.1016	0.0145
Very Good	0.3788	0.0233
Good	0.3718	0.0233
Fair	0.1201	0.0156
Poor	0.0277	0.0079
Education		
<GED	0.0046	0.0033
GED	0.1201	0.0156
High School	0.0323	0.0085
Some college	0.2148	0.0198
College & above	0.2425	0.0206

Note: Means and Standard Errors for 865 observations from 2010-2018 HRS.

Table 4.5: Marginal Effects of Longest held Job Industry on the Incidence of Bridge employment

<i>Variable</i>	<i>Marginal Effect</i>	<i>SE</i>
Current Job Industry		
Health Care & Social Assistance (Base)		
Agriculture/Forest/Fish/Hunting	-0.0002	0.1646
Construction	0.0877	0.1120
Manufacturing	-0.1197	0.1147
Wholesale Trade	0.0545	0.1346
Retail Trade	-0.0742	0.1051
Information	-0.0009	0.1370
Finance/Insurance	-0.2070*	0.0910
Real Estate/Rental/Leasing	0.0550	0.1152
Professional/Scientific/Technical Services	-0.0719	0.1143

Table 4.5. Continued

Administrative/Support/Waste Management	-0.1241	0.1225
Educational Services	-0.1247	0.1839
Arts/Entertainment/Recreation	0.0375	0.1209
Accommodation/Food Services	-0.1056	0.1469
Other Non-Public Admin Services	-0.2542**	0.1099
Other Industries	-0.4558***	0.0838
Financial Controls		
Total Wealth (\$10,000)	-0.00005	0.00003
Non-Labor Income (\$10,000)	-0.0009	0.0036
Demographic Controls		
Non-retired spouse	0.1084***	0.0227
Female	0.0017	0.0329
Race - Black	0.0194	0.0506
Race - Other	-0.0232	0.0703
Age	-0.0164***	0.0018
Married – retired spouse	0.0160	0.0412
Health		
Excellent (Base)		
Very Good	-0.0410	0.0506
Good	-0.0383	0.0287
Fair	-0.0142	0.0349
Poor	-0.0824*	0.0478
Education		
<GED (Base)		
GED	0.0878	0.0800
High School	0.1048*	0.0562
Some college	0.0947*	0.0524
College & above	0.0980*	0.0537

Note: 1,015 observations from 2010-2018 HRS. The “Transportation/Warehousing”, “Public Admin/Active-Duty Military Service”, “Mining” and “Utilities” industries was not estimable due to their small group size, these industries were added to the “Other” category. *** denotes statistical significance at the 1% level, ** denotes statistical significance at the 5% level, * denotes statistical significance at the 10% level.

Table 4.6: Marginal Effects of Longest held Job Occupation on the Incidence of Bridge Employment

<i>Variable</i>	<i>Marginal Effect</i>	<i>SE</i>
Current Job Occupation		
Sales/Related (Base)		
Management	-0.0885	0.0831
Business/Financial	-0.0441	0.1180

Table 4.6. Continued

Computer/Mathematical	-0.1217	0.1995
Life/Physical/Social Science	-0.2838**	0.1535
Community/Social Service	-0.1589	0.1942
Legal Occupations	0.1933	0.1538
Education/Training/Library	-0.0819	0.1814
Arts/Design/Entertainment/Sports/Media	0.03777	0.1082
Healthcare Practitioners/Technical	-0.0373	0.1379
Healthcare Support	0.0005	0.3574
Protective Services	-0.2334	0.1821
Building & Grounds	-0.1065	0.0958
Keeping/Maintenance		
Personal Care/Service	-0.1062	0.1231
Office/Administrative Support	-0.0099	0.0699
Construction/Extraction	0.0810	0.0950
Installation/Maintenance/Repair	0.0886	0.1045
Production	0.0960	0.1111
Transportation/Material Moving	0.2267*	0.1322
Other Occupation	-0.4207***	0.0517
Financial Controls		
Total Wealth (\$10,000)	-0.00004	0.00007
Non-labor income (\$10,000)	-0.0025	0.0037
Demographic Controls		
Married w/non-retired spouse	0.1074***	0.0228
Female	-0.0018	0.0349
Race - Black	0.0354	0.0576
Race - Other	-0.0393	0.0678
Age	-0.0165***	0.0019
Married – retired spouse	0.0096	0.0425
Health		
Excellent (Base)		
Very Good	-0.0352	0.0271
Good	-0.0367	0.0280
Fair	-0.0197	0.0339
Poor	-0.0644	0.0461
Education		
<GED (Base)		
GED	0.1050	0.0784
High School	0.1442***	0.0784
Some college	0.1394***	0.0535
College & above	0.1476***	0.0506

Note: 1,043 observations from 2010-2018 HRS. The “Food Prep”, and “Farming/Fishing” occupations were not estimable due to their small group size, these occupations were added to the “Other” category. Our sample reported no unretired workers for the “Architecture/Engineering” during these waves. *** denotes statistical significance at the 1%

Table 4.6. Continued

level, ** denotes statistical significance at the 5% level, * denotes statistical significance at the 10% level.

Table 4.7: Marginal Effects of Longest held Job Industry on the Incidence of Unretirement

<i>Variable</i>	<i>Marginal Effect</i>	<i>SE</i>
Current Job Industry		
Health Care & Social Assistance (Base)		
Agriculture/Forest/Fish/Hunting	00.1441	0.2510
Construction	0.1233	0.1584
Manufacturing	-0.2006	0.1304
Wholesale Trade	-0.1172	0.1824
Retail Trade	-0.0405	0.1306
Information	-0.2067	0.2054
Finance/Insurance	-0.0518	0.1590
Real Estate/Rental/Leasing	0.0289	0.1600
Professional/Scientific/Technical Services	0.0577	0.1403
Administrative/Support/Waste Management	-0.0481	0.1505
Educational Services	0.0783	0.2154
Arts/Entertainment/Recreation	0.1215	0.1925
Accommodation/Food Services	-0.0594	0.1843
Other Non-Public Admin Services	-0.0058	0.1843
Other Industries	-0.2773**	0.1038
Financial Controls		
Total Wealth (\$10,000)	0.000002	0.000006
Non-Labor Income (\$10,000)	-0.0028	0.0064
Demographic Controls		
Non-retired spouse	0.1177***	0.0271
Female	0.0312	0.0365
Race - Black	0.0042	0.0547
Race - Other	0.0001	0.0736
Age	-0.0045**	0.0021
Married – retired spouse	-0.0979**	0.0479
Health		
Excellent (Base)		
Very Good	-0.0248	0.0430
Good	-0.0056	0.0448
Fair	0.0108	0.0512
Poor	0.0036	0.0703
Education		
<GED (Base)		

Table 4.7. Continued

GED	0.0696	0.0906
High School	0.0042	0.0559
Some college	-0.0027	0.0545
College & above	0.0316	0.0552

Note: 865 observations from 2010-2018 HRS. The “Transportation/Warehousing”, “Public Admin/Active-Duty Military Service”, “Mining” and “Utilities” industries was not estimable due to their small group size, these industries were added to the “Other” category. *** denotes statistical significance at the 1% level, ** denotes statistical significance at the 5% level, * denotes statistical significance at the 10% level.

Table 4.8: Marginal Effects of Longest held Job Occupation on the Incidence of Unretirement

<i>Variable</i>	<i>Marginal Effect</i>	<i>SE</i>
Current Job Occupation		
Sales/Related (Base)		
Management	-0.0556	0.1009
Business/Financial	0.06035	0.1542
Computer/Mathematical	-0.1602	0.1883
Life/Physical/Social Science	-0.1338	0.1887
Community/Social Service	-0.0997	0.1225
Legal Occupations	0.4651***	0.1841
Education/Training/Library	0.2301	0.1806
Arts/Design/Entertainment/Sports/Media	0.1227	0.1572
Healthcare Practitioners/Technical	-0.1908	0.1534
Healthcare Support	0.3034	0.3016
Building & Grounds	0.1111	0.1218
Keeping/Maintenance		
Personal Care/Service	0.0127	0.1218
Office/Administrative Support	0.1114	0.1189
Construction/Extraction	0.1556	0.1341
Production	-0.0700	0.1792
Transportation/Material Moving	0.3084*	0.1906
Other Occupation	-0.2315***	0.0655
Financial Controls		
Non-labor income (\$10,000)	-0.0033	0.0064
Total Wealth (\$10,000)	-0.00000002	0.00007
Demographic Controls		
Married w/non-retired spouse	0.1150***	0.0273
Female	0.0297	0.0356
Race - Black	-0.0248	0.0550
Race - Other	0.0078	0.0801
Age	0.0053**	0.0021
Married – retired spouse	-0.1136**	0.0482

Table 4.8. Continued

Health

Excellent (Base)		
Very Good	-0.0142	0.0432
Good	0.0020	0.0446
Fair	0.0232	0.0517
Poor	-0.0281	0.0696

Education

<GED (Base)		
GED	0.0595	0.0922
High School	0.1693	0.0556
Some college	0.0334	0.0555
College & above	0.0559	0.0559

Note: 865 observations from 2010-2018 HRS. The “Architecture/Engineering”, “Food Prep”, “Protective Service”, “Farming/Fishing”, and “Installation/Maintenance/Repair” occupations were not estimable due to their small group size, these occupations were added to the “Other” category. *** denotes statistical significance at the 1% level, ** denotes statistical significance at the 5% level, * denotes statistical significance at the 10% level.
