

Are “Voluntary” Self-Employed Better Prepared for Retirement Than “Forced” Self-Employed?

Douglas A. Hershey¹, Hendrik P. van Dalen^{2,3},
Wieteke Conen⁴, and Kène Henkens^{2,5,6}

1. Department of Psychology, Oklahoma State University

2. Department of Work and Retirement, Netherlands Interdisciplinary Demographic Institute, The Hague, Netherlands

3. Department of Economics, Tilburg University, Tilburg, Netherlands

4. Utrecht School of Economics, Utrecht University, Utrecht, Netherlands

5. Department of Sociology, University of Amsterdam, Amsterdam, Netherlands

6. University Medical Center Groningen, University of Groningen, Groningen, Netherlands

ABSTRACT

When it comes to financial preparation for retirement, self-employed workers in many European countries face unique challenges not encountered by traditional wage earners. This is particularly true for self-employed workers because many self-employed individuals do not have large-scale access to employer-sponsored pensions, which are a mainstay of pension support for most workers in developed countries. In this investigation, we explored the saving practices and perceived future pension adequacy of self-employed workers aged 15–65 in Germany ($N = 702$) and the Netherlands ($N = 655$). Of particular interest for understanding saving practices was whether respondents felt that they voluntarily chose to become self-employed, or whether they felt “forced” to enter self-employment due to economic or labor market pressures. Forced self-employed individuals—some 25% of those who became self-employed out of necessity—were found to be less likely to save for retirement than their voluntary self-employed counterparts, and they envisioned a less optimistic future pension scenario for themselves. Discussion focuses on the need to change institutional practices and public policies that place self-employed individuals at a disadvantage—particularly those who are driven into self-employment based on economic pressures and a lack of opportunities in the traditional labor market.

Governments around the world are in the process of reforming their pension systems to adapt to aging populations and flexible labor markets (Whiteford & Whitehouse, 2006). Lifelong employment has become increasingly uncommon over the past two decades, and short-term contracts are becoming the dominant form of employment for younger cohorts of employees. One special category of workers is also on the rise, namely, self-employed individuals without personnel or as they are sometimes called “solo self-employed.” Their position can be particularly precarious given that they have to deal with a variety of different risks on their own. One such risk for a large majority of self-employed individuals is the lack of access to an employer-sponsored pension support program (i.e., so-called “second-pillar” support). They can be distinguished from self-employed individuals who supervise personnel as the latter often have the advantage of enrolling in a pension system organized for the benefit of their employees.

Of course, whether a self-employed individual will receive pension coverage or not depends, to a large extent, on how particular

governments structure pension insurance policies for self-employed workers. In most European countries, wage-earning employees are covered on a mandatory basis by employer-based (second-pillar) supplementary pension schemes (Bovenberg et al., 2012; Disney & Johnson, 2001). Self-employed individuals, however, are often excluded from such schemes and have to rely on private pension savings (better known as the “third-pillar” support; Holzmann, 2013). Another major difference between employees and self-employed in most countries is that whereas employees share the burden of (second-pillar) pension contributions with their employer, self-employed individuals—who prepare for retirement without the benefit of a second-tier plan—pay the full (third-pillar) retirement saving contribution from their own income. In fact, among 21 OECD countries for which there exist comparative data, on average, employees pay 37% of the total contribution to their second-tier pension plan (with the remainder paid by their employer), whereas self-employed individuals pay virtually the entire pension premium themselves (Choi, 2009). One can imagine

that self-employed individuals who have the option to join a pension scheme are the ones most likely to remain “uninsured” when their earnings are modest.

Knowledge about how self-employed individuals in different institutional settings prepare for their pension and perceive their retirement finances is scant, and much of the work that has appeared in the literature is thus far highly descriptive (Fachinger & Frankus, 2015). This article makes a start in filling this gap by examining the retirement preparation and perceived pension adequacy for two types of self-employed individuals in two countries (and in part this research fills the gaps knowledge on self-employment noted by Halvorsen & Morrow-Howell, 2016). The two types of workers we are referring to are those who are forced into self-employment and those who pursue a self-standing work arrangement on a voluntary basis. Most who enter the labor market as self-employed do so on a *voluntary* basis (hereafter referred to as “voluntary self-employed”). However, others are in one way or another forced to join the ranks of the self-employed (hereafter referred to as “forced self-employed”). This latter group is figuratively forced into self-employment in response to restrictive employment policies or economic conditions that drive them to work outside the realm of traditional paid employment. In the Netherlands, the Dutch government is of the opinion that saving for a pension should be the responsibility of self-employed individuals, and those savings can adequately be dealt with through third pillar opportunities. Furthermore, the government believes that self-employed individuals do not differ significantly from traditional wage earners in terms of retirement replacement rates—however, for self-employed individuals there is greater inequality in pension outcomes (Knoef et al., 2016; Dutch Parliament, 2015a). Approximately half of the solo self-employed individuals attain a replacement rate of 70%, a quarter of this group attain a replacement rate of 50%–70%, and the remaining quarter attain a replacement rate of less than 50%. Furthermore, the Dutch government considers the problem of so-called forced self-employment a small problem (Dutch Parliament, 2015b). That is, the government argues that this segment of the labor market is made up of only 2% of individuals who are forced by their employers to become self-employed, and 15% for whom self-employment was necessity driven (i.e., those who could not find a job as a traditional wage earner). Just seven years prior to releasing those two statistics (Dutch Parliament, 2008), the government painted a different picture, when they concluded that 1.2% of individuals were forced by their employers to become self-employed, and 3.6% of individuals entered self-employment for necessity-driven reasons. To the extent that the figures from 2008 and 2015 are correct, this suggests that the group of forced self-employed individuals has grown rapidly in a relatively short period of time, and we contend that the consequences of this growth merits an in-depth examination and thereby offers an important contribution to this debate.

Whereas necessity-driven solo self-employment thus seems to have grown considerably in the Netherlands, German solo self-employed report in general even more often “involuntary” or “necessity-based” motivations than Dutch solo self-employed (Brenke, 2013; Ybema et al., 2013)—and have done so at a rather constant level in the same time period (see Conen et al., 2016). The issue of forced self-employment has been recognized in the German public debate as a social issue that merits particular attention (see for instance, *Süddeutsche Zeitung*, February 13, 2013).

In light of the different reasons why self-employed choose to work on an independent basis, differences could very well exist in the extent to which voluntary and forced self-employees save for the future. Furthermore, we speculate that differences might exist in how these two groups of individuals perceive the quality of their post-employment financial security. We also take the scope of this investigation one step further, by making comparisons between voluntary and forced self-employed individuals who work in the Netherlands and Germany—two countries that differ in the extent to which self-employed are covered by (second-pillar) pension schemes.

This article makes three contributions to the literature. First, we focus on the question whether retirement preparedness differs across self-employed individuals who attained this status on a voluntary basis, compared to those who became self-employed by a forced route. By focusing on the group of self-employed and their financial preparedness for retirement we broaden the psychological research base on financial planning which traditionally is focused on individuals in regular employment (Croy et al., 2010; Hershey & Mowen, 2000; Van Dalen et al., 2010). Second, we use socio-demographic as well as psychological determinants to uncover the propensity to save and perceived pensions savings adequacy among self-employed individuals without personnel. By doing so, we hope to provide insights into a scanty investigated topic, namely, retirement preparation among the self-employed without personnel. Third, this study provides a broad, cross-national empirical base by analyzing data from 1,357 self-employed individuals in Germany and the Netherlands.

The organization of the remainder of this article is as follows. First, we provide background information on the rise of self-employment in general, but more specifically, on the situation as it relates to Germany and the Netherlands. Next, we discuss the factors that play a role in leading individuals to engage in (forced or voluntary) self-employment and financial planning for retirement, which allows us to derive the central hypotheses of interest. After that we describe the methods and data, which is followed by presentation of the empirical results. Notably, in this section we describe the probability of pension savings and perceived pension adequacy scores as a function of various socio-demographic and psychological determinants. The article concludes with a summary of findings, as well as a discussion of the theoretical and public policy implications of this study.

SELF-EMPLOYMENT IN GERMANY AND THE NETHERLANDS

Over the past two decades there has been an increase in the number of self-employed without personnel in several European countries (Hatfield, 2015). While self-employment has long been associated with agriculture (e.g., farmers) and the retail trade (e.g., shopkeepers), the recent growth in self-employment now finds self-employed individuals working a variety of occupations and industry sectors. The “new” self-employed are coaches, public relations officers, clerical workers, interim managers, and consultants. Self-employed individuals can also be found among the ranks of bricklayers, carpenters, truck drivers and home care workers.

When it comes to the self-employed without personnel, the Netherlands constitutes an interesting case. No other European country has shown such a large increase in the number of self-employed without personnel over the past 10 years (Figure 1). Whereas the

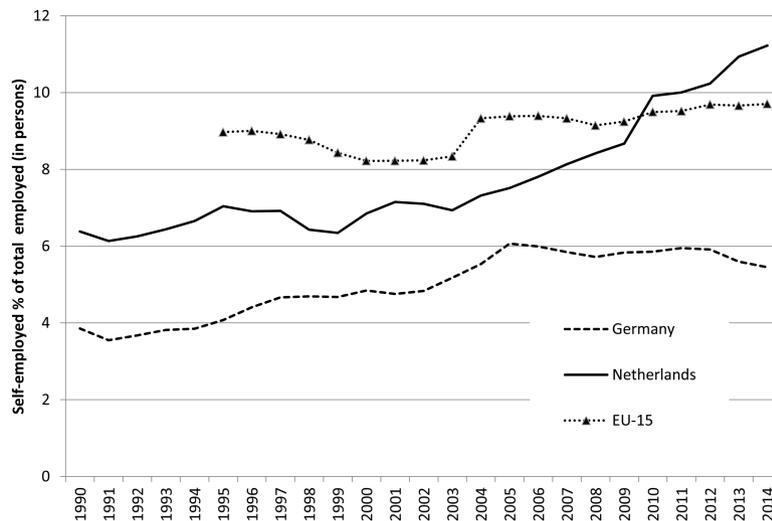


Figure 1. Development of self-employed (with no personnel) 1990–2014 for Germany, the Netherlands, and the EU-15 (as percentage of total employment, in persons). Source: Eurostat (2015).

Netherlands has a relatively flexible labor market and an economy that is strongly orientated toward trade and commercial services, the German labor market faces similar tendencies (Eichhorst & Marx, 2011), although it is still more oriented toward industrial sectors. Furthermore, the self-employed in the Netherlands are far more likely than their German counterparts to work on a part-time basis.

Germany has also shown a strong increase in the number of solo self-employed (Brenke, 2013), but this increase has been more moderate than it has been in the Netherlands. The percentage of self-employed without personnel grew notably in Germany between the years 2002–2005, and then plateaued somewhat after that (Figure 1). Growth in self-employment in the Netherlands started around the same time (2002), but as seen in the figure, the growth pattern has yet to show an extended plateau or reversal.

In the Netherlands, both wage-earning employees and self-employed individuals are covered by the public pension system (referred to as “AOW”). In this system, both wage-earners and self-standing workers make equal contributions during their working lives, and both can expect to receive equivalent benefits upon retiring (As of January 2016, a gross benefit of 1,138 euros/month is received by single individuals, and 784 euros/month is received by each member of a couple.). There are some groups of Dutch self-employed individuals who have mandatory occupational pension schemes (e.g., doctors, lawyers, pharmacists), but in most instances, these self-employed workers oversee subordinate personnel. It is rarely the case that self-employed individuals *without personnel* within these specific professions participate in a collective pension arrangement. The main argument why it is difficult to organize this at a collective level is that a clear categorization of professions or trades is difficult to make in order to force self-employed individuals to join collective pension arrangements (although there are some professions where this is possible, such as painters and plasterers). At the time of the survey, there did not exist any collective pension schemes in the Netherlands for the self-employed. The only way the self-employed can finance their pension is by purchasing individualized pension products from private insurance companies, banks, or investment companies, which leaves little in the way of room for collective risk sharing.

Germany is in some ways comparable to the Netherlands in terms of pension resources, inasmuch as there is no general second pillar coverage for self-employed German workers (Fachinger & Frankus, 2015). One difference between the two countries, however, involves first pillar support. In Germany, a large number of freelance workers are not covered by the mandatory insurance schemes sponsored by the state (Fachinger & Frankus, 2015, p. 137). When individuals are not entitled to a contribution-based pension or their entitlement is below a certain defined threshold of minimum income, they rely on safety-net benefits in the form of a means-tested social assistance program. These entitlements are arranged differently in the Netherlands, where all residents are covered by the first-pillar public pension scheme. However, Germany has more second pillar options available to self-employed individuals compared to the Netherlands. For quite a number of self-employed Germans, there exist collective pension schemes designed to help ensure late life financial security. For instance, craftsmen (who are entered in the register of artisans) and journalists are covered by a general pension fund for employees. Another example includes self-employed artists and members of the publishing professions (e.g., writers), who during their first 5 years in the profession pay contributions to the Artists Social Welfare Act. They only pay half of the contribution themselves, the remainder is paid by their client(s) (30%) and the government (the remaining 20%) (Fachinger & Frankus, 2015). Finally, self-employed individuals who are members of professional chambers—such as doctors, lawyers and architects—are required to join the second tier pension schemes of their respective chambers.

In conclusion, whereas both countries share many similarities with respect to self-employment, the institutional arrangements and the policy stance toward self-employed individuals differ somewhat. In the Netherlands, the pension income of self-employed individuals is highly dependent on the extent to which self-standing workers take up the individual responsibility to save, whereas in Germany, pension provisions and legal rules are such that part of the self-employed are on a more equal footing with wage-earners. In the Netherlands, this inequality has a pronounced effect, with self-employed individuals experiencing reductions in replacement rates of up to 60% relative to the average

Dutch employee (Choi, 2009). This retirement income gap is only closed in cases in which Dutch self-standing workers save substantial sums of money in private pension plans during their working years.

SELF-EMPLOYMENT AND RETIREMENT PREPARATION

Influence of Self-Employment Status on Saving and Pension Adequacy

The decision to enter the ranks of the self-employed is not one that is typically taken lightly, particularly in light of the large investment in time, energy, and other resources that are required to establish oneself in business. Individual determinants of (voluntary) entry into self-employment has been studied extensively (Blanchflower, 2000; Hamilton, 2000; Simoes et al., 2015; Taylor, 1996). A number of different motives exist for becoming self-employed, including the desire to: (a) take on a new challenge, (b) experience greater work autonomy, (c) work for oneself as opposed to working for a boss, (d) take advantage of a business opportunity, (e) earn a higher income than could be earned as a traditional wage earner, (f) supplement one's income from regular employment, and (g) have flexibility that would allow one to better balance work and family obligations. Collectively, these opportunity-based factors have been referred to as "pull factors" (Falco & Haywood, 2016), as they are enticements that serve to pull the individual into self-employment. Typically, those swayed by pull factors view their decision to enter self-employment as being of a voluntary nature and this may affect financial preparation in a positive manner. Indeed, work by Heraty and McCarthy (2015) among older workers shows that those workers have positive beliefs about their ability to control aspects of aging, are also more likely to financially plan for retirement.

Other individuals, in contrast, make the decision to become self-employed out of necessity (Kautonen et al., 2010). Some find it difficult to find a suitable job as an employee in paid employment. Others consider self-employment as a last resort in order to gain income. Still others make the transition to self-employment because they work for an organization that encourages them to provide services as an independent contractor. These three necessity-based factors (among others) have been described as "push factors," as they figuratively push the individual out of the traditional employment market and into a freelance arrangement (Hofstede et al., 2004). In light of the economic and psychological pressures brought about by push factors, those who choose to work autonomously often feel forced into that particular employment status. In the present investigation, we make a distinction between those who voluntarily choose self-employment on the basis of pull factors, and those who are figuratively forced to become self-employed due to one or more push factors.

Furthermore, we assume that the push and pull factors described above are selective with respect to the skills and resources self-employed individuals have at their disposal. Those pulled into self-employment are (relatively) better situated to take on the responsibility of risks associated with running a private enterprise. Therefore, on that basis, they could be better prepared to assume the responsibilities associated with saving for their future. Moreover, among those pushed into self-employment, it is possible that some who were laid off might not be predisposed to save, because they have expectations of returning to their status of a wage earner with pension rights.

In light of the preceding discussion, we propose the following hypothesis:

Hypothesis 1- Push and pull forces: Individuals who enter self-employment on voluntary basis will be more likely to save for retirement and evaluate their future pension as adequate relative to individuals who are forced into self-employment.

Socio-Demographic Influences on Saving and Pension Adequacy

Of course, the extent of one's financial preparations for retirement is not solely dependent on self-employment status (voluntary/forced), but also on one's socio-demographic make-up. It is well documented in the economic literature (Deaton, 1992; Hurd, 1990) how age, gender, income from work, education and household position are factors that come into play into understanding and explaining retirement savings and its adequacy (Lusardi & Mitchell, 2007).

To start with the element of age, those who are old or middle-aged are presumably more likely than the young to save because they recognize that the retirement transition is becoming increasingly near. Indeed, age represents a proxy for where one stands in life in relation to the normatively anticipated age-linked transition out of the workforce (Ekerdt et al., 2000).

Second is the element of gender. Empirical research has shown how gender impacts financial preparedness. For instance Noone, Alplass, and Stephens (2010) show for the case of New Zealand how women are still economically disadvantaged compared to men and this impacted negatively on their financial preparations. And this finding is relatively robust for other western countries (Lusardi & Mitchell, 2008, 2011).

Third, workplace-linked economic factors (level of income, part-time/full-time position) have most commonly been used to explain the gender gap in saving and pension adequacy—that is, women, on average, tend to earn lower wages than men and they are more likely to experience discontinuous work histories due to childbearing and family support obligations (Quadagno, 1988; Speelman et al., 2013; Ståhlberg et al., 2005). This combination of factors effectively limits the retirement savings and pension benefits women can expect to amass relative to men.

Fourth, educational attainment has also been shown to be linked to saving and pension adequacy, largely due to the fact not only because the more highly educated tend to earn higher salaries, and thus, are more likely to have discretionary resources to save and invest but also because they tend to have a higher level of financial literacy (Lusardi & Mitchell, 2007).

Finally, the household composition is of some importance in understanding retirement savings. For example, single women are often a vulnerable group in terms of pension savings, a fact which is tied to the labor market history of women (Alessie et al., 2011; Knoef et al., 2016).

On the basis of the preceding discussion we propose the following hypothesis:

Hypothesis 2 - Socio-demographic profile: Individuals who due to socio-demographic factors (i.e., higher age, men, higher educational level, full-time position, those with a partner and those having supplementary pension rights) are economically better off will be more likely to save and consider their future pension income to be adequate.

Psychological Influences on Saving and Pension Adequacy

In addition to the set of socio-demographic factors described above, a variety of psychological constructs have been shown to be related to saving and pension adequacy.

Of relevance to the present investigation, we first expect to find that individuals with higher levels of risk tolerance are more likely to save for retirement and have superior pension adequacies. This is because those with a higher risk tolerance level have been shown to be more likely to save (and invest more aggressively) for retirement relative to those who are risk averse (Fisher & Anong, 2012; Jacobs-Lawson & Hershey, 2005; Jamaludin & Gerrans, 2015; Yao et al., 2005). On that basis, a risk tolerant individual can typically expect to amass a larger retirement savings nest egg.

Second, knowledge of retirement finances and investing, as well as a related construct—financial literacy—have also been shown to be positively related to saving and pension adequacy (Dhaliwal & Chou, 2007; Howlett et al., 2008; Lusardi & Mitchell, 2011; Segel-Karpas & Werner, 2014). Presumably, this is because those with higher levels of domain-specific knowledge are more likely to possess saving and investment strategies that maximize long-range financial outcomes. Adaptive financial strategies include, for example, starting to save early in adulthood in order to take advantage of the power of compounding, selecting investments that are appropriately diversified in terms of risk and reward, and conducting regular retirement needs assessments over the course of one's working life to ensure that saving levels match anticipated future financial needs.

Third, having a set of clear retirement goals is a cognitive psychological dimension that has also been demonstrated to be linked to saving for retirement and future pension adequacy (Fisher & Anong, 2012; Stawski et al., 2007). This is the case because high levels of retirement goal clarity help individuals formulate an appropriate retirement income replacement rate and how much income will be needed during the post-employment years, and on that basis, how much will need to be allocated to savings on an ongoing basis. According to Austin and Vancouver (1996), formulating clear and achievable (financial saving) goals is an important precursor to goal striving activities (see also Hershey et al., 2013 on this point).

The last of the four psychological independent variables we will examine as part of this investigation is future time perspective, which is a personality trait dimension that captures the extent to which an individual enjoys thinking about the future, as opposed to the present or past (Hershey & Mowen, 2000; Kopusko et al., 2016; Zimbardo & Boyd, 1999). Having a "long" future orientation to time is important in the retirement saving domain because it has been shown to facilitate the formulation of financial goals and the acquisition of financial knowledge (McCullough, 2012). Thus, consistent with findings from other studies (Earl et al., 2015; Howlett et al., 2008; Jacobs-Lawson & Hershey, 2005), in this investigation we expect to find that individuals with a long future time perspectives will be more likely to have saved for retirement, and have superior perceived pension adequacy levels.

On the basis of the preceding discussion we propose the following hypothesis about the psychological predisposition of self-employed:

Hypothesis 3 - Psychological predisposition: Individuals who are psychologically predisposed to anticipate their financial resource needs (i.e., high risk tolerance, high financial knowledge, high retirement goal clarity, long future time perspective) will be more likely to save for retirement and view their future pension as adequate.

METHOD

The data collection effort was carried out in 2014 by the TNS-NIPO research agency using computer-assisted web interviewing (Conen et al., 2016). At the country level, random samples were drawn from Dutch and German panelists who are registered as being solo self-employed (i.e., without the responsibilities of supervising subordinate personnel), with checks to approximate a 60–40 (male–female) distribution on gender, which is the prevalent distribution among self-employed in the Netherlands and Germany. A screening question was posed at the beginning of the interview that was designed to ensure that each respondent was still working in a self-employed capacity. Some 757 German and 793 Dutch respondents submitted completed questionnaires (total $N = 1,550$). The response rate was 19% in Germany and 40% in the Netherlands. The response rate in Germany is uncorrected for the number of "bounced" emails and cannot be compared to Dutch response rate which was corrected for such ineligible non-responders. Given that survey setups in both countries were identical, the effective response rate among eligible German participants is likely to be closer to the Dutch response rate of 40%. Furthermore, a similar survey about self-employed in Germany based on the German Socio Economic Panel (SOEP) data (Brenke, 2013) shows outcomes which are in line with the German data reported in this article. Hence our sample seems to give a reliable picture of the German situation despite the low uncorrected response rate. A final note on the data concerns the fact that individuals who reported being over the age of 65, who were retired, or who reported holding a second job as a paid employee were eliminated from the dataset, which reduced the sample to 1,357 individuals. The final sample ranged in age from 15 to 65 years. Detailed demographic characteristics for each of these four groups, as well as country-level data collapsed over self-employment status, are reported in Table 1.

Measures

Dependent variables

The first dependent variable is an indicator of whether individuals had taken steps to save for old age. Specifically, respondents were asked to provide a yes, no, or don't know response to the following statement: "I have taken additional measures (e.g., savings, life insurance or other investments) to generate more income in old age in order to supplement my pension income." Responses were coded dichotomously (0 = no; 1 = yes). Those respondents who answered "don't know" (2.7%) were excluded from the analyses.

The second dependent variable measures perceptions of future pension adequacy. Specifically, participants were asked to respond to the following statement: "My pension savings and other sources of income are sufficient to live comfortably after retirement." Responses to this item were made using a 5-point Likert-type scale (1 = completely disagree; 3 = neither agree nor disagree; 5 = completely agree).

Self-employment status

An indicator was used to classify the self-employment status of individuals. Self-employed work status was designed to capture whether individuals felt that they voluntarily chose to become self-employed or whether they were forced to engage in self-employment. Toward this end, they were asked the three following questions:

- (1) "I could not find a suitable job as an employee in paid employment,"

Table 1. Demographic and Psychological Characteristics of Respondents by Country (Percentages and Means With SDs in Parentheses)

	Voluntary Self-employed	Involuntary Self-employed
Socio-demographic variables		
Age (years)	50.2 (9.44)	52.2 (8.98)
Gender (Pct. male)	59.4	60.1
Education (years)	15.9 (2.76)	15.5 (2.84)
Household income (euros × 1000)	47.2 (24.0)	37.7 (23.6)
Hours worked/week (actual)	39.2 (15.8)	38.9 (16.5)
Supplementary pension rights (Pct.)	52.8	44.9
No partner (Pct.)	24.9	34.3
Working partner (Pct.)	59.1	49.3
Non-working partner (Pct.)	16.0	16.4
Psychological variables		
Risk tolerance (10 pt. item)	7.03 (2.00)	6.40 (2.35)
Financial knowledge (5 pt. scale)	3.31 (0.74)	3.22 (0.84)
Retirement goal clarity (5 pt. scale)	2.64 (0.85)	2.74 (0.97)
Future time perspective (5 pt. scale)	3.22 (0.85)	2.82 (0.97)
N	1,016	341

- (2) “Self-employment was my last resort to gain income,” and
 (3) “My employer wanted me to work as self-employed.”

Response options were as follows: (1 = *did not play a role*, 2 = *played a role to a small extent*, 3 = *played a role to some extent*, 4 = *played a role to a large extent*). Because the items potentially point to different dimensions of forced self-employment an individual scoring a value of 4 for one or more of the three statements they were classified as being “forced” into self-employment. Some 341 individuals (25.1% of the sample) endorsed at least one of the three statements. The remainder of the sample ($n = 1,016$, 74.9%) were classified as voluntary self-employed.

Socio-demographic indicators

Seven socio-demographic variables were used to explain retirement savings and perceived pension adequacy including respondents’ age, gender (0 = female; 1 = male), number of years of formal education, household gross income (measured in 1000s of euros), number of hours worked per week, whether they held supplementary pension rights from previous paid employment (0 = *no*; 1 = *yes*), and partner status with as reference category no partner, whether one’s spouse or partner was engaged in paid employment = 1, whether one’s spouse or partner does not work in paid employment = 2.

Household gross income was measured in seven income bands from low (<12.5K euros/year) to high (>78.5K euros/year). These seven values were subsequently recoded into euro amounts based on the midpoint of each band. Item non-response was negligible among the set of demographic indicators, except for the household income variable (missing = 13.3%). To maintain the sample size in the regression analyses reported below, missing values for income ($n = 195$)

were set to the mean of the distribution and a dummy indicator was created for use in the regression models to reflect “income is missing” (0 = *valid response*; 1 = *missing*). Use of this variable allowed us to maintain full ranks in the multiple and logistic regressions. Finally, an indicator was used to classify the country of origin of individuals and it was coded dichotomously (0 = *Germany*; 1 = *the Netherlands*).

Psychological indicators

General risk tolerance was assessed using a single-item indicator that involved a response to the following statement: “How do you see yourself: Are you generally willing to take risks (risk-prone), or do you try to avoid risks (risk-averse)?” Answers were recorded using a 10-point response scale (1 = *risk-averse*; 10 = *risk-prone*) (Dohmen et al., 2011). Due to data panel limitations, a subset of items were drawn from existing published scales to measure financial knowledge, retirement goal clarity, and future time perspective. Self-assessed financial knowledge was measured using three statements that employed a 5-point (1 = *strongly disagree*; 3 = *neither agree nor disagree*, 5 = *strongly agree*) Likert-type response format. The items drawn from the Hershey and colleagues (2007) self-rated financial knowledge scale included: “I am very knowledgeable about financial planning for retirement,” “When I have a need for financial services, I know exactly where to obtain information on what to do,” and “I know more than most people about retirement planning” (Cronbach’s $\alpha = .72$).

Retirement goal clarity was assessed using the following three items drawn from the 5-item goal clarity measure by Hershey and colleagues (2007): “I have thought a great deal about life after retirement,” “I have a clear vision of how life will be in retirement,” and “I have set specific goals for how much will need to be saved for my retirement” ($\alpha = .73$). The response scale for these items was the same as the 5-point scale described in the preceding paragraph.

Finally, future time perspective was measured using two items drawn from the 6-item time perspective measure employed by Hershey and colleagues (2007): “The distant future seems very vague and uncertain to me” and “I pretty much live on a day-to-day basis,” (both items reverse coded; Spearman Brown = .53). These items also used the 5-point (*strongly disagree/strongly agree*) Likert-type response format. Table 1 reports the means and SDs for the demographic and psychological predictor variables for the voluntary and involuntary self-employed.

Analytic Strategy

The analytic goals of this study are straightforward. First, we examine the reasons some respondents gave as to why they felt forced to be self-employed. Second, saving and perceived pension adequacy scores are examined as a function of self-employment status (voluntary/forced). Third, we test two regression models—a hierarchical binary logistic regression model in which retirement saving is the criterion, and a hierarchical multiple regression model in which perceived future pension adequacy is the dependent variable. In both models, a set of eight socio-demographic indicators and four psychological variables serve as covariates in addition, of course, to the self-employment status.

RESULTS

Forced Versus Voluntary Self-Employment and Financial Preparedness for Retirement

Before testing the central hypotheses, we first want to present some descriptive statistical results to obtain a better grip on the central

variable: the type of self-employed. We first present the reasons some respondents gave as to why they felt forced to be self-employed. In Table 2, the answers to the various questions on which our self-employment status is constructed are summarized both as a function of respondents' country and for the full sample.

Examination of the reasons individuals gave for engaging in self-employment (see top panel, Table 2), revealed that some 18% of all study participants indicated they could not find suitable employment in paid work and nearly 17% reported self-employment was their last resort to gain income. Only a small percentage of all study respondents (1.7%) indicated they worked in a self-standing capacity based on pressure from their employer. Three separate two-tailed tests of independent proportions revealed that the percentage of the full sample that endorsed each of these three items differed as a function of country of origin. Specifically, a larger proportion of Germans endorsed each of the three items more frequently than the Dutch self-employed (all three tests $p \leq .01$). The reasons to being forced into self-employment point to different dimensions of forced self-employment that not necessarily have a high correlation. Therefore, we classified respondent as forced self-employed if they scored on at least one of the indicators of forced self-employment displayed in the top panel of Table 2.

The bottom panel of Table 2 summarizes item-level data only for those respondents who were classified as being forced self-employed. Perusal of the far-right column (bottom panel) reveals that nearly three-quarters (73%) of those who felt forced into self-employment indicated they were unable to find suitable employment in paid work. Some two-thirds (67%) of respondents reported that self-employment was their last resort to gain income. Fewer than 5% of respondents indicated they transitioned into self-employment at the behest of their employer.

To see how the dependent variables describing the financial preparedness of individuals and central explanatory variable of interest—self-employment status—are related, a 2 (Country: German/Dutch) \times 2 (self-employment status: voluntary/forced) analysis of variance (ANOVA) was computed to probe for mean differences in saving for old age. Mean scores for the retirement saving question (Figure 2) revealed that 72% of voluntary self-employed in Germany indicated they were saving (or had saved), compared to 53% of forced German self-employed. Comparable figures for the Netherlands revealed similar differences—70% of voluntary Dutch self-employed indicated they were saving, compared to 58% of forced Dutch self-employed.

Figure 3 shows the descriptive results of the perceived savings adequacy in the two countries for forced and voluntary self-employed. The figure shows that 32% of voluntary self-employed in Germany perceived their pensions as adequate (by “agreeing” or “strongly agreeing” with the “able to live comfortably in retirement” question), compared to 20% of forced German self-employed. Comparable figures for the Netherlands revealed similar differences—38% of voluntary Dutch self-employed perceived their pensions to be adequate, compared to 24% of forced Dutch self-employed.

Testing Hypotheses

Regression analyses are employed to determine the extent to which the self-employment status (push/pull hypothesis), socio-demographic (socio-demographic profile hypothesis), and psychological variables (psychological predisposition hypothesis) could account for variation in reported (a) retirement savings and (b) perceived future pension adequacy. For the former dependent measure, a three-level binary logistic regression model was estimated. Specifically, country of origin and socio-demographic variables were entered as predictors in the first block, followed by psychological measures in the second block, and the self-employment status in block three. The same three sets of predictors were also used to model pension adequacy scores, however, given the continuous nature of the criterion, a hierarchical linear multiple regression approach was employed. Prior to conducting the analyses, all data distributions were checked for skew, kurtosis, outliers, and other possible distorting conditions that may violate the basic assumptions of general linear model statistics. In this regard, no unusual distributional properties were identified.

Pension savings

The first block in Table 3 suggest that the socio-demographic factors often encountered in social economic research matter. The likelihood of saving for retirement was shown to be associated with: being more highly educated, having a larger household income, and having supplementary pension rights (all $p < .01$). Furthermore, one can see by the country dummy that the self-employed in the Netherlands are less likely to save for retirement compared to similar Germany self-employed. The second block shows that once psychological variables are added to the model, the explanatory psychological make-up of self-employed is substantial, in particular self-reported financial knowledge and the future time perspective (both $p < .01$). The higher the level of financial knowledge and the more future oriented self-employed

Table 2. Percentage of Respondents Who Endorsed One or More Items to Indicate They Were Forced into Self-employment

Item	German Respondents	Dutch Respondents	All Respondents
All participants			
I could not find suitable employment in paid work	21.5	15.0	18.3
Self-employment was my last resort to gain income	20.2	13.3	16.9
My employer wanted me to work in a self-employed capacity	2.6	0.8	1.7
Only participants classified as forced self-employed			
I could not find suitable employment in paid work	71.9	74.8	73.0
Self-employment was my last resort to gain income	67.6	66.4	67.2
My employer wanted me to work in a self-employed capacity	5.2	3.1	4.4

Note. All participants (top panel) and those classified as forced self-employed (bottom panel). Items in columns do not sum to 100% because individuals could endorse more than one reason for engaging in forced self-employment.

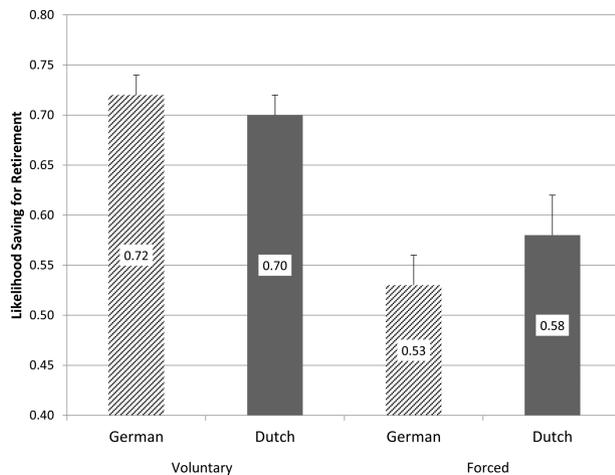


Figure 2. Likelihood that respondents save for retirement and standard errors shown as a function of self-employment status and country of origin.

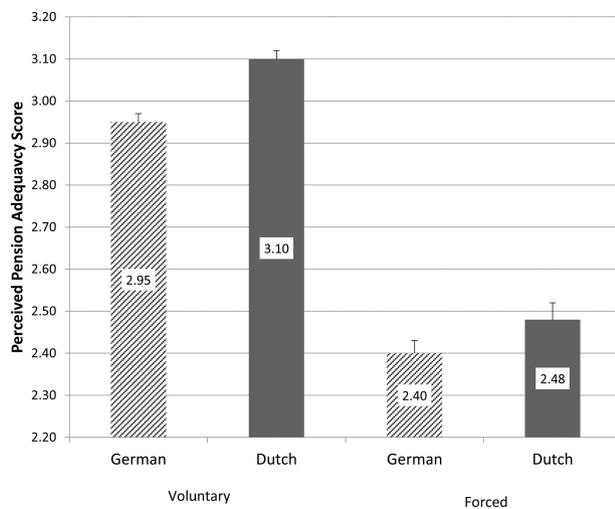


Figure 3. Perceived pension adequacy scores and standard errors shown as a function of self-employment status and country of origin.

are, the more likely it is that they save for their retirement. Retirement goal clarity is of lesser importance compared to previous two variables. Odds ratios revealed that a one-unit increase in financial knowledge resulted in a 45% increase in the likelihood of having saved for retirement, a one unit increase in retirement goal clarity resulted in a 25% increase in the likelihood of saving, and a comparable increase in time perspective was linked to a 58% increase in the likelihood of saving. The variable risk tolerance is of no significant importance.

Taken together, the Pseudo R^2 for the full model was over 17%.

The far right column offers the comprehensive test for hypotheses with respect to the likelihood of saving for retirement. The Push/pull hypothesis concerning the effect of self-employment status and the psychological predisposition hypothesis concerning the psychological make-up of self-employed are clearly supported. It matters whether you enter into self-employment on a voluntary or forced basis, with those feeling forced into self-employment saving far less than those

who enter on a voluntary basis. And financial knowledge, retirement goal clarity and future time perspective are of significant importance. The socio-demographic profile hypothesis concerning the importance of socio-demographic factors is only weakly supported: of all variables listed the household income variable is the only one that positively predicts the likelihood of saving for retirement when psychological variables are included in the model. Country specific results are presented in [Appendix A](#).

Perceived pension adequacy

Future pension adequacy served as the criterion in the hierarchical multiple regression analysis shown in [Table 4](#). The first hierarchical level shows that five of the eight socio-demographic predictors surpass the .05 significance level. Specifically, higher perceived pension adequacy was indicated by those who were older, male, those with a higher household income, respondents who worked fewer hours per week, and those with supplemental pension rights from previous paid employment.

The second block shows that adding psychological variables to the model improves the model significantly (the adjusted R^2 increases with 13 percentage points). This time all the items capturing self-reported financial knowledge, retirement goal clarity and the future time perspective are significant (both $p < .01$) and, just like in the case of retirement savings presented in [Table 3](#), future time perspective has the largest impact on perceived pension adequacy. Significantly larger future pension adequacy ratings were made by those who had higher levels of financial knowledge, clearer retirement goals, and a longer future time perspective.

Once the variable describing the self-employment status is added to the model in the last column the full model generates very little additional predictive power to the model. However, the sign of the coefficient is in line with a priori expectations: being forced into self-employment generates the expectation that the pension savings of that particular group will be considered less adequate compared to the group of voluntary self-employed. However, the size effect is small.

What do these results reveal about our hypotheses with respect to pension income adequacy? Compared to the analysis of retirement savings we can say that all three hypotheses are supported by data. Those who feel that their status as self-employed is more or less forced perceive their pension as slightly less adequate compared to those who see their status as voluntary (push/pull hypothesis). Those with a higher household income and supplementary pension rights in general perceive their future pension income to be more adequate than those who belong to the lower income classes and consequently supplementary pension rights are few or absent (socio-demographic profile hypothesis). And those who are forward looking, think that they possess sufficient financial knowledge and clear retirement goals are more apt to consider their future pension adequate than those who lack those characteristics (psychological predisposition hypothesis). Country specific regression analyses are presented in [Appendix B](#).

To probe for the possibility of interaction effects in predicting the likelihood of pension savings and pension adequacy, two other regression models were estimated that were modeled after those reported above. Specifically, several interaction effects were examined between self-employment status and each of the predictors reported to be statistically significant in [Tables 3](#) and [4](#). All two-way interaction effects were entered into two new logistic (pension savings) and multiple

Table 3. Three Logistic Regression Models Predicting Retirement Savings

Covariate	Demographic Variables		Demographic and Psych. Variables		Full Model	
	OR	<i>p</i> -value	OR	<i>p</i> -value	OR	<i>p</i> -value
Socio-demographic variables						
Age (years)	1.01	.13	1.01	.15	1.00	.69
Gender (0 = female)	1.08	.55	1.00	.89	1.03	.81
Education (years)	1.11**	.01	1.11**	.01	1.01	.15
Household income (×1000)	1.03**	.01	1.03**	.01	1.02**	.01
Household income (missing)	1.03	.87	1.04	.84	1.03	.89
Hours worked/week	1.00	.45	1.00	.43	1.00	.45
Supplementary pension rights	1.54**	.01	1.26	.10	1.26	.10
No partner (reference)						
Working partner	0.97	.83	.93	.65	.92	.60
Non-working partner	0.83	.36	.76	.19	.75	.18
Country (0 = Germany; 1 = Neth.)	0.74*	.03	.99	.93	.94	.67
Psychological variables						
Risk tolerance			.95	.14	.94	.07
Financial knowledge			1.45**	.01	1.45**	.01
Retirement goal clarity			1.23*	.05	1.25**	.01
Future time perspective			1.65**	.01	1.58**	.01
Push/pull variables						
Self-employed (0 = Vol; 1 = Forced)					.65**	.01
Constant	0.05**	.01	.01*	.01	.01	.01
Pseudo R ²	.107		.162		.166	
χ ²	178.6 (df = 10)		270.3 (df = 14)		278.1 (df = 15)	

Note. *N* = 1,357. OR = odds ratio.

p* < .05. *p* < .01.

regression (pension adequacy) models in a fourth hierarchical step. However, the results of this analysis failed to shed light on the antecedents of pension savings and pension adequacy over and above what was previously found and reported in Tables 3 and 4.

DISCUSSION

The purpose of this investigation was to explore the pension adequacy and saving practices of Dutch and German self-employed workers. A central focus of the research was to examine whether differences in these two dependent measures exist as a function of whether respondents voluntarily entered the ranks of the self-employed, or whether they felt forced to work in a self-standing capacity.

One major finding and contribution from the study was that an appreciable number of self-employed individuals in both countries felt forced to work for themselves: 25.1% of respondents felt forced to work in a self-employed capacity. Importantly, this percentage differed appreciably as a function of country of origin, with the forced self-employment rate being some 50% higher in Germany (29.9%) than it is in the Netherlands (20.0%). Necessity-based motives for working in self-employment included the inability to find suitable employment as a wage-earner and the feeling that self-employment was a “last resort” to gain income. Only a small number of workers in either country (0.8% in the Netherlands and 2.6% in Germany) indicated that they were forced into self-employment at the behest of their (former)

employer. These findings suggest that those who feel driven into that employment sector might not be the best qualified candidates, in light of the fact that many were unsuccessful at finding work as traditional wage earners. Perhaps more important is the fact that these percentages—relative to the figures previously released by the Dutch government (Dutch Parliament, 2008, 2015b)—suggest the government may be underestimating the forced self-employment phenomenon, as this group seems to be growing.

Secondly, this study shows how self-employment status (forced/voluntary) impacts retirement saving rates and expectations of future pension adequacy. Specifically, those who voluntarily chose to enter the ranks of the self-employed were more likely to report having saved for retirement, and they envisioned a more comfortable pension situation for themselves. As a group, voluntary self-employed individuals exhibited a saving rate that was over 15 percentage points higher than those forced into self-employment. In this analysis, no country-level differences were observed. A similar advantage of voluntary self-employment was seen among the data for perceived future pension adequacy, with the mean score for forced workers being one-half of a standard deviation lower than the mean for voluntary workers. A main effect for country of origin emerged in this analysis, with Dutch self-employed workers perceiving their future pension adequacy to be slightly better to that of Germans. Taken together, these two sets of findings indicate that the factors that motivate individuals to engage

Table 4. Three Hierarchical Ordinary Least Squares (OLS) Regression Models Predicting Perceived Future Pension Adequacy

Covariate	Demographic Variables		Demographic and Psych. Variables		Full Model	
	β	<i>p</i> -value	β	<i>p</i> -value	β	<i>p</i> -value
Socio-demographic variables						
Age (years)	.07**	.01	.02	.41	.03	.69
Gender (0 = female) ^a	.12*	.03	.05	.34	.05	.81
Education (years)	-.01	.66	-.03	.21	-.03	.15
Household income (×1000)	.32**	.00	.20**	.00	.19**	.01
Household income (missing) ^a	.15*	.04	.15*	.02	.14	.89
Hours worked/week	-.06*	.03	-.07**	.01	-.07	.45
Supplementary pension rights ^a	.36**	.00	.23**	.00	.22	.10
No partner (reference)						
Working partner ^a	-.06	.30	-.07	.21	-.08	.60
Non-working partner ^a	.11	.19	.07	.33	.07	.18
Country (0 = Germany; 1 = Neth.) ^a	.01	.92	.17**	.00	.14**	.67
Psychological variables						
Risk tolerance			.03	.16	.02	.07
Financial knowledge			.17**	.00	.17**	.01
Retirement goal clarity			.12**	.00	.11**	.01
Future time perspective			.26**	.00	.21**	.01
Push/pull variables						
Self-employed (0 = Vol; 1 = Forced) ^a					-.29**	.01
Adjusted R ²	.168		.297		.311	

Note. *N* = 1,357.

^aThe coefficients for dummy variables are unstandardized. The dependent variable is standardized.

p* < .05; *p* < .01.

in self-standing work covary with financial aspects of retirement preparedness.

Thirdly, this study shows the importance of socio-demographic and psychological factors that underlie individual differences in savings and perceived pension adequacy. Saving was shown to be linked to higher levels of educational attainment, higher household incomes, and having supplemental pension rights from previous engagement as a wage earner. Three psychological variables were also found to be linked to saving. Specifically, the likelihood of saving was higher among those with a lower level of risk tolerance, a higher level of financial knowledge, and a longer future time perspective. Superior pension expectations were also observed among those who: higher annual incomes, and had supplemental pension rights from previous employment. Pension adequacy ratings were also higher for those who possessed higher levels of financial knowledge, greater retirement goal clarity, and a longer future time perspective. Taken together, the effects described in both this and the preceding paragraph reveal that a combination of demographic and psychological variables are implicated in financial preparedness for retirement among the self-employed.

Limitations and Future Directions for Research

This study is not without its limitations. First, participants were sampled from two Western European countries that arguably shared more similarities than differences when it comes to pension provisions and regulations. It would be informative to explore saving practices and perceived pension adequacy among individuals from other nations that have dissimilar pension provisions for self-employed workers.

Doing so would allow for a test of the generalizability of findings from this investigation.

A second limitation is that the research design was of a cross-sectional nature, which limits causal interpretations of the findings. Needless to say, that extending this type of research to a longitudinal setting would be of considerable value to see how changes in government and pension institutions interact with the development of self-employed individuals, but it may also offer a possibility to trace causal relations between the self-employment status and financial preparedness.

A third limitation has to do with the measurement of several constructs used in the article. Several predictor variables were based on single-item indicators that have unknown reliability and limits the construct validity and should be replaced by multi-item scales in future studies on the subject. Furthermore, one of the two dependent variables—saving—was measured in a binary fashion and the other indicator—pension adequacy—was assessed based on participants' perceptions. Future research might use a more fine-grained analysis, in which assessments are made regarding the specific nature of individuals' savings investments, as well as their actual anticipated pension adequacy using econometric indicators. Reliance on more objective indices could serve to reduce the likelihood of error stemming from various forms of individual response bias.

Policy Implications

Many countries in Europe have witnessed a marked increase in self-employment rates over the past 35 years. This is especially true in the Netherlands, where the percentage of self-employed workers has more

than doubled during that time frame. During that same period, workers in many European nations have witnessed pension-related changes in public policies, institutional practices, and state-based levels of support. For many, these changes have resulted the promise of smaller pension incomes and an increase in the number of years they can expect to spend in the workforce. Those challenges are compounded for self-employed workers—particularly those without personnel—who lack access to the types of second-tier pension. One of the avenues to assist vulnerable groups is to offer financial advice or financial education (Lusardi & Mitchell, 2014) to enable in the present case self-employed to make better financial decisions or at least be vigilant about the need for pension savings. The experience of both initiatives to either stimulate financial literacy programs or to facilitate of financial advice (Stolper & Walter, 2016; Van Dalen et al., 2016) remain disappointing although the advocates of financial literacy programs remain hopeful. And, of course, in some respects there are sensible actions to take which might help the “empowered” self-employed, such as offering an encompassing overview of accumulated retirement savings because this group is bound to consist of individuals who have non-standard careers and histories. But still, taking action to save may be the most important thing to do. In that respect, the alternative route to offering better choices and well-being is to take the self-employed as they are in real life—people who try to make a living on their own, pressed for time and just like every real person “suffering” from cognitive limitations, short-sighted and limited self-control when it comes to retirement planning (Mani et al., 2013). Nudging people in the right direction, like Thaler and Sunstein (2003) suggest, may be the sensible thing to do. And of course, governments may be well advised to try and learn from different countries in how they deal with the pension problems of self-employed (Choi, 2009). Undoubtedly, the way in which countries like the Netherlands and Germany respond to this situation in the coming decades will have significant implications for a large segment of the workforce.

ACKNOWLEDGMENTS

This work was supported by a grant from the Netherlands Institute for Advanced Studies (NIAS) to authors D. A. Hershey, K. Henkens, and H. van Dalen. Additional support was received by the Hans-Böckler-Stiftung Foundation to author Conen and a NWO VICI-grant 453-14-001 to K. Henkens. The authors gratefully acknowledge comments by Anne Burmeister and two anonymous reviewers.

REFERENCES

- Alessie, R. J., Van Rooij, M., & Lusardi, A. (2011). *Financial literacy, retirement preparation and pension expectations in the Netherlands*. Cambridge, MA: National Bureau of Economic Research.
- Austin, J. T., & Vancouver, J. B. (1996). Goal constructs in psychology: Structure, process, and content. *Psychological Bulletin*, 120, 338–375. doi:10.1037/0033-2909.120.3.338
- Blanchflower, D. G. (2000). Self-employment in OECD countries. *Labour Economics*, 7, 471–505. doi:10.1016/S0927-5371(00)00111-7
- Bovenberg, L., van Ewijk, C., & Westerhout, E. (2012). *The future of multi-pillar pensions*. Cambridge, UK: Cambridge University Press.
- Brenke, K. (2013). Allein tätige Selbständige: Starkes Beschäftigungswachstum, oft nur geringe Einkommen. *DIW-Wochenbericht*, 80, 3–15.
- Choi, J. (2009). *Pension schemes for the self-employed in OECD countries*. Paris, France: OECD
- Conen, W., Schippers, J., & Buschoff, K. S. (2016). *Self-employed without personnel: Between freedom and insecurity*. Utrecht, Netherlands: Utrecht School of Economics, Utrecht University.
- Croy, G., Gerrans, P., & Speelman, C. (2010). The role and relevance of domain knowledge, perceptions of planning importance, and risk tolerance in predicting savings intentions. *Journal of Economic Psychology*, 31, 860–871. doi:10.1016/j.joep.2010.06.002
- Deaton, A. (1992). *Understanding consumption*. Oxford, UK: Oxford University Press.
- Dhaliwal, G., & Chou, C. L. (2007). A brief educational intervention in personal finance for medical residents. *Journal of General Internal Medicine*, 22, 374–377. doi:10.1007/s11606-006-0078-z
- Disney, R., & Johnson, P. (2001). *Pension systems and retirement incomes across OECD countries*. Cheltenham, UK: Edward Elgar Publishing.
- Dohmen, T., Falk, A., Huffman, D., Sunde, U., Schupp, J., & Wagner, G. G. (2011). Individual risk attitudes: Measurement, determinants, and behavioral consequences. *Journal of the European Economic Association*, 9, 522–550. doi:10.1111/j.1542-4774.2011.01015.x
- Earl, J. K., Bednall, T. C., & Muratore, A. M. (2015). A matter of time: Why some people plan for retirement and others do not. *Work, Aging and Retirement*, 1, 181–189. doi:10.1093/workar/wau005
- Eichhorst, W., & Marx, P. (2011). Reforming German labour market institutions: A dual path to flexibility. *Journal of European Social Policy*, 21, 73–87. doi:10.1177/0958928710385731
- Ekerdt, D. J., Kosloski, K., & DeViney, S. (2000). The normative anticipation of retirement by older workers. *Research on Aging*, 22, 3–22. doi:10.1177/0164027500221001
- Fachinger, U., & Frankus, A. (2015). Freelancers, self-employment and the insurance against social risks. In A. Burke (ed.), *The handbook of research on freelancing and self-employment* (pp. 135–146). Dublin, Ireland: Senate Hall Publishing.
- Falco, P., & Haywood, L. (2016). Entrepreneurship versus joblessness: Explaining the rise in self-employment. *Journal of Development Economics*, 118, 245–265. doi:10.1016/j.jdevco.2015.07.010
- Fisher, P. J., & Anong, S. T. (2012). Relationship of saving motives to saving habits. *Journal of Financial Counseling and Planning Volume*, 23, 63–79.
- Halvorsen, C. J., & Morrow-Howell, N. (2016). A conceptual framework on self-employment in later life: Toward a research agenda. *Work, Aging and Retirement*. Advance online publication. doi:10.1093/workar/waw031
- Hamilton, B. H. (2000). Does entrepreneurship pay? An empirical analysis of the returns to self-employment. *Journal of Political Economy*, 108, 604–631.
- Hatfield, I. (2015). *Self-employment in Europe*. London, UK: Institute for Public Policy Research.
- Heraty, N., & McCarthy, J. (2015). Unearthing psychological predictors of financial planning for retirement among late career older workers: Do self-perceptions of aging matter? *Work, Aging and Retirement*, 1, 274–283. doi:10.1093/workar/waw008
- Hershey, D. A., Jacobs-Lawson, J. M., & Austin, J. T. (2013). Effective financial planning for retirement. In M. Wang (Ed.), *Oxford*

- Handbook of Retirement* (pp. 402–430). New York, NY: Oxford University Press.
- Hershey, D. A., Jacobs-Lawson, J. M., McArdle, J. J., & Hamagami, F. (2007). Psychological foundations of financial planning for retirement. *Journal of Adult Development*, 14, 26–36. doi:10.1007/s10804-007-9028-1
- Hershey, D. A., & Mowen, J. C. (2000). Psychological determinants of financial preparedness for retirement. *The Gerontologist*, 40, 687–697. doi:10.1093/geront/40.6.687
- Hofstede, G., Noorderhaven, N. G., Thurik, A. R., Uhlaner, L. M., Wennekers, A. R., & Wildeman, R. E. (2004). Culture's role in entrepreneurship: Self-employment out of dissatisfaction. In: T. E. Brown & J. Ulijn (Eds.), *Innovation, entrepreneurship and culture: The interaction between technology, progress and economic growth* (pp. 162–203). Cheltenham, UK: Edward Elgar. doi:10.4337/9781845420550.00014
- Holzmann, R. (2013). Global pension systems and their reform: Worldwide drivers, trends and challenges. *International Social Security Review*, 66, 1–29. doi:10.1111/issr.12007
- Howlett, E., Kees, J., & Kemp, E. (2008). The role of self-regulation, future orientation, and financial knowledge in long-term financial decisions. *Journal of Consumer Affairs*, 42, 223–242. doi:10.1111/j.1745-6606.2008.00106.x
- Hurd, M. D. (1990). Research on the elderly: Economic status, retirement, and consumption and saving. *Journal of Economic Literature*, 28, 565–637.
- Jacobs-Lawson, J. M., & Hershey, D. A. (2005). Influence of future time perspective, financial knowledge, and financial risk tolerance on retirement saving behaviors. *Financial Services Review*, 14, 331–344.
- Jamaludin, N., & Gerrans, P. (2015). Retirement savings investment decisions: Evidence from Malaysia. *Journal of the Asia Pacific Economy*, 20, 644–657. doi:10.1080/13547860.2015.1045324
- Kautonen, T., Down, S., Welter, F., Vainio, P., Palmroos, J., Althoff, K., & Kolb, S. (2010). Involuntary self-employment” as a public policy issue: A cross-country European review. *International Journal of Entrepreneurial Behavior & Research*, 16, 112–129. doi:10.1108/13552551011027002
- Knoef, M., Been, J., Alessie, R., Caminada, K., Goudswaard, K., & Kalwij, A. (2016). Measuring retirement savings adequacy: Developing a multi-pillar approach in the Netherlands. *Journal of Pension Economics and Finance*, 15, 55–89. doi:10.1017/S1474747214000341
- Koposko, J. L., Kiso, H., Hershey, D. A., & Gerrans, P. (2016). Perceptions of retirement savings relative to peers. *Work, Aging and Retirement*, 2, 65–72. doi:10.1093/workar/wav019
- Lusardi, A., & Mitchell, O. S. (2007). Baby boomer retirement security: The roles of planning, financial literacy, and housing wealth. *Journal of Monetary Economics*, 54, 205–224. doi:10.1016/j.jmoneco.2006.12.001
- Lusardi, A., & Mitchell, O. S. (2008). Planning and financial literacy: How do women fare? *American Economic Review*, 98, 413–417. doi:10.1257/aer.98.2.413
- Lusardi, A., & Mitchell, O. S. (2011). Financial literacy around the world: An overview. *Journal of Pension Economics and Finance*, 10, 497–508. doi:10.1017/S1474747211000448
- Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature*, 52, 5–44. doi:10.1257/jel.52.1.5
- Lusardi, A., & Mitchell, O. S. (2007). Financial literacy and retirement preparedness: Evidence and implications for financial education. *Business Economics*, 42, 35–44. doi:10.2145/20070104
- Mani, A., Mullainathan, S., Shafrir, E., & Zhao, J. (2013). Poverty impedes cognitive function. *Science*, 341, 976–980. doi:10.1126/science.1238041
- McCullough, J. B. (2012). The influence of positive psychological factors on small business owners' retirement planning activities. *Financial Services Review*, 21, 1–18.
- Noone, J., Alpass, F., & Stephens, C. (2010). Do men and women differ in their retirement planning? Testing a theoretical model of gendered pathways to retirement preparation. *Research on Aging*, 32, 715–738. doi:10.1177/0164027510383531
- Dutch Parliament. (2008). *Kabinetsreactie onderzoek motieven zelfstandig ondernemerschap*. The Netherlands: The Hague.
- Dutch Parliament. (2015a). *Eindrapport IBO zelfstandigen zonder personeel*. Netherlands: The Hague.
- Dutch Parliament. (2015b). *Kabinetsreactie interdepartementaal beleidsonderzoek ZZP*. Netherlands: The Hague.
- Quadagno, J. (1988). Women's access to pensions and the structure of eligibility rules. *The Sociological Quarterly*, 29, 541–558.
- Segel-Karpas, D., & Werner, P. (2014). Perceived financial retirement preparedness and its correlates: A national study in Israel. *The International Journal of Aging and Human Development*, 79, 279–301. doi:10.1177/0091415015574177
- Simoes, N., Crespo, N., & Moreira, S. B. (2015). Individual determinants of self-employment entry: What do we really know? *Journal of Economic Surveys*, 4, 783–806. doi:10.1111/joes.12111
- Speelman, C. P., Clark-Murphy, M., & Gerrans, P. (2013). Decision making clusters in retirement savings: Gender differences dominate. *Journal of Family and Economic Issues*, 34, 329–339. doi:10.1007/s10834-012-9334-z
- Ståhlberg, A.-C., Kruse, A., & Sundén, A. (2005). Pension design and gender: Analyses of developed and developing countries. *Gender Issues*, 22, 6–45. doi:10.1007/s12147-005-0018-y
- Stawski, R. S., Hershey, D. A., & Jacobs-Lawson, J. M. (2007). Goal clarity and financial planning activities as determinants of retirement savings contributions. *The International Journal of Aging and Human Development*, 64, 13–32. doi:10.2190/13GK-5H72-H324-16P2
- Stolper, O. A., & Walter, A. (2016). Financial literacy, financial advice, and financial behavior. Working paper, Universität Marburg.
- Taylor, M. P. (1996). Earnings, independence or unemployment: Why become self-employed? *Oxford Bulletin of Economics and Statistics*, 58, 253–266. doi:10.1111/j.1468-0084.1996.mp58002003.x
- Thaler, R. H., & Sunstein, C. R. (2003). Libertarian paternalism. *American Economic Review*, 93, 175–179. doi:10.1257/000282803321947001
- Van Dalen, H. P., Henkens, K., & Hershey, D. A. (2010). Perceptions and expectations of pension savings adequacy: A comparative study of Dutch and American workers. *Ageing and Society*, 30, 731–754. doi:10.1017/S0144686X09990651
- Van Dalen, H. P., Henkens, K., & Hershey, D. A. (2016). Why do older adults avoid seeking financial advice? Adviser anxiety in

- the Netherlands. *Ageing and Society*. Advance online publication. doi:10.1017/S0144686X16000222
- Whiteford, P., & Whitehouse, E. (2006). Pension challenges and pension reforms in OECD countries. *Oxford Review of Economic Policy*, 22, 78–94. doi:10.1093/oxrep/grj006
- Yao, R., Gutter, M. S., & Hanna, S. D. (2005). The Financial Risk Tolerance of Blacks, Hispanics and Whites. *Journal of Financial Counseling and Planning*, 16, 51–62.
- Ybema, J., Torre, W., Vroome, E. D., Bossche, S., Lautenbach, H., Banning, R., & Dirven, H. (2013). *Zelfstandigen enquête arbeid 2012: methodologie en beschrijvende resultaten*. Hoofddorp/Heerlen, Netherlands: TNO/CBS.
- Zimbardo, P. G., & Boyd, J.N. (1999) Putting time in perspective: A valid, reliable individual-differences metric. *Journal of Personality and Social Psychology*, 77, 1271–1288. doi:10.1037/0022-3514.77.6.1271

APPENDIX A: LOGISTIC REGRESSION MODELS (SHOWN BY COUNTRY) PREDICTING RETIREMENT SAVINGS

Covariate	Germany		Netherlands	
	OR	<i>p</i> -value	OR	<i>p</i> -value
Socio-demographic variables				
Age (years)	0.97**	.01	1.04**	.01
Gender (0 = female)	1.10	.63	0.99	.95
Education (years)	1.11**	.01	1.11**	.01
Household income (×1000)	1.03**	.01	1.03**	.01
Household income (missing)	1.51	.15	0.71	.20
Hours worked/week	0.99	.17	1.02*	.02
Supplementary pension rights	1.81**	.01	0.91	.66
No partner (reference)				
Working partner	1.02	.91	0.78*	.35
Non-working partner	0.83	.54	0.56	.06
Psychological variables				
Risk tolerance	0.93	.12	0.93	.34
Financial knowledge	1.27	.10	1.85**	.01
Retirement goal clarity	1.41**	.01	1.12	.43
Future time perspective	1.55**	.01	1.66**	.01
Push/pull variables				
Self-employed (0 = Vol; 1 = Forced)	0.58*	.02	0.76	.26
Pseudo R ²		0.203		0.183
χ ² (14)		175.90		147.70
N		702		655

Note. OR = odds ratio.

p* < .05. *p* < .01.

**APPENDIX B: HIERARCHICAL ORDINARY LEAST SQUARES REGRESSION MODELS
(SHOWN BY COUNTRY) PREDICTING FUTURE PENSION ADEQUACY**

Covariate	Germany		Netherlands	
	β	<i>p</i> -value	β	<i>p</i> -value
Socio-demographic variables				
Age (years)	.02	.57	.05	.15
Gender (0 = female) ^a	.08	.27	.01	.69
Education (years)	-.02	.43	-.03	.46
Household income (×1000)	.21**	.01	.18**	.01
Household income (missing) ^a	.24**	.01	.03	.76
Hours worked/week	-.07*	.03	-.07*	.04
Supplementary pension rights ^a	.27*	.01	.18**	.01
No partner (reference)				
Working partner ^a	-.15*	.05	.01	.95
Non-working partner ^a	.012	.28	.07	.49
Psychological variables				
Risk tolerance	.03	.35	.01	.87
Financial knowledge	.17**	.01	.18**	.01
Retirement goal clarity	.12**	.01	.09*	.02
Future time perspective	.23**	.01	.18**	.01
Push/pull variables				
Self-employed (0 = Vol; 1 = Forced) ^a	-.31**	.01	-.27**	.01
Adjusted R ²		.335		.261
N		702		655

Note. ^aThe coefficients for dummy variables are unstandardized. The dependent variable is standardized.

p* < .05. *p* < .01.