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Who turns to entrepreneurship later in life? - Push and pull in Finnish rural and urban areas

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Who turns to entrepreneurship later in life?

- Push and pull in Finnish rural and urban areas

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1. Introduction

Different regions may provide varying opportunities for entrepreneurship (Reynolds et al. 1994; Tervo 2007; Naude et al. 2008), which may also be the case at older ages. Not all places are alike in their potential to generate third-age entrepreneurship partly because of varying demand conditions and human capital and partly because the possibilities for entrepreneurial learning processes differ among regions (cf. Tervo and Niittykangas 1994).

In the case of Finland, the rates of self-employment rise with age in both rural and urban areas, with the exception that the rate starts to fall after age 65 in rural areas (Figure 1). In this age group, the overwhelming majority of individuals are no longer in the labour market. These higher rates occur partly because self-employed workers tend to stay longer in the labour force than wage and salary workers. Figure 1 also indicates that transitions to self-employment are most common during middle age. Novice entrepreneurship at older ages is not very common; however, some individuals do start a business later in life. The non-agricultural self-employment rate has been higher in rural than in urban locations and among employed individuals aged 55-74.

-- Figure 1 approximately here --

Older workers may wish to have more control over their time and responsibilities than is possible with paid work. Entrepreneurship is an option for many older individuals. Self-employment brings the freedom to adjust working hours, which is an advantage for many older full-time workers. In contrast, older individuals may also be pushed into

self-employment in the absence of other alternatives. While pull motives are considered positive, push factors often have negative connotations (Kirkwood 2009; Dawson and Henley 2012). Rural labour markets are characterised by weaker conditions of employment and lower educational capital but have a stronger tradition of entrepreneurship than urban labour markets. Compared with urban labour markets, rural markets have worse rates of employment and self-sufficiency in jobs. Less educated individuals in these small, dispersed labour markets may be pushed into self-employment if they see no other realistic employment options in the region (cf. Moore and Mueller 2002; Ritsilä and Tervo 2002; Kalantadiris and Bika 2006; Kim and Cho 2009). Correspondingly, there are proportionally more transitions to self-employment in rural areas than in urban areas; however, the difference diminishes and eventually vanishes with increasing age.

The focus of this paper is on the career choices of older individuals and their background motivations in Finland. Although some studies have focused on transitions to self-employment among older workers (e.g., Fuchs 1982; Bruce et al. 2000; Singh and DeNoble 2003; Hipple 2004; Zissimopoulos and Karoly 2007; Giandrea et al. 2008; Kautonen 2008; Kautonen et al. 2010), questions about the motives and particularly about the background and circumstances of these workers, including the regional environment, still need clarification. Why would someone on the verge of retirement start a business? Is it market pull, higher expected earnings, the promise of independence, flexibility and opportunities, and the fulfilment of lifelong dreams that dominate, or are individuals pushed into entrepreneurship because of reduced income or simply because nothing else is available? The results of the Global Entrepreneurship Monitor (GEM) research would show that necessity as a primary entrepreneurial motive is low in Finland: however, a relatively large share of individuals also possesses the motives of both opportunity and necessity (Heinonen et al. 2006).

In the entrepreneurship literature, the existing research on the "push-pull" debate has not provided conclusive answers, although many studies support the role of push factors (e.g., Storey 1991; Earle and Sakova 2000; Moore and Mueller 2002; Ritsilä and Tervo 2002; Tervo 2006; Brünjes and Diez 2013). The push-pull dichotomy perhaps may be over-simplistic; however, this dichotomy is useful in categorising background motives[1]. Interestingly, sociological theories suggest that low-wage workers are pushed into entrepreneurship, whereas high-wage workers are pulled into entrepreneurship by attractive opportunities (Clain 2000). To date, few empirical studies have tried to

[1] As the result of many studies based on the Global Entrepreneurship Monitor (GEM) database, the push-pull terminology has partly given way to necessity- and opportunity-driven entrepreneurship (Verheul et al. 2010).

highlight the impact of socio-economic characteristics of older entrepreneurs on their positioning in terms of necessity or opportunity entrepreneurship (see, however, Kautonen et al. 2011). van Praag and van Opheim (1995) found that the opportunity to become self-employed was significantly higher for older than for younger Americans; however, older workers were less willing to become self-employed than younger workers. Thus, age may have different effects on the willingness and opportunity to become self-employed. Empirical results have shown both positive (Reynolds et al. 2002) and negative relationships (Block and Wagner 2006) between age and opportunity entrepreneurship, while for Bergman and Stenberg (2007), age did not have an impact on the probability of necessity entrepreneurship.

In the empirical analysis, we utilise a large longitudinal micro data set to examine the transitions of individuals aged 55-74 to self-employment in Finland from 1998-2004. The data set represents a 7 per cent sample of all Finns in 2001, about whom a great deal of register-based and other data from the year 1970 onward is available. The analysis proceeds in two phases. *First*, we analyse transitions to self-employment using probit analyses with multiple explanatory variables. Who are the older individuals who enter self-employment, and what are their qualifications and personal history? What is the effect of human and financial capital on self-employment decisions? What is the role of environment and previous self-employment experience? Is self-employment in later life a real alternative only for habitual entrepreneurs? *Second*, we deepen the analysis of the push and pull motivations of those older individuals who had made the transition to self-employment. Based on their financial situation and previous employment status, older self-employed are split into different groups, after which we determine which variables predict best the probability to belong to one of the groups. The methods used here are cluster analysis and multinomial logit regression.

The paper proceeds as follows. The next section lays out the relevant theory of third-age entrepreneurship. This discussion is followed by the presentation of the main points in the empirical analysis, such as the definition of self-employment and the description of the data, variables and hypotheses. Section 4 presents first the estimation results from the probit analyses: who begins or returns to entrepreneurship later in life? These results are presented for the whole sample and then for novice and habitual entrepreneurs. The transitions from paid employment and from non-employment are also differentiated. Next, the results from the cluster and multinomial logit analyses are reported: who is pushed, and who is pulled? The final section summarises the key results and provides conclusions.

2. Third-age entrepreneurship – necessity or the last opportunity? Literature review

The paths into entrepreneurship at a later age may be varied. The utility maximising paradigm and human capital theory, first presented by Knight (1921) and Becker (1975), offer useful insights into the career choices of older workers (cf. Tervo and Niittykangas 1994; Tervo 2007). The famous utility maximising paradigm predicts that individuals choose the occupation that offers the greatest expected utility. According to this theory, older individuals compare the utility of the current labour market state with the utility that they can obtain in other states in each period and, accordingly, decide whether to continue in the current state. Because many factors play a part in determining anticipated returns, these returns will be subject to a constant process of adjustment. Older individuals' perceptions of returns may gradually change due to, for example, accumulated savings or an increasing desire to adjust working hours. The perceptions of returns may also suddenly change in response to variations or modifications in other important factors.

Lévesque and Minniti (2006) identify age as an inherent triggering factor of entrepreneurship. When considering starting a new firm, aging individuals have an incentive to reallocate more of their time to waged labour and less to starting a new firm because the opportunity costs of starting a new firm increase (ibid, p. 181). Thus, everything else being the same, an age effect reduces the relative return to entrepreneurship as individuals become older. However, age may also increase interest in entering self-employment for various other reasons, such as the human and financial capital requirements of entrepreneurship, which are often unavailable to younger workers, or the better social and business networks, which older people typically have (Parker 2009). Consequently, the opportunity to start a business tends to increase with age while the willingness decreases (cf. van Praag and van Ophem 1995).

The age dimension is explicitly present, for example, in the social development model by Gibb and Ritchie (1982) and in Dyer's (1994) model of entrepreneurial careers. These models advocate the view of entrepreneurship as a process (see also Ronstadt 1984; Low and MacMillan 1998; Davidsson et al. 2001) and suggest that becoming an entrepreneur is a real option for older workers that may more commonly be an option in the near future than it was in earlier generations. A positive life-cycle effect was found, for example, by Bönte et al. (2007), Leung and Robinson (1998) and Quinn and Kozy (1996). Improved health, finances and quality of life, as well as various innovative arrangements, enable individuals to continue working at later ages, even after having retired (Zhang 2007, 33-34).

In an analysis of early retirees' decision to become self-employed, Singh and DeNoble (2003, 209) differentiated two decisions. First, an early retiree has the option of permanently and completely withdrawing from work or continuing to participate in the market. Second, once an early retiree decides to remain active, (s)he must decide on the type of work activity. Forming one's own business venture represents a viable option. According to Singh and DeNoble (2003), the first decision is influenced by health, wealth, work history and macro-economic conditions, whereas at the second stage, liquidity constraints, environmental contingencies, individual characteristics and networks become most important.

Regarding novice entrepreneurship, transitions to self-employment in later life may be either a career option or a step toward retirement known as "bridge employment." Older workers may choose self-employment as a career option because they have a lifetime of experience and better access to capital than younger workers (Parker 2009). According to Singh and DeNoble (2003), those who enter self-employment at later ages may be constrained entrepreneurs who have harboured a desire to form their own venture for many years throughout their main careers but have lacked the financial or family flexibility needed to follow through on their ideas. Alternatively, they may be entrepreneurs who rationally decide to become self-employed, viewing self-employment as a progression of their careers and a way to increase personal wealth. In contrast, there may be reluctant entrepreneurs whose decision to become self-employed is based on a lack of employment opportunities and insufficient wealth to retire early (Singh and DeNoble 2003).

Many of the individuals entering self-employment might have previous experience in self-employment. In fact, they may well be habitual or serial entrepreneurs (Hyytinen and Ilmakunnas 2007; Ucbasaran et al. 2008; Gordon et al. 2009) who have owned a previous business but no longer own it. The case of portfolio entrepreneurship in which an entrepreneur owns two or more businesses contemporaneously is not relevant here because there is no transition to self-employment. Serial entrepreneurs account for a significant portion of entrepreneurial activity: in Europe, 18-30% of entrepreneurs are serial, and in the US, their contribution is approximately one-eighth (Westhead and Wright 1998; Headd 2003; Hyytinen and Ilmakunnas 2007; Plehn-Dujowich 2010). Earlier literature on habitual entrepreneurs shows that serial founders start their first business at a younger age than other novice founders (e.g. Westhead and Wright 1998). Amaral et al. (2011) examined how ex-entrepreneurs' levels of general and specific human capital influence their likelihood of re-entering entrepreneurship over time. Their results revealed a negative effect of general human capital on the hazard of

becoming a serial entrepreneur. The impact of entrepreneurial-specific human capital on the hazard of re-entering entrepreneurship was, in general, positive (Amaral et al. 2011). Due to their skills and social connections, experienced compared to novice founders have some advantage in the process of raising venture capital (Zhang 2011).

In addition, the phenomenon of quasi-entrepreneurship is pertinent. Quasi-entrepreneurs combine self-employment and wage work (Delmar et al. 2008), in which case self-employment may be only episodic (Carroll and Mosakowski 1987). Parallel concepts are "hobby entrepreneurship" (Giacomin et al. 2011) and "hybrid entrepreneurship" (Folta et al. 2010; Eliasson and Westlund 2012). Individuals might transition incrementally by retaining their wage job while entering self-employment. In addition, older people may start many "lifestyle" businesses to use their time beneficially or also to realise a long-held ambition. These people are entrepreneurs who prioritise lifestyle benefits over profits, including flexible hours, fulfilling work, spending time with family and friends, hobbies, charity work, or creative pursuits.

3. Data and variables

The data are based on various registers kept by Statistics Finland. Since 1970, Statistics Finland has compiled a population census every 5 years. By 1990, the census was based entirely on these registers. By matching the unique personal identifiers across the censuses, Statistics Finland has constructed a Longitudinal Census File with panel data on the entire population of Finland at 5-year intervals since 1970. In addition, since 1987, Statistics Finland has maintained the Longitudinal Employment Statistics file, which is updated annually. Because the same personal identifiers are used in both the census and the longitudinal employment statistics, the two data sets can be merged, providing panel data on each resident of Finland at 5-year intervals beginning in 1970 and annually from 1987 to 2004. By using the personal identifiers, data from various other registers can be merged with the panel data. In addition, data on spouses can be merged for every individual. As a consequence, the data set holds rich information on many variables, including labour-market performance, educational attainment, family characteristics, and neighbourhood.

Definition of self-employment

In this analysis, the definition of self-employment follows the statistical definitions used by Statistics Finland (2001). The variable "occupational status" describes the position of the employed in the labour market: entrepreneurs and wage and salary earners. The category of entrepreneurs also includes family members working without pay in a

family business. If an individual is not employed, (s)he belongs in the third category, non-employed. The non-employed are either unemployed or out of the labour force who are primarily retired individuals and students.

The data on occupational status are based on the individual's national insurance status (YEL) and wage, salary and/or entrepreneurial income received. There are two requirements to define a person as an entrepreneur: (s)he had a self-employed person's pension insurance during the last week of the year, and her/his income from entrepreneurship exceeds her/his wage income if the person is also in an employment relationship (for details, see Statistics Finland 2001). Accordingly, having self-employed pension insurance is the primary criterion. This insurance is required by law if self-employment has continued for at least four months and the individual's entrepreneurial income exceeds an annual specified limit.

The sample and its features

We use a 7% random sample of the individuals who resided permanently in Finland in 2001, drawn from the basic registers. The individual-level panel data were transformed and pooled into a sample of individuals aged 55-74 to analyse their labour-market transitions in the period from 1998-2004. Thus, this pooled data set includes transitions from a six-year period. The pooling was done to ensure a sufficient number of transitions to self-employment. In addition to the age restriction, the agricultural sector was excluded from the sample because the concept of self-employment is more vague in agriculture than in other industries and because farm businesses have very different characteristics compared with nonfarm businesses (Blanchflower 2000; Parker 2009). Accordingly, the analysis concerns the transitions of individuals aged 55-74 to non-agricultural self-employment in Finland during the period from 1998-2004.

An individual was included in the sample for each year if (s)he met the age criteria and was either in wage work or non-employed. If an individual switched to self-employment, (s)he was not included in our data for the subsequent year; once an individual entered self-employment, (s)he could not enter it the subsequent year (although an individual can enter self-employment the year thereafter if (s)he switched from self-employment during the intervening year). The total number of observations in the data is 385,371, and the number of individuals is 88,829. Of the total number of observations, 41.2% are from rural locations, and 58.8% are from urban locations.

In the data, there were 425 transitions to self-employment, of which 226 were from wage work and 199 were from non-employment. Of the transitions, 40.0% took place in

rural locations and 60.0% in urban locations. Combined, these figures show that the annual probabilities for becoming self-employed in later life are very low: only 0.107% in rural locations and 0.113% in urban locations. However, when these figures are generalised, approximately 1,000 individuals aged 55-74 switched to non-agricultural self-employment in Finland per year. Some individuals, 2% in rural areas and 4% in urban areas, entered self-employment twice during the study period. In most cases, those who switched to self-employment had self-employment experience earlier in life (74% in rural areas and 65% in urban areas). In sum, 14% had been self-employed for one or two years; 10% for three to five years; 15% for six to ten years; and 30% for more than ten years. Only 31% of the individuals had no previous self-employment experience. Of the habitual entrepreneurs, 39% had been in a state of self-employment two years earlier and were thus only one year out of entrepreneurship; 18% had an interval of three to five years; and 43% had a period of more than five years since their previous self-employment experience. These findings show that the variable describing previous self-employment experience may be important for the results and must be considered in the analysis.

Many of the transitions to entrepreneurship were in two industries. One industry was wholesale and retail trade, and the other industry was real estate, renting and business activities. The shares of transitions into these industries were 13% and 9% in rural areas, respectively, and 14% and 17% in urban areas, respectively. Accordingly, many transitions are directed to business services in urban areas. Manufacturing industries, construction and other services are also industries in which transitions to entrepreneurship were common. Unfortunately, the industry was unknown in 45% of all transitions in rural areas and in 33% of all transitions in urban areas.

Explanatory variables and hypotheses related to them

As the review of theories showed, various reasons such as age, health, gender, education, family status, accumulated savings, organisational factors and environmental features can affect the decision between self-employment and other options as well as between full-time work, bridge employment and retirement. Our main interest is in the role of environment, previous self-employment experience, gender, educational attainment, motivation and role models.

Table 1 provides information on the formation and means of the variables. *First*, two dummy variables, i.e., prior self-employment experience and occupational status (wage work vs. non-employment), describe the basic features of individuals. It is expected that these features are decisive for the choice between different options. It is expected that

individuals with previous self-employment experience are more likely to enter self-employment than individuals without this prior experience. These individuals are also expected to deviate from the others with respect to many characteristics. Similarly, it is expected that occupational status is an important distinguishing factor in the transition to self-employment.

-- Table 1 approximately here--

Second, a dummy variable indicates whether the individual is male or female. There are differences in the self-employment rates between men and women, with women tending to be a minority of the self-employed workforce in all developed countries (Parker 2009). This situation also applies to Finland. Tervo and Haapanen (2010) showed that for men, age has a nonlinear effect on the probability of being self-employed in Finland, whereas the result is not significant for women. Women may be somewhat more likely than men to choose bridge employment because they usually exit from the workforce earlier in their careers and, consequently, have smaller pensions upon which to draw. The effects of gender on decisions to pursue bridge employment are, however, inconclusive (Kim and Feldman 2000).

Third, the two education variables separate those with an intermediate and a higher level of education from those with a basic education. The customary hypothesis is that education will increase an individual's probability of becoming self-employed because it enhances her/his human capital (Rees and Shah 1986). This hypothesis is consistent with many empirical findings (c.f., e.g., Blanchflower and Oswald 1998; Parker 2009); however, Finnish results suggest that individuals with a higher level of education have a lower probability of being self-employed (e.g., Johansson 2000: Uusitalo 2001; Niittykangas and Tervo 2005; Tervo and Haapanen 2010). In addition to the level of education, three variables indicate three main educational orientations: the first variable separates those with a commercial and social education, the second variable identifies those with a technical education, and the third variable identifies those with a medical and/or related education.

Fourth, a dummy variable indicates whether the individual is married or cohabiting, on the one hand, or single, on the other hand. Self-employment decisions may be best viewed from the perspective of the household rather than that of the individual (Karoly and Zissimipoulos 2004). An individual's family network and family responsibilities may play a key role in the decision to accept bridge employment because a complete withdrawal from the workforce involves the loss of both income and social interaction. A potentially important variable is the one that determines whether a spouse is self-

employed because having a working spouse increases the probability of self-employment (Bernhardt 1994; Blanchflower and Oswald 1998). In particular, individuals who have self-employed spouses have higher self-employment rates. Self-employed persons in the family are role models and can offer assistance in many practical matters. A self-employed spouse may also be a factor of great significance in increasing bridge employment. A dummy variable indicating whether a spouse is non-employed is thus also important.

Fifth, three variables assess the financial situation. Two variables describe taxable property in the family, and the third variable describes taxable income. The availability of financing is emphasised in the entrepreneurship literature because liquidity constraints may play an important role in determining those who become self-employed (Evans and Jovanovic 1989; Blanchflower and Oswald 1998). The role of wealth in a senior's decision to become self-employed may vary depending on the type of individual (Singh and DeNoble 2003). As an individual's accumulated savings or pension benefits become greater, there is a lower economic need for continued work. In these cases, incentives for starting a business may be low. In contrast, if older individuals are capable and motivated, they are more likely to become self-employed if they have access to financial resources.

Finally, bridge employment and career choices may be affected by environmental factors (Haapanen and Tervo 2008; Tervo and Haapanen 2010). Regions with strong traditions of entrepreneurship may also be more favourable to bridge employment in the form of self-employment than regions that do not display such strong traditions. Rural areas are typically characterised by weaker conditions of employment but a stronger tradition of entrepreneurship than urban areas, thus also providing role models for potential older entrepreneurs. A dummy defines whether the individual resides in a rural or in an urban area. A municipality is classified as an urban area if not less than 80% of people live in urban settlements. Otherwise, a municipality is classified as a rural area.

4. Results

4.1 Who begins or returns to entrepreneurship later in life?

Table 2 shows our estimation results on the transitions to self-employment. To first assess the role of the two key variables, that is, previous self-employment experience and prior occupational state, a specification with all variables was estimated. The results show previous self-employment to have a great effect on the probability of

entering self-employment at a later age. While the effect of prior occupational status does not dominate, its effect is also important. Because these two variables are essential for a proper understanding of the phenomenon under scrutiny, we have performed the estimations for the groups separately. We first considered those who made their transitions from wage work to be distinct from those who transitioned from non-employment. We then looked within each group for those with and without preceding self-employment experience.

-- Table 2 approximately here ---

Before moving on to these group-specific estimations, we consider the results related to the entire sample. In addition to previous self-employment experience and prior occupational state, gender, level of education, family relations, spouse's situation and the type of region have a significant effect on the probability of transitioning into self-employment at later ages. To illustrate the probability of entering self-employment and the effects of various factors on it, we have calculated some predicted probabilities in certain interesting cases (Table 3). As a nonlinear function, probit has the property that the marginal effect of any independent variable on the response probability will vary depending on the initial probability. The magnitude of the effect also depends on the values of the other variables, though the direction of the effect can be observed immediately from the sign of the coefficient.

--- Table 3 approximately here ---

Our illustrative calculation is based on the case of the most favourable situation according to our estimated model. This situation entails a highly educated working male with a technical orientation who has previous self-employment experience, is married, has a self-employed wife, has very high annual earnings, but has no property and lives in an urban area. In this case, the predicted probability of entering self-employment during a year is as high as 7.3% (Table 3). The significance of any individual variable can now be illustrated if we change the value of the variable in question while keeping all other variables unchanged. Table 3 confirms that prior self-employment experience has a considerable effect on the predicted probability: if a man does not have this prior experience, his predicted probability falls from 7.3% to 1.4%. If a man is retired instead of being engaged in wage work, the predicted probability is smaller by half, 3.3%, than in the most favourable situation. Furthermore, if a man is both retired and has no prior self-employment experience, the predicted probability that he will enter into self-employment is only 0.5%, though all of the other factors would be as favourable as possible with regard to a positive self-employment decision.

A woman, compared to a man, has a lower probability of entering self-employment at an older age, which is not surprising because women also have a lower probability at younger ages. In our illustrative case, if the question is about a woman instead of a man, the predicted probability falls from 7.3% to 5.5%.

Individuals with a high level of education have a higher probability of entering self-employment in later life than individuals with a basic education. In our illustrative case, if a working man has only basic education rather than a high level of education, the predicted probability falls to 4.7%. The result is in accordance with the standard hypothesis of the effect of human capital and is consistent with many international findings; however, this result contrasts with previous Finnish results. Our study, with its focus on older entrepreneurs, shows that in mature years, a higher earnings capacity due to higher education does not reduce the probability of becoming self-employed, perhaps because mature workers have a higher preference for leisure than younger workers.

Married or cohabiting individuals have a somewhat higher probability of transitioning into self-employment than single individuals. This result is in accordance with the general finding that self-employment status is positively associated with marital status (Parker 2009). Furthermore, if a spouse is self-employed, the probability increases; however, if the spouse is non-employed—retired or unemployed—the probability decreases. In our example, if the wife of the working man is retired, the predicted probability falls from 7.3% to 4.5%, and if she is not self-employed, it falls even more, to 3.7%, *ceteris paribus* (Table 3). These results highlight the significance of a spouse and the significance of the overall life situation. A self-employed spouse may serve as a role model and provide business skills and valuable advice for the individual (Bruce 1999; Tervo and Haapanen 2010). In contrast, a retired spouse may prefer that her/his mate is also not working.

The regional environment has some importance on the decision of older individuals to transition into self-employment: living in an urban area advances entering self-employment at older ages. This finding is interesting because the self-employment rate in Finland is higher in rural than in urban locations. The finding perhaps reflects the fact that those entering self-employment at older ages are different in many respects from those who already are self-employed.

Group-related results

An analysis of the group-specific estimations reveals the determinants of self-employment in each group. There are notable differences with regard to the effects of certain variables. Gender is not significant among those who have no prior self-employment experience; however, gender is significant if individuals have such experience. This finding is particularly true among those who have prior self-employment experience because men are more likely than women to transition into self-employment at later ages. This result reflects the fact that habitual entrepreneurs are more often male.

Higher education increases the probability of entering self-employment, particularly among non-employed individuals without earlier self-employment experience. If an older worker has prior experience, higher education does not have a significant effect. The field of education also plays some role. Among those who have prior entrepreneurship experience, commercial education increases the probability of transitioning to self-employment, particularly from non-employment, compared with older adults with education in other fields. A medical education also increases the probability of entering self-employment if the older individual has prior self-employment experience and is non-employed. Among those without prior self-employment experience, none of the three fields has a significant effect.

Marriage or cohabitation increases the probability of self-employment, particularly for former entrepreneurs. Interestingly, we find a strong result related to the effect of a self-employed spouse: self-employed spouses pull their partners into entrepreneurship at later ages, particularly if an older worker has no prior self-employment experience. The effect of a self-employed spouse contrasts with the effect of a non-employed spouse. As previously noted, an individual with a non-employed spouse is less likely to become self-employed. This effect increases when the individual has prior self-employment experience. If an older individual has no earlier self-employment experience, the effect of a non-employed spouse is not significant.

While the individual's financial situation is significant in specific groups, no significant results were found for the entire sample. An interesting finding is that a high income level increases the probability of becoming self-employed if a senior enters self-employment from wage work and has not previously been self-employed. This finding may well reflect the situation of constrained entrepreneurs who have harboured a desire to form their own venture for many years during their main careers but have

lacked the financial means and other factors necessary to follow through on their ideas (cf. Singh and DeNoble 2003).

Finally, from the regional point of view, an important finding is the effect that region type has on entering self-employment in later life. If a senior is from an urban area and has worked earlier as an entrepreneur, the probability of transitioning to self-employment increases whereas region type does not matter if (s)he has no prior self-employment experience. In this case, a rural area is at least as favourable an environment for entering self-employment at older ages as an urban area.

An important finding is that novice entrepreneurship is more rare at later ages. As expected, novice entrepreneurs deviate from habitual entrepreneurs in many respects. To summarize, the most important differences are the environment in which an individual lives, the individual's financial position, one's gender, and the situation of the individual's spouse. *First,* while older workers entering habitual entrepreneurship often are male, gender does not differentiate older workers entering entrepreneurship for the first time. In this case, women transition equally into self-employment. *Second,* the educational background differs between the groups because novice entrepreneurs are often highly educated. However, educational background is not significant among habitual entrepreneurs though habitual entrepreneurs often have business-orientated training. *Third,* an entrepreneurial spouse has an important effect on the decision to enter self-employment at a later age, particularly if an individual has no prior self-employment experience. The effect is smaller but also positive among habitual entrepreneurs. This result describes the importance of role models, particularly for novice entrepreneurs at older ages. *Fourth,* although high income or assets in general do not increase the probability of entering self-employment at older ages, high earnings increase the probability if a senior is still in wage work and has no previous personal experience in entrepreneurship. Thus, a good financial situation contributes to novice entrepreneurship of wageworkers at older ages.

4.2 Who is pushed, and who is pulled?

To obtain an understanding what motivates older individuals to switch into self-employment, we next develop profiles of necessity and opportunity entrepreneurs in terms of personal and other characteristics. In this exercise, we first group those who made transitions into self-employment based on their financial situation and current activity one year before the transition using a statistical multivariate technique, cluster analysis and three variables available in the data: wageworker/non-employed, taxable income and taxable property. Thus, the clustering is grounded solely on "cold" facts;

other types of push and pull motivations cannot be recorded in an analysis based on register data.

The general idea of cluster analysis or clustering is grouping a set of objects in such a way that objects in the same group (called cluster) are more similar (in some sense or another) to each other than to those in other groups (clusters). There are many cluster models and clustering algorithms. In our exercise, we use the quite standard kmeans cluster analysis. This partition-clustering method breaks the observations into a distinct number of overlapping groups, the number of which here is three. Each observation is assigned to the group whose mean is closest; new group means are then determined based on that categorisation. These steps continue until no observations change groups. The similarity measure used is the Euclidean distance. (Stata 2005)

To label the three clusters, Table 4 shows the means of the clustering variables for each cluster. In the first cluster (n=280), relatively many of the self-employed come from non-employment, and their income and property remain small, while the situation in the second cluster (n=35) is the reverse. The interpretation is that older individuals in the first cluster were pushed into self-employment because of reduced income, while individuals in the second cluster were more likely pulled into it. These individuals had no external, compelling reason to start a business. The third cluster (n=110) includes older self-employed who are in-between the two other clusters with regard to the means of the three clustering variables. Thus, clustering produced clear-cut results, although the second cluster remained small. This result does not necessarily mean that the number of opportunity-driven older self-employed is small for the reason that those in the third cluster, or at least part of them, may be classified as opportunity-driven entrepreneurs.

---Table 4 approximately here ---

The next step is to evaluate how various personal, family and environmental factors deviate between the self-employed belonging to one of the clusters. Can we find variables that discriminate between the "push", "pull" or "in-between" clusters? To obtain an overall picture, Table 4 shows the means of the variables in each cluster and the results based on a one-way analysis of variance (ANOVA) to test for significant differences between means. These results show that most of the variables have significance.

To analyse further the effect of each variable on the probability that a self-employed belongs to one of the clusters, a multinomial logit regression was conducted. [2] In general, multinomial logit regression is a model that is used to predict the probabilities of the different possible outcomes of a categorically distributed dependent variable, given a set of independent variables. This model is used when the dependent variable in question is nominal and has more than two categories. In the estimation, the "push" cluster is designated as the reference category. The probability of membership in other categories is compared to the probability of membership in this category. This approach facilitates the interpretation of the results related to the estimated coefficients and their statistical significance. Because the coefficients may be difficult to interpret, we also report the marginal effects of the regressors.

The estimation results from the multinomial logit model appear in Table 5. *First,* the results show that prior self-employment experience does not have significance at this point. Although earlier experience has a large effect on the probability of entering self-employment at a later age, it does not differentiate those who have push or pull motivations. *Second,* the results imply that regional environment is important. As hypothesised, the necessity-driven self-employed are more likely from rural areas. The environment does not, however, differentiate those who were recognised to be opportunity-driven, whereas "in-between self-employed" are more likely from urban areas, particularly compared to those driven by necessity. Regional unemployment rate does not have significance. *Third,* gender has great significance. The probability of being classified as an opportunity-driven self-employed increases for men, while the probability of being classified as a necessity-driven self-employed increases for women. *Fourth*, education is also a strong predictor. Those who are pushed into self-employment are less educated. The probability of being classified as an opportunity-driven self-employed or "in-between self-employed" increases with the level of education. The field of education plays also a certain role. If a self-employed has a business education, her/his probability increases to be classified as a necessity-driven self-employed and decreases to be classified into the "in-between" category. The estimated coefficients suggest that those with a medical education are more likely to be pulled into self-employment than those with another orientation in education. *Fifth*, family characteristics also play some role. If a self-employed is unmarried, her/his probability of being pushed into self-employment increases. Marriage does not, however, have an effect on the probability of being classified as an opportunity driven self-employed; however, marriage differentiates the "in-between" category: those classified into this category are more likely married. The spouse's characteristics do not

[2] Another option would have been discriminant analysis.

have significance. An interesting exception is the spouse's property: if a spouse has property, the probability of being classified as an opportunity-driven self-employed increases.

---Table 5 approximately here ---

5. Conclusions

Age is an important factor in entrepreneurship. Even in their social development model, Gibb and Ritchie (1983) examined entrepreneurial careers and found age and stage of life to be crucial factors. Depending on the individual, aging can both encourage and discourage the decision to enter self-employment. Singh and DeNoble (2003) theorised that certain characteristics distinguish different types of older entrepreneurs. Our empirical results show that many characteristics affect the decision to enter self-employment in later life.

It is particularly important to distinguish habitual entrepreneurs from novice entrepreneurs; those who have prior self-employment experience from those who do not. Habitual entrepreneurs may be serial entrepreneurs who continuously start new businesses, or they may be quasi-entrepreneurs who have combined self-employment and wage work. Habitual entrepreneurship, whether serial or quasi-entrepreneurial, is important because most individuals entering self-employment in later life have prior self-employment experience — some even have a long history of entrepreneurship behind them.

The results suggested that due to a lower level of demand and lower educational capital, self-employment is less tempting in rural than in urban areas. As a result, transitions to self-employment at older ages are less frequent in rural areas than in urban areas, although rural areas have strong traditions of entrepreneurship. Seniors with prior experience are more likely to start a business in urban areas: habitual entrepreneurship is more frequent in urban areas, at least in later life. Older workers without prior experience in self-employment, however, start businesses in rural areas as likely as in urban areas.

The paths into entrepreneurship at older ages may be varied. Most enter self-employment from paid employment, though a small number do enter from non-employment. Our results suggest that a career option is often linked with transitions from wage work, whereas those transitioning from non-employment seek a bridge to full retirement. No sharp division between these two options can be made, however.

The results related to the question whether older individuals are pushed or pulled into self-employment provided some interesting insights. Those who were recognised to possess pull motives were characterised to be more likely male and/or highly educated, whereas those who were recognised to possess push motives were more likely female, unmarried and/or less educated with an orientation of business education. Another interesting finding was that both necessity- and opportunity-driven self-employed have prior self-employment experience. Independent of whether entrepreneurship is necessity- or opportunity-driven, it is most likely habitual.

From the point of view of a society, entrepreneurship is potentially an important option to offset the negative effects of an aging labour force because entrepreneurs work much longer than wageworkers. Unfortunately, our results, which indicate that novice entrepreneurship in later life is relatively rare, do not indicate a widespread use of this option. The fact that entrepreneurship at later ages is often habitual supports the view that third-age entrepreneurship is a way of life rather than a new activity. This fact also supports the view that entrepreneurship is a life-long learning process. Furthermore, for many seniors, entering self-employment most likely is a form of bridge employment. Of course, this fact could also contribute to extending careers.

There is still much that needs to be learned about third-age entrepreneurship. Therefore, more research is needed. It is particularly important to analyse the differences between older and younger entrepreneurs. Do the motives and determinants of the transition into self-employment differ based on the age of the entrepreneur? Analysing these questions would also offer some leverage regarding current debates on aging and the role of entrepreneurial behaviour in providing incomes for the non-employed.

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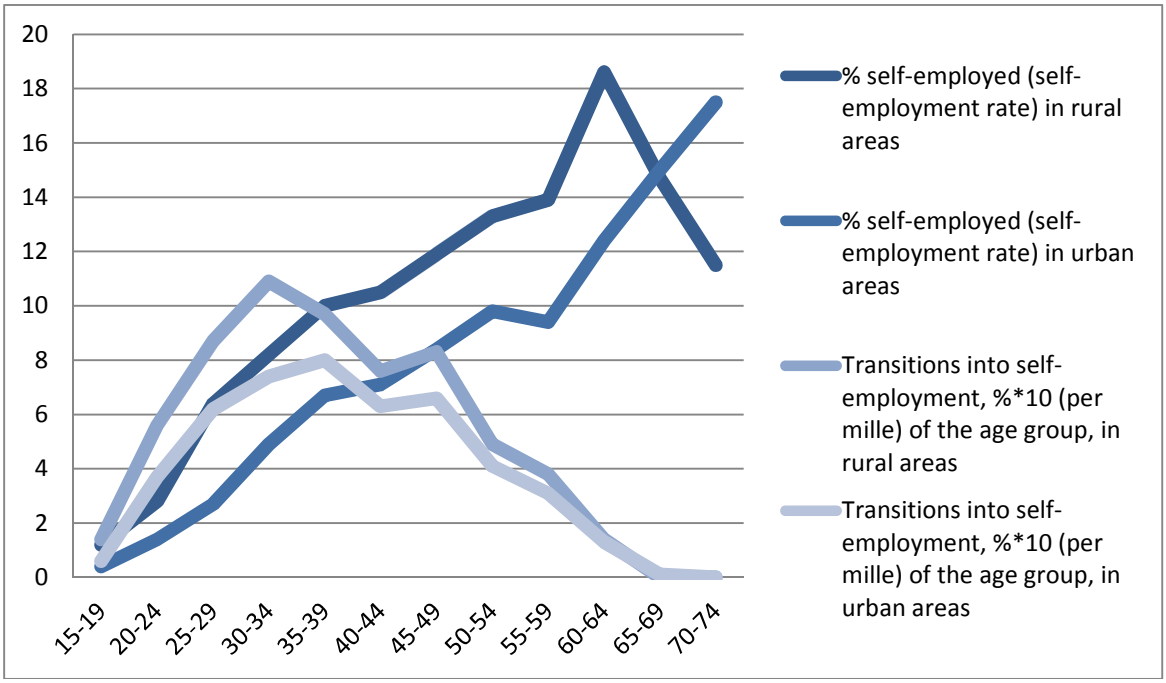

Figure 1. Self-employment rate and transitions into self-employment by age in rural and urban regions of Finland in 2001 (non-agricultural self-employment)

Table 1. Description and means of variables

Variable	Description	Means		
		Has switched into self-employment[1]		
		No	Yes	All
Basic features				
Previous self-employment experience	1 if has been self-employed earlier (from 1970 on), 0 otherwise	0.23	0.69	0.23
Wageworker	1 if in wage work in year *t-1*, 0 if non-employed	0.23	0.53	0.23
Individual characteristics				
Male	1 if male, 0 if female	0.46	0.64	0.46
Level of education (reference category basic education)				
-Intermediate	1 if secondary education is attained, 0 otherwise	0.23	0.27	0.23
-High	1 if tertiary education is attained, 0 otherwise	0.19	0.35	0.19
Field of education (reference category other fields)				
-Social sciences and business	1 if field of education is business or social sciences, 0 otherwise	0.08	0.14	0.08
-Technology	1 if field of education is technology or natural sciences, 0 otherwise	0.14	0.24	0.14
-Health and welfare	1 if field of education is health or welfare, 0 otherwise	0.06	0.06	0.06
Family characteristics				
Married or cohabiting	1 if married or cohabiting in year *t-1,* 0 otherwise	0.69	0.80	0.70
Spouse entrepreneur	1 if spouse is self-employed in year *t-1*, 0 otherwise	0.02	0.13	0.02
Spouse non-employed	1 if spouse is non-employed in year *t-1*, 0 otherwise	0.31	0.14	0.31
Financial situation				
Taxable income	Income subject to state taxation in year *t-1* (in 10,000 euros)	1.84	2.85	1.84
Taxable property	Property subject to state taxation in year *t-1* (in 100,000 euros)	0.27	0.40	0.27
Spouse's taxable property	Spouse's property subject to state taxation in year *t-1* (in 10,000 euros)	0.62	0.64	0.62
Environmental characteristics				
Urban municipality	1 if home municipality is classified as an urban area (in which not less than 80% of people live in urban settlements), 0 otherwise	0.59	0.60	0.59
Number of observations		385,157	425	385,582

[1]Concerns transitions of individuals aged 55-74 years to non-agricultural self-employment in Finland during the period from 1998 to 2004.

Table 2. Probit model for the determinants of transitions into self-employment at older ages

Variable	*All transitions*			*Transitions from wage work*		*Transitions from non-employment*	
		Self-employment experience		Self-employment experience		Self-employment experience	
		No	Yes	No	Yes	No	Yes
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Basic features							
Previous self-employment experience	0.76***	--		--		--	
Transitions from wage work	0.38***	0.22***	0.49***	--		--	
Individual characteristics							
Male	0.15***	0.06	0.21***	0.12	0.22***	0.00	0.20***
Level of education (reference category basic education)							
-Intermediate	0.10*	0.12	0.06	-0.08	-0.05	0.31***	0.11
-High	0.22***	0.32***	0.09	0.20*	0.01	0.49***	0.12
Field of education (reference category other fields							
-Social sciences and business	0.04	-0.15	0.21**	-0.18	0.13	-0.12	0.31**
-Technology	0.07	0.00	0.14*	0.03	0.17	-0.07	0.11
-Health and welfare	0.03	-0.09	0.13	-0.02	-0.14	-0.17	0.37***
Family characteristics							
Married or cohabiting	0.13***	0.06	0.19***	0.12	0.17*	0.05	0.21***
Spouse entrepreneur	0.33***	0.56***	0.20***	0.49***	0.06	0.76***	0.33***
Spouse non-employed	-0.25***	-0.09	-0.36***	0.06	-0.26***	-0.18*	-0.39***
Financial situation							
Taxable income	0.01*	0.02*	0.01	0.04***	0.02*	-0.06	0.00
Taxable property	-0.01	0.00	-0.03	-0.00	-0.05	0.00*	-0.02
Spouse's taxable property	-0.01	-0.00	-0.02	-0.07	-0.01	0.00**	-0.03
Environmental characteristics							
Urban municipality	0.11***	-0.04	0.18***	-0.09	0.20***	0.02	0.15**
Constant	-3.86***	-3.63	-3.22***	-3.41***	-2.67***	-3.59***	-3.24***
Number of observations	385 582	298 308	87 274	77 660	12 259	220 684	75 015
McFadden's pseudo R^2	0.133	0.061	0.102	0.049	0.038	0.056	0.061

Note: * Significant at 10% level; **Significant at 5% level; ***Significant at 1% level.

Table 3. Predicted probabilities for a probit model of older adults' employment choices (based on estimated model 1)

	Predicted probabilities of entering self-employment	95% confidence interval
Most favourable situation: A highly educated working male with technical orientation who has previous self-employment experience, is married and whose wife is an entrepreneur, has a very high income level, but no property and lives in an urban area.	0.073	0.037 – 0.110
Otherwise the same; however,		
- has no previous self-employment experience	0.014	0.005 – 0.023
- is retired	0.033	0.013 – 0.054
- has no previous self-employment experience & is retired	0.005	0.001 – 0.009
- is female	0.055	0.024 – 0.085
- has only basic education	0.047	0.017 – 0.077
- wife is not an entrepreneur	0.037	0.017 – 0.058
- wife is retired	0.045	0.018 – 0.072
- not married	0.057	0.025 – 0.088
- lives in a rural area	0.059	0.028 – 0.091

Table 4. The means of the variables in the three clusters

Variable	Cluster			
	1. "Push" (n = 280)	2. "Pull" (n = 35)	3. "In-between" (n = 110)	Significance of the differences (ANOVA)
Clustering variables				
Wageworker	0.42	0.83	0.72	***
Taxable income	1.07	12.30	4.32	***
Taxable property	0.23	1.38	0.50	***
Independent variables				
Previous self-employment experience	0.70	0.60	0.67	
Male	0.56	0.91	0.74	***
Level of education				
- Intermediate	0.31	0.09	0.23	***
- High	0.24	0.69	0.52	***
Field of education				
- Social sciences and business	0.14	0.17	0.12	
- Technology	0.20	0.29	0.33	**
- Health and welfare	0.04	0.11	0.10	*
Married or cohabiting	0.77	0.86	0.87	**
Spouse entrepreneur	0.15	0.09	0.11	
Spouse non-employed	0.14	0.09	0.15	
Spouse's taxable property	0.65	1.13	0.48	
Urban municipality	0.54	0.66	0.73	***
Unemployment level	12.35	11.22	11.42	*

Note: * Significant at 10% level; **Significant at 5% level; ***Significant at 1% level.

Table 5. Multinomial logit model for the determinants of belonging to one of the clusters

Variable	Cluster 1 "Pull" (reference)	Cluster 2 "Push"		Cluster 3 "In-between"	
	Marginal effect	Coefficient	Marginal effect	Coefficient	Marginal effect
Previous self-employment experience	-0.01	-0.39	-0.02	0.08	0.02
Male	-0.21***	2.82***	0.09***	0.81***	0.12**
Level of education (reference category basic education)					
-Intermediate	-0.04	-0.51	-0.02	0.31	0.07
-High	-0.29***	1.56**	0.06	1.32***	0.24***
Field of education (reference category other fields)					
-Social sciences and business	0.15**	-0.51	-0.01	-0.89**	-0.14**
-Technology	0.02	-0.36	-0.01	-0.05	-0.01
-Health and welfare	-0.18	1.58*	0.10	0.55	0.07
Married or cohabiting	-0.15***	0.71	0.02	0.80**	0.13**
Spouse entrepreneur	0.05	-0.65	-0.02	-0.22	-0.03
Spouse non-employed	0.02	-0.59	-0.02	-0.04	-0.00
Spouse's taxable property	0.02	0.13*	0.01**	-0.13	-0.03
Urban municipality	-0.11**	-0.04	-0.01	0.63**	0.11**
Unemployment level	0.01	-0.05	-0.00	-0.02	-0.00
Constant	-	-4.57***	-	-2.73***	-

Number of observations = 425; Log likelihood = -303.02; LR chi2(26) = 99.78***; Pseudo R^2 = 0.141

Note: * Significant at 10% level; **Significant at 5% level; ***Significant at 1% level.